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College of Health Sciences

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2013

Abstract

Religious-Based Social Relationship and the Psychological Well-being of the Elderly:

Gender and Race Variations

by

Eugene C. Uche

M. S. Columbia Southern University, USA, 2008

B. S. University of Uyo, Nigeria, 2000

Dissertation Submitted in Partial Fulfillment

of the Requirements for the Degree of

Doctor of Philosophy

Public Health/Epidemiology

Walden University

November 2013

Abstract

More people in the United States are approaching retirement age, a trend which has resulted in increased study on life satisfaction and psychological well-being of the elderly. Previous researchers have focused on the relationship between religious social support and life satisfaction; however, there remains a gap in the literature regarding how race and gender may influence this association. Knowledge of interactions between religiosity, gender, and race will enable counselors working with different groups of religiously inclined clients to develop and implement religious-based interventions specific to their clients. Guided by the social ecological model, the purpose of this study was to examine how gender and race influence religious social relationships and psychological well-being, optimism, and self-rated health among the elderly, using data from the Religion, Aging, and Health Survey. Pearson bivariate correlations and hierarchical linear regression were used to examine multicollinearity among variables and whether the association between the religious variables measured and the psychological well-being of the elderly varied by gender and/or race. All 3 religious constructs significantly predicted positive well-being outcomes. However, only gender and race interactions were significant for the religious-based relationships with others variable. Income and marital status were found to be significant covariats for this study. Also, both income and marital status were significantly associated with the relationship between religious variables and the psychological well-being of the elderly. Findings from this study can aid religious leaders and public health practitioners in developing programs and policies to improve perception of health and psychological wellbeing among the elderly.

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Dedication

To my late beloved brother, Dr. Stanislaus Uche, for all you were to me. I loved you and I will always love you.

Acknowledgments

My heartfelt gratitude goes to Jesus Christ, my Lord and Savior, whose great grace has brought me this far. To my beautiful wife Berlinda Uche, who has given me more support than I could have ever asked for; you are truly a blessing to me. To my dear friend Solomon Dibie, thank you for joining forces with my wife to push me all the way, especially when I lost my parent and my brother. To my spiritual fathers – Dr. Kayode Ijisesan (Kingsword International Church), Dr. Tayo Brown (God's Remnant Assembly), Pastor Uzo O'Dike (Living Word Center), and Pastor Tayo Akinyemi (Kingsword International Church), thank you all for your prayers and encouragement. Special thanks to my dissertation chair, Dr. Robinson Jamuir, for guiding me through this stimulating and challenging process. Thanks for allowing God to use you and for literally walking me through this journey. I will always be grateful. To my dissertation committee member, Dr. Tolupe Osoba, I am truly grateful for all your feedback; I could not have done it without every one of you.

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Chapter 1: Introduction

The American Association of Geriatric Psychiatry (AAGP; 2001) has reported a growing concern about the psychological well-being of the elderly in the United States. For example, it has been estimated that about 25% of older Americans show symptoms of mental illness (AAGP, 2001). Depressive symptoms are reported by health professionals as being the most common complaints among the elderly population. This is a serious public health concern, especially in an aging population that tends to require more resources for support, care, and medical support than the general population (American Psychological Association, 2001; Antonucci et al., 2002). Ellison and Levin (1998) suggested that different factors could contribute to depressive sympoms especially among the elderly, making, religious social support an important factor. Krause (2004) found that religious social support networks tend to elevate or restore the health of members of religious groups. The Pew Global Attitudes Project (2002) found that 65% of elderly Americans believed that religion plays an important role in their lives, with 42% attending religious services weekly or almost weekly. This shows how much religion and religious support could affect majority of Americans especially the elderly.

Numerous research studies about the relationship between religiosity and health have emerged within the past decade. Koenig, McCullough, and Larson (2001), Koenig (2006), and Dillon and Wink (2007) also claimed that religiosity and spirituality play an important role in preserving health, mainly among the elderly. They added that it often serves as a powerful coping resource for the elderly to deal with life issues peculiar to the elderly, such as the loss of a family member, spouse, or friend or a disaster (Harrison,

Koenig, Hays, Eme-Akwari, & Pargament, 2001). Statistically significant relationships between religious variables and the psychological wellbeing of the elderly have been reported among the American populace (Koenig & Larson, 1998; Koenig, McCullough, & Larson, 2001; Oman & Reed, 1998; Yoon & Lee, 2004).

Tabak and Mickelson (2009) claimed that, due to inconsistent findings on the relationship between religiosity and health, numerous researchers have examined the impact of different dimensions of religiosity on psychological well-being. The results of such studies have been mixed, with some finding statically significant positive relationships between religiosity and psychological well-being, some reporting negative relationships, and others reporting no relationship at all (Tabak & Mickelson, 2009). However, the majority of the researchers have reported an association between religiosity and well-being among the elderly population in a general context, without focusing on gender and racial differences. No scholar has examined whether there are gender and racial differences in the relationship between religiosity and psychological well-being in a national sample of the elderly. A gap in the literature exists on gender and racial variations in the association between religiosity and psychological well-being. Knowledge of gender and racial variations in relation to religiosity and health will provide the missing link on the role of religiosity in psychological well-being. The purpose of this study was to examine the gender and racial variations on the relationship between religious social relationships and psychological well-being, optimism, and self-rated health among the elderly.

Background

In addition to religion, a growing number of researchers have depicted the importance of social support in maintaining the physical and mental health of the elderly (Lubben, 1998; Lubben & Gironda, 2003; Morrow-Howell, 2000; Storlar, MacEntee, & Hill, 1993). Pro-religious individuals who are involved in religious activities tend to show better physical and psychological health than individuals who are not affiliated with any religious/faith-based organization (Ellison, Boardman, Williams, & Jackson, 2001; Fry, 2000; Levin & Chatters, 1998; Yoon, 2006; Yoon & Lee, 2007). Factors such as belief, faith, culture, and religious social support are also known to affects people's levels of resilience, which affects their quality of life (Krause, 2002). Krause and Wulff (2005) suggested that people's dependency on social network and support has wide ranging effect in different areas of their life. This is evidence in the role religious based support played in the recent past. Religious practices such as prayer and related coping practices are believed to be faith-based manifestations of social attachment (Ai, Park, Huang, Rodgers, & Tice, 2007).

In recent years, several researchers have focused on psychological well-being. The term *well-being* dates back to the early 1600s, but has become popular among researchers in recent years (Sirois, 2011). Sirois (2011) described well-being as the overall quality of life experienced by both individuals and communities with respect to their emotional, social, and financial status. While some researchers have viewed the concept of psychological well-being as a *momentary state,* some have viewed it as an ongoing process of growth and adaptation (Sirois, 2011). Psychological well-being is

associated with important outcomes across a variety of life domains, including work, social and community life, and health; mental health is a key aspect of well-being (Sirois, 2011). McDowell (2010) described early conceptualizations of well-being as being focused on the absence of distress; however, recent views have focused more on the positive characteristics and strategies involved in the development and experience of well-being.

Well-being is an important concept that has received increasing research attention in recent years. A related concept, psychological health and well-being, introduces the notion that mental health is a key aspect of well-being. The World Health Organization (2002), claimed that psychological well-being involves more than just the absence of mental disorder, disease, or infirmity. The World Health Organization first produced an embodied notion of health in 1948, which it described as “a complete state of physical, mental, and social well-being” (World Health Organization, 1948, p.23). Westerhof and Keyes (2010) described mental health as the absence of depression, anxiety and other psychopathological states. Mental health is described as “a state of well-being in which the individual realizes his or her own abilities, can cope with the normal stresses of life, can work productively and fruitfully, and is able to make a contribution to his or her community” (World Health Organization 2005, p.25). Given the conceptual overlap among the terms mental or psychological health and well-being, using the term psychological well-being seems an appropriate way to capture the essence of both these components, which are inextricably linked (Sirois, 2011).

Statement of the Problem

Kersting (2003), Powell, Shahabi, and Thoresen (2003), and Richards and Bergin (2005) have examined the association between religion and psychological well-being. However, more research needs to be done, specifically on different aspects of the association between religiousness and health, such as the relationships that could exist between the variables of religiousness and psychological well-being. For example, the impact of religious-based social support, religious involvement, and religious optimism on psychological well-being has been examined up to a point. However, researchers have not focused much on gender and race variations on the impact of these religious variables on the psychological well-being of the elderly.

The goal of this study was to provide information on the different ways religiosity affects psychological well-being among different racial and gender groups. It was also designed to provide insight into the different variables that influence the relationship between religious social support and psychological well-being among the elderly. The results of this study may enhance the understanding of how social structures, processes, and social environment can influence the psychological well-being of the elderly.

Significance of the Study

There is a consistent relationship between psychological wellness and well-being (Adams & Bezner, 2000; Pearce, Little, & Perez, 2003; Westgate, 1996). Moreira-Almeida, Neto, and Koenig (2006) found that spirituality has a positive association with psychological well-being. The authors found that people who reported high levels of religious involvement also reported positive psychological states and greater life-

satisfaction. Cohen and Willi (1985) pointed out that different dimensions of religiosity are associated with the improved well-being of elderly people. Although some researchers have reported a significant association between spirituality and the psychological well-being of elderly adults, it is not yet clear if religiosity impacts males and females, Blacks and Whites differently or the same.

Researchers have not explored the effects of gender and race on the association between religiosity/spirituality and the psychological well-being of the elderly. This study was designed to determine if the relationship between indicators of religiosity and psychological well-being among elders varies by gender or race. Sue and Sue (1990) stated that it is important that the both the practitioner and client have good understanding of each other religious and belief as this could influence people ability to seek for social welfare assistant and mental health services especially among minorities.

Eeary (1995) suggested that focusing on the realities associated with race may help to enhance the psychological therapy work of mental health practitioners and act to mediate its success, especially among people of the same race. One public health implication of this study is that understanding the patient and mental health provider's expectancies about religiosity, gender, and race may serve to intensify the effectiveness of therapeutic treatment, thereby improving the quality of life of the elderly.

Purpose of the Study

The purpose of this study was to examine the variations in the association between religious-based social relationships and the psychological well-being of the elderly using the data set from the Religion, Aging, and Health Surveys (RAHS) of 2001

and 2004. This study was designed to explore the role of gender and racial variations in religious-based social relationships and the psychological well-being of the elderly. Possible correlations between religious involvement and psychological well-being and the impact of religious optimism on self-rated health were also explored. Constantine (2002) and Robinson and Howard-Hamilton (2000) stated that race, ethnicity, gender, and social class are so important in attempt to understand make up of different individuals in terms of cultural identity. A better understanding of the impact of gender and race in correlation with religiosity and psychological well-being will benefit public health experts, especially those specializing in program design and interventions.

Hickson and Phelps (1997) and Warwick (2002) claimed that fewer studies have being published that addressed issues related to religious counseling and gender. In order to understand individual assessment of selfs in regards to spirituality and culture, it is important to understand variations by gender and race. Exploring these variations during later life may result in the development of a generally acceptable intervention strategy and treatment practice for mental health practitioners and other faith-based counseling professionals.

Research Questions

The research questions that I considered in this study are as follows:

1. Does the association between religious-based social relationships with others and the self-rated health of the elderly vary by gender and/or race?

2. Does the association between the religious involvement/commitment and the psychological well-being of the elderly (measured by depressive symptoms score) vary by gender and/or race?
3. Does the association between the religious optimism and the psychological well-being of the elderly (measured by life satisfaction score) vary by gender and/or race?

Definition of Terms

Elderly. The U.S. Census Bureau (2004) defined the elderly as people who are 65 or older.

Health. Health is a state of complete physical, mental, and social well-being and not necessarily the absence of disease (W.H.O 1948, p.100).

Hope/optimism. "Hope/optimism is a behavior that is expressed as a positive view of future events" (Corsini, 2002, p. 135).

Life satisfaction and depressive symptoms. Life satisfaction and depressive symptoms are measures of psychological well-being. Life satisfaction is "an individual cognitive evaluation of one's life, as determined by life goals and their actual outcomes" (Mui & Shibusawa, 2008, p. 145). For the purpose of this study, life satisfaction and well-being are used synonymously.

Psychological well-being. Psychological well-being is multidimensional. Ventis (1995) claimed that:

> *the following criteria depict positive psychological well-being: a) absence of mental illness; b) appropriate social behavior; c) freedom from worry and guilt;*

d) personal competence and control; e) self-acceptance and self-actualization; f) unification and organization of personality; g) open-mindedness and flexibility. (p. 195)

Race/ethnicity. Ethnicity is defined as "individuals' socially defined membership in putatively cultural, but sometimes also physiognomically, linguistically, geographically, or ancestrally based, ethnic groups" (Zaff, Blount, Phillips, & Cohen, 2002). Ethnicity refers to an individual sense of belonging to a particular group with a common national, religious, or tribal background (Zaff et al., 2002). Ethnicity emphasizes the "individuals' own identification with their group" (Bradly, 2003). For the purpose of this study, ethnicity and race, which identify people according to skin color and which refer to a pre-determined, externally imposed taxonomy, are used inter-changeably.

Religiosity/spirituality. Religiosity and spirituality are used interchangeably in the literature and are also used interchangeably in this study. The term religiosity is defined as a combined set of beliefs, rituals, and institutions through which persons give expression about that which is holy or held in highest esteem in their lives (Corbett, 1990). "Spirituality is also the innate capacity and tendency to seek to transcend one's current locus of centricity" (Gorsuch, 1984).

Religious involvement/commitment. Religious involvement/commitment is belonging to a religious group and practicing religious activities (P.S. Muller, 2001).

Assumptions

The following assumptions applied to this study:

1. The respondents who participated in the RAHS (Krause, 2004) provided accurate information on questions asked.
2. Any sources of errors and omissions of data were correctly addressed earlier in the study.
3. The respondents understood the content of the letters of confidentiality provided to them and willingly signed them.
4. The participants completed the questionnaire correctly.
5. The respondents were not forced to participate; rather, they willingly did so.

Limitations of the Study

1. I used secondary data for this present study on the relationship between religion-based social relationships and the psychological well-being of elderly people. The data were part of a nationwide survey that addressed a number of issues including aging, psychological well-being, religiosity/spirituality, and self-rated health.
2. Instrumentation used for this study was a selection of questions from the RAHS (Krause, 2004) that collected self-reported data. As a result, one limitation was the sole use of data from a self-reported questionnaire with no means of verifying the validity of the responses.
3. Social desirability bias is often the case in this kind of study, particularly for issues relating to depressive symptoms, self-rated health, and life satisfaction.
4. Finally, variables derived from the data set are not static; as a result, these data provided a measure of these variables at the time the survey was administered.

Study Delimitation

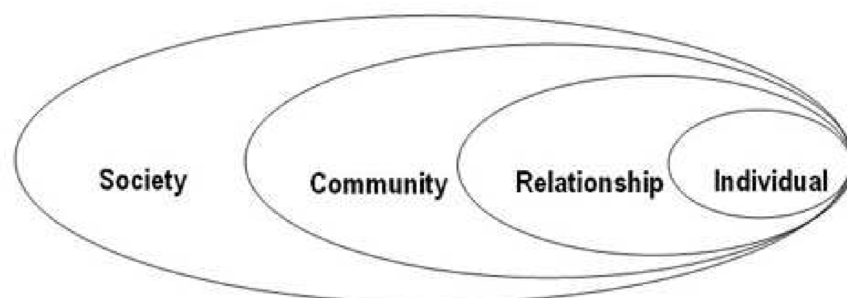
In this study, I examined the association between religious-based social relationships and the psychological well-being of the elderly. Any association between religious based social relationships and psychological well-being on younger people was not studied because the data set (see Krause, 2004) only provided data on elderly Americans aged 65 and older. For the same reason, variations among gender and race of the elderly outside of the continental United States are not discussed here. This could be a potential problem when it comes to generalization of the study findings. The findings of this study may not be directly applicable to population outside of the data set coverage.

Theoretical Framework

Researchers in religiosity research use number of psychosocial theories as a framework to explain the interactions between religiosity variables and psychological well-being, with an emphasis on individual behavior change. For this study, I used the SEM to provide a framework for understanding the social and environmental context of religiosity/spirituality and the psychological well-being of the elderly (Oetzel, Ting-Toomey, & Rinderle, 2006). SEMs describe the interactive characteristics of individuals and their environments that result in certain health outcomes (Shelley & Jo, 2012). The focus of this study was on the personal factors and the interactions between environmental factors and behaviors, as well as on the gender and racial variations.

The SEM, used as the theoretical framework for this study, was developed from the previous works of a number of researchers: In the ecological systems theory, Bronfenbrenner (1979) focused the effect of the environment on the individual. In the

ecological model of health behaviors, McLeroy, Bibeau, Steckler, and Glanz (1988) described essential elements of SEM on physical activities using five levels of impact of physical activity on health behavior. Stokols (1992, 1996) identified the main assumption of the model (SEM). These pieces of work have been modified and evolved into the SEM (Glanz, Rimer, & Viswanath, 2008). Bronfenbrenner established the concept of interaction between a person and the environment, which results in the development of sublevels, including individual, interpersonal, community, and societal levels. These four sublevels are regarded as the "four core principles the social ecological model is based on" (McElroy K. R, Bibeau D., Steckler A., and Glanz K, 1988 p. 355 - 377). Figure 1 "illustrates a social ecological approach to show levels of influence on the relationship between the individuals and the society" (McElroy K. R, Bibeau D., Steckler A., and Glanz K, 1988 p. 355 - 377).



Nested Social Ecological Model based on Dahlberg and Krug (2002)

Dahlberg LL, Krug EG. Violence-a global public health problem. In: Krug E, Dahlberg LL, Mercy JA, Zwi AB, Lozano R, eds. World Report on Violence and Health. Geneva, Switzerland: World Health Organization; 2002:1–56.

Factors in the Social Ecological Method

Individual Factors

The SEM can be used to identify biological and personal history factors that determine individual actions. As a result, "efforts to change behavior, including physical activity behavior, should be based on the understanding of the interrelationship between the four levels of the social ecological model" (Bronfenbrenner, 1979, p. 103-124). The figure about described the levels of interrelationship among the four levels of SEM model and how they interact with each other.

Relationship Factors

Relationship factors of SEM can be used to examine the level of relationship that may affect the psychological well-being of the elderly. According to the relationship

model, the social environment may contain attributes that have direct implications for the design of initiatives to promote physical activity and participation. Attributes such as size, temperature, facilities, and safety were identified as affecting the design of initiatives to promote physical activity and participation. An individual social network could influence the behavior of seniors and could contribute to their range of life experiences (Bronfenbrenner, 1979).

Community Factors

Community factors may account for "the settings such as schools, workplaces, and neighborhoods, with tendency of social relationships to occur" (G. A. Kaplan, Everson, & Lynch, 2000, p. 1394-9). G. A. Kaplan, Everson, and Lynch (2000) stated that "interpersonal relationship with the community may result in some sets of community norms, standards, and social networks that could influence health" (p. 1399). Interactions between the environment and humans can occur at several levels such as individual, small group, organizational, community or population levels. Accordingly, SEM does not focus on just the individual; it also focuses on the level of interaction between humans and the environment (G. A. Kaplan et al., 2000). As a result, any change that affects the environment could possibly result in a change of behavior (Jamner & Stokols, 2000; Stokols, 1992).

Societal Factors

The SEM can be used to examine the broad societal factor interrelationships between people and their environment. Societal factors described social and cultural norms, health, economic, educational and social policies that geared to help address

inequalities among different group of people in the society. Eaton, Muntaner, Bovasso, and Smith (2001) and Lorant et al. (2003) claimed that frustrations and chronic stress associated with economic and social inequalities and poverty affects the psychological well-being of the elderly.

Summary

This chapter included an overview of the study, research questions specific to the study, purpose, and theoretical framework, definition of terms, scope, limitations and study delimitations, and the significance of the study. The goal of this study was to explore whether the relationship between religious social relationships and psychological well-being varies by gender or race, whether associations of religious involvement with psychological well-being vary by race or gender, and whether associations of optimism and self-rated health vary by gender and race.

In Chapter 2, I provide a detailed review of the literature on variations by gender and race in the relationship between religiosity and psychological well-being. Findings of various studies on spirituality, gender, ethnicity, and health are also discussed in Chapter 2. In Chapter 3, I give more detail on the study design and methodologies, sampling procedures, instrumentation and materials, data collection, and statistical analysis of the variables of interest. Chapter 4 includes the results of the study and, in Chapter 5; I complete the study with conclusions and recommendations.

Chapter 2: Literature Review

National studies and polls that have been published in the United States demostrate that religiosity and spiritual practices are identified as way of life for most Americans (Gallup, 2011; Pew Forum on Religion and Public Life, 2008). The existing connection between religion and health has been a focus of research in the last decade. Although some professionals in the field of medicine and science have viewed the relationship between religion and psychological well-being with skepticism, through numerous studies especially in the field of social epidemiology, significant findings have emerged regarding the religion-health connection (Ellison & Levin, 1998)

This chapter begins with my exploration of the literature on religion and health and provides an overview of research on gender and racial effects on the association between religiosity and the psychological well-being of the elderly. Using ProQuest, PsychInfo, SocIndex, and Medline, I conducted a comprehensive review of the literature an initial step in this review. My search included primary sources published from December 2001 to March 2011 using the databases listed above. Key terms used to search these databases included; *religion and health, religion, ethnicity and health, religious support and health, religious involvement and gender, and religious involvement and elderly.* I also conducted searches using various combinations of these terms.

Table 1 shows the significant number of studies of the association between religion and well-being and of possible variations by gender and ethnicity. The table also shows the high volume of literature and research on religion and health, but no study was found that examined gender and racial differences on the association between religiosity

and psychological well-being in a nationwide sample of the elderly. Most studies examined variations in gender and race in terms of religious commitment.

Table 1

Number of Studies by Searched Keywords and Source Database (2001 to 2011)

	Religion & well-being	Religion, ethnicity, & health	Religious support & health	Religious involvement & gender	Religious involvement & elderly
ProQuest	1905	235	2040	84	24
PsychInfo	1990	4	17	17	3
SocIndex	1953	6	13	0	0
Medline	1962	4	11	8	2

Previous Studies on Religiosity and Health

Levin, Taylor, and Chatters (1994) used data derived from four nationwide surveys: the quality of life study: the myth and reality of aging study (*n* = 2,723), the survey of Americans (*n* = 1,192); the survey of changing lives (*n* = 1,644), and the general social survey (*n* = 541). Levin et al. (1994) used general social survey to examine (a) whether older women show significantly higher levels of religious participation than older men, (b) whether significant differences exist among older Blacks and Whites in terms of religious participation, and (c) whether race and gender demonstrate effects on religious participation in older adults. To test the main effect for race and gender and their interaction, a two-way analysis of variance (ANOVA) was used. Levin et al. concluded that both older Black and White elderly display fairly highly levels of religiosity, attend religious services a few times per month, indicate that religion is important in their lives, read religious materials, listen to religious programs, and pray on a frequent basis (Levin,

Taylor, & Chatters, 1994, p.137-145). However, these researchers did not address variations in the association between religiosity and psychological well-being among the elderly due to gender and race, but rather focused mainly on differences on religious involvement.

Tabak and Mickelson (2009) examined the association between religious service attendance and distress using data from the national comorbidity survey (NCS; Kessler et al., 1994). A multiple regression analysis showed that service attendance "was a significant predictor of nonspecific distress; more frequent religious services attendance was related to less distress (b = -0.06, SE = 0.02, p < .01)" (Tabak & Mickelson, 2009, p.49 -64). According to the study, Hispanics and African Americans showed a significant linear relationship between attendance and psychological distress (Tabak & Mickelson, 2009). Taylor, Chatters, and Jackson (2007) explored the religious involvement of older African Americans, Caribbean Blacks, and non-Hispanic whites using data from national survey of American life. Mean score was used to examine racial and ethnic differences in religious participation; the study found that older African Americans and Caribbean Blacks reported significantly higher levels of religious participation and spirituality than older Whites.

Maselko and Kubzansky (2006) examined the association between spirituality and well-being and identified three makers of health. They examined whether engagement with a formal religious institution benefited men more than women. Data on respondents' levels of engagement in public and private religious activities were collected. Multiple regression analysis was used to examine the relationship between gender and religiosity.

Also, interaction terms were created by multiplying the variables for public religious activity with gender, private religious activity with gender, and spiritual experience with gender (Maselko & Kubzansky, 2006). Logistic regression models were used to analyze for dichotomized self-rated health. Maselko & Kubzansky (2006) concluded that involvement in weekly religious activity is associated with better psychological well-being, with a significant different between men and women; men reported better self-rated health ($\beta = 0.37$) than women ($\beta = 0.14$).

Previous Studies that Used RAHS 2001 or 2004

Krause (2006) used the data from the 2001 RAHS (Krause, 2004) to examine the relationship between church-based social support and mortality. Using a hierarchal logistic regression analysis, Krause (2006) examined the association between church attendance, financial strain, received support, and mortality. Krause (2006) reported that frequent church attendance was significantly associated with a lower risk of mortality ($b = -.140$; odds ratio [*OR]* = 0.870; $p < .05$). The study also found that social support to fellow parishioners reduces this effect ($b = -.093$; *OR* = 0.911; $p < .001$). However, the researcher did not provide any information regarding variation on race and gender. Does frequent church attendance affect both men and women, black and white in same or varying degree?

Krause (2003b) examined “the relationship between religious meaning and subjective well-being in later life using the data from RAHS (2001)” (Krause, 2003, *p*.160 - 170). Using a multiple regression analysis, the study tested for a differential religious involvement; relationship between religious meaning, life satisfaction, self-

esteem, and optimism were examined. Krause (2003) concluded that sense of meaning is significantly associated with life satisfaction. In terms of racial differences, the study found that older Black adults are more likely to find meaning in religion than older Whites.

Krause and Chatters (2005) examined race differences in 17 different measures of prayer using data from the 2001 RAHS (Krause, 2004). Using a series of univariate analyses of covariance (ANCOVAs), and multivariate analyses of covariance (MANCOVAs), the study found that older Blacks are more involved in religious practices than older Whites in all 17 of the prayer measures (Pillai's Trace = .101; $F = 51.90$; $df = 3$; error $df = 1382$; $p < .001$).

Religion and the American Population

The Pew Global Attitudes Project (2002) stated that 65% of Americans claim that religion plays an important role in their lives. Also, the results from a 2009 Gallup poll showed that 42% of Americans attended religious services weekly or almost weekly and that about 83% of Americans living in the United States believed that there is a God. Newport and Jackson (2006) claimed that in terms of religious beliefs and practices, there exist variations as one moves from one region to another region in the United States. For example, in the southern United States, weekly or almost weekly religious attendance is much higher; about 58% of those who live in South Carolina, Alabama, and Louisiana reported that they attended religious services weekly or almost weekly (Newport & Jackson, 2006). Krause (2003) explained that older African-Americans were more likely

to commit to religion and attend church services compared to other ethnic group such as Caucasian or Hispanic.

Religion and Health

The earliest study conducted where a researcher examined the relationship between religion and psychological well-being was traced back to Durkheim in 1897. Durkheim explored religious activities as a major variable in analysis of suicide (Seeman, Dubin, & Seeman, 2003). Another researcher who examined the association between religion and psychological well-being was William James's *The Varieties of Religious Experience*. Part of his work explored physio-biological theory, which could help explain the association between religious participation and health. Jarvis and Northcott (1987), Levin and Schiller (1989), and Troyer (1988) all concluded that a significant association exist between religion and psychological well-being. Also, more recent studies by Ellison and Levin (1998), Y. J. Wong, Rew, and Slaikeu (2006), and Seeman, Dubin, and Seeman (2003) found a significant association between religion and psychological health outcome, especially among the elderly.

Koenig and Larson (2001) examined the relationship between religion and measures of psychological well-being, such as depressive symptoms, and found religion was positively associated with improved psychological well-being. They also found that, among religious individuals, cases of depressive symptoms were resolved sooner (where they developed), however severe the symptoms. Baetz, Larson, Marcoux, Bowen, and Griffin (2002) reported a significant association between religious commitment and psychological well-being. According to their study, 59% of participants believed in a God

who rewards and punishes. Twenty-seven percent had a high frequency of attendance at religious services, and 35% prayed regularly, once or more a day ($p < 0.05$). Also, the study found a significant association between private spirituality and depressive symptoms. Frequent religious attendance was significantly associated with fewer depressive symptoms, higher satisfaction with life, and lower rates of current alcohol abuse ($p < 0.05$). However, no significant association was found between frequency of prayer and psychological well-being.

Relationship between Religious Support and Depression

The theory of social support was first proposed by Cassel, Kaplan, and Gorr in 1977. In their study, these authors identified the importance of social ties in coping with crisis, life difficulties, and tragedies. While Berkman (1984) described social support as form of assistant obtained from your social network. According to the Authors, this support could be in form of financial, emotional, or instrumental), several scholars have identified esteem, informational, instrumental, and social integration as four main types of support (Barrera, 2000; Cohen & Wills, 1985; Cutrona and Russell, 1990). Social support is described as a multi-facet construct with many indicators. Indicators of social support could be in form of size, composition of social networks, frequency of contact, geographical proximity, reciprocity, multiplicity, supportive function, and perceived satisfaction with social relationships (Antonucci, Fuhrer, & Dartigues, 1997; Krause, 1999; Lin, Ye, & Ensel, 1999; Lubben & Gironda, 2003; Okun & Lockwood, 2003).

An earlier report by Ferraro and Koch (1994) revealed that religious activities and religious organizations represent ways in which people often find support. Idler (1995)

reported that commitment to religion provides numerous benefits some in form of emotional wellbeing, cognitive, and material support thereby fostering the individual's perception of care and esteem. Numerous research studies have explored the relationship between social support and depression and concluded that social support appears to influence the quality of life of the elderly (Antonucci et al. 1997; Consedine, Magai, & King, 2004; Cummings, 2003; George, 2005; Kahn, Hessling, & Russell, 2003; Minnes & Woodford, 2005; Philip, Siu, Yeh, & Cheng, 2008; S. T. Wong, Yoo, & Stewart, 2007). The literature also revealed that people with strong social tie and supportive network are more likely to exhibit better physical and mental health than elderly individuals who do not have strong tie and good social network. (Bajekal, Blane, Grewal, Karlson, & Nazroo, 2004; Smith, Slim, Scharf, & Phillipson, 2004).

Ortega, Metroka, and Johnson (1993) found social support, especially perceived support, to be a very strong predictor of lower levels of depression. Examining the roles of selected types of functional social support in reducing the impact of bereavement on depressive symptoms among elderly people, Krause and Markides (1990) found four types of social support that enhanced the negative effect of loss of loved one on depressive symptoms: (a). Informational; used in most cases to resolve situations that might add to stress of bereavement (b).Tangible; could be in form of financial contribution by the members of social network (c). Emotional; referring to care and affections one received by members of his or her social network and (d) integration which refers to ability of the individual to find comfort among other members of his or her social network thereby nurturing sense of belonging. According to Uchino (2004),

social network produces strong impact on psychological well-being of the elderly because it consists mostly of family members such as spouses, children, and siblings.

Social support is beneficial to the older population in many ways; "it provides a social outlet and resources to individuals when they are in need, thereby making a positive impact on a person's health" (Krause, 2006, p. 143). Social networks provide the needed structures through which social support is provided (Ajrouch, Antonucci, & Janevic, 2001). Social networks also could enhance people's immunity against diseases such as mental and physical health (Uchino, 2004). In 2005, the Center for Disease Control and Prevention (CDC) found that among the elderly, increased levels of social support have been linked to fewer mentally unhealthy days and more days of vitality. It has been established that social support deficit is a significant risk factor for depressive symptoms (M. G. Cole & Dendukuri, 2003; Oxman & Hull, 2001). The study found that greater social support is associated with a decrease in depressive symptoms (Oxman & Hull, 2001). However, there is still a gap in the literature examining variations due to gender and race on the association between religiosity and psychological well-being

Age Specificity and Religious-Based Social Relationships

Krause and Wulff (2005) and Lang (2001) compared the impact of religious based ties among the elderly and younger people and concluded that the elderly are more likely to be emotionally influenced by religious based ties than the younger people. However, these ties disappear as one grows older. In this study, the authors also suggested ways in which social ties could be lost in life, including widowhood, retirement, and when children reach adulthood and move out.

Krause and Wulff (2005) explained two important roles of religion in the social life of the elderly: (a) Ehmann (1999) reported that about 23% of young people between the age of 20 and 29 attend religious service weekly, compared to 45% of people between the age of 65 and 75 and (b) the U.S. Department of Labor (2002) showed that elderly people spend significantly longer performing volunteer activities in a religious organization than in any other setting. Similarly, a nationwide survey in 2003 showed that about 45% of all volunteer work performed by people 65 years and older took place in religious-based organizations, hospitals, or other health-related settings (Krause & Wulff, 2005). Musick and Wilson (2003) also explained that even after retirement, elderly people tend to volunteer to serve in non-for- profit religious organizations with the belief that service in religious setting affect their psychological wellbeing more than the younger people.

Concept and Assessment of Spiritual Support

Maton (1989) described spiritual support as individual's belief in his or her relationship with God as a supportive component. This implies that spiritual support is self-assessed and self-reported. Individual's spiritual support cold be described as being in communication with a higher power which I turn enhance the impact of stressful and individual's ability to resist stress (Levin, 1994). Two important aspects of spiritual support are the intimate connection between the elderly person and a higher power and a perceived or self-rated positive influence of the higher power. Maton (1989) argued that a single-item measure of spiritual support could be unrealistic, but instead developed a scale of measurement that captures the three major effects of spiritual support: intimate

relationship, emotional influence, and cognitive influence. Some studies have explored and clarified Maton's three-item measure. For example, Krause (2002) utilized Maton's three-item measure to explore the effects of interpersonal relationships between individuals within the same congregation (Krause, 2002) and added that the concept of spiritualization could be utilized at different levels. This aspect, however, is beyond the scope of this study.

Religious Involvement and Psychological Well-being

As in many other studies, as far as the impact of religion on psychological well-being is concerned, there still exist disagreements among researchers on specific variable of religiosity that actually impact psychological well-being (Ellison, 1991). One thing to remember when discussing issues related to social support is that providing a platform where people may enjoy a larger and more reliable informal social network and may possibly receive support in times of adversity is very important. Krause, Ellison, Shaw, Marcum, and Boardman (2001) claimed that the beliefs and values that are shaped and shared in religious congregations provide resources for religious coping responses that may help in dealing with life problems, especially in later life.

Thompson et al. (2008) reported that religious involvement and commitment make a statistically significant positive contribution to psychological well-being by reducing depressive symptoms. Dull and Skokan (1995) found that religious patient sometimes turn to prayer in other to foster sense hope, control and change in their health situation. This concept holds even in traumatic situations such as illness. Contrada et al. (2004) reported that religious-inclined patients are more likely to spend shorter time in

the hospital with fewer complications than the non-religious inclined patients, though he did not relate prayer to recovery. In a review of cross-sectional studies relating to religious involvement and depression, Koenig et al. (2001) found that 85% reported a favorable influence of religiosity. Also, religious participation was reported to be responsible for a significantly lower level of depression, mostly among the elderly (Johnson, 1995; Koenig, 1998) and the bereaved (Gray, 1987).

Huijts and Kraaykamp (2011) examined the role of religious context and how it influences the association between religious involvement and psychological well-being. Two components of religious commitment were distinguished at both the national and individual levels: religious attendance and denominational affiliation were examined using survey data from 28 European countries (n = 127,257) (European Social Survey 2002-2008). Huijts and Kraaykamp (2011) concluded that religious attendance measured at the individual level has a statistically significant association with self-rated health, but claimed that this association is independent of the national level of religious attendance. Like most current studies exploring the association of religiousness and psychological well-being, this study did not examine variations due to race and gender in the association between variables of religiosity and psychological well-being. To address this gap in the literature, the current study examines such variations among the elderly.

Yeager et al. (2006) examined the relationship between religious involvement and self-rated health, psychological well-being, and morbidity using data from a Taiwanese nationwide survey (n = 2,930). Yeager et al. used linear regression to analyze continuous variables and ordered prohibit regression was used to analyze associations with self-

reported health. Binary outcomes such as mortality, systolic hypertension, and diastolic hypertension were analyzed using logistic regression. Using a Poisson regression analysis, Yeager et al. examined the association of the variables involved in the sample and reported no significant association between better self-rated health, physical function, and psychological well-being. In addition, the report of the multivariate model, which examined the association of self-rated health and psychological well-being, also showed no significant outcome when used to examine the relationship between health and religious affiliation.

Koenig et al. (1992), Krause et al. (2001), and Wuthnow (1994) claimed that religious-based social relationships play a crucial role in the provision of assistance during times of distress. Krause and Wulff (2005) suggested that although social network constitute mostly non-problem solving activities, contact with close family member such as spouse is often considered with feeling of enjoyment.

Krause (2002) described spiritual support as activities engaged by members of religious group for specific aim of improving level of commitment, belief and norm among members. According to him, spiritual support is considered an important form of social tie among religious groups. In addition, Ellison and Levin (1998) claimed that religious social relationship could enhance certain benefits that regular secular social relationship could not produce. However, these benefits depend of the tone and quality of social ties among members of religious group. According to the authors, two closely related factors are responsible for the benefit over regular social ties: all major religions teach benevolence as a basic religious trait, which means people are highly encouraged to

develop relationships with others, especially those of their religious group: of important in this case is that there are similarities in social orientation between support giver and support provider (Ellison & Levin, 1998). Accordingly, people who belong to the same religious group and share a common religious interest tend to view social support and other assistance more favorably (Krause & Wulff, 2005).

Religious Optimism and Psychological Well-being

One of the earlier studies that explored the association between optimism and well-being was conducted by Bryson et al. (1998). In the study, the author examined the respondents' psychological characteristics, health status, and measures of confounders.

Thomas, Winnie, Michael, Frisch, & Snyder (2007) showed that hope and optimism have received enormous amount of consideration by researchers in predicting life satisfaction. The concept of optimism has been regarded as "a stable cognitive set that reflects general, not specific, outcome expectancies, a general trait, or outlook that includes a person's overall attitude and approach toward self and the world" (Myers, 1992; Seligman, 1991).

Bourland et al. (2000) reported a significant association between religious optimism and life satisfaction; those who are optimistic are associated with better life satisfaction, especially among older adults with anxiety disorder. Achat, Kawachi, Spiro, DeMolles, and Sparrow (2000) examined the association between optimism and mental health among middle-aged men and concluded that those with high level of optimism are more likely to score their perceive health high than those with lower level of optimism. Fry (2001) attributed the psychological well-being measured in 188 elderly widows and

widowers to optimism. Moreover, Krause (2002) stated in her study that older adults who claimed to be religious were more optimistic than those who were not religious. They also claimed that religious congregations where people feel a sense of support and acceptance tend to offer more spiritual and emotional support.

Despite all the studies that reported a positive impact of optimism on psychological well-being, a gap in the literature exists on differences due to gender and race variations in regards to optimism's positive impact on psychological well-being. This study examines variations by gender in the relationship between optimism and the self-rated health of elderly people.

Religion and Mental Health

The relationship between spirituality and mental health has generated a great deal of research interest. While some studies focused on beliefs and adherence to religious doctrine when exploring the relationship between religiosity and mental health, others focused on correlates of religiosity and frequently associated behavioral dimensions, such as frequency and quality of individual prayer and institutional attendance. Depending on the kind of instrumentation used in measuring mental health, different research works have yielded different findings.

Dittes (1969) used a meta-analytic approach to measure the relationship between religious practice and personality traits. Dittes reported a consistent correlation between religious practice and personality traits when a meta-analytic approach was used; however, the study reported inconsistency across other well-being outcomes. The author also found a significant relationship between being religious in one's ideas and

engagement with subsequent behaviors and the neurotic traits of defensiveness and emotional constriction (Dittes, 1969). Lewis (2001) examined the relationship between religious and non-religious individuals on the various mental health indices and concluded that obsessive symptoms are significantly related to personality traits and lower psychoticism scores.

Frankel and Hewitt (1994) examined religious-based attitudes and beliefs among a group of Canadian university students not involved in campus religious groups. The study reported a statistically significant association between religious belief and variables of psychological well-being such as self-esteem, life satisfaction, and depressive symptoms. O'Connor, Cobb, and O'Connor (2003) using a similar group of samples, reported a weak association between religious-based attitudes and mental health. Chamberlain and Hall (2000) compiled a comprehensive review of more than 300 studies titled *Realized Religion: Research between Religion and Health.* The report showed a significant positive association between religion and surgical patient survival rates and a negative association with depression, anxiety, and suicide. Chatters, Taylor, and Lincoln, (2001) and Ellison, Boardman, Williams, and Jackson (2001), in similar reports, concluded that religious belief or practice benefits psychological well-being.

Religiosity and Spirituality

"The words religion and spirituality [have] been used interchangeably by many researchers" (Kendler et al., 2003; Yoon & Lee, 2004). The term religion often incorporates many meanings (Nelson-Becker, 2005). Religion has been defined as a community's formalized, institutional pattern of belief, practices, specific behaviors,

social ways, doctrines, denominational labels, and spiritual values (Canda & Furman, 1999; Fetzer Institute/National Institute on Aging Working Group, 1999; Nelson-Becker, 2005).

Religion is also a belief that "encourages moral standing and participation in activities that attest to a belief in God or a higher power" (Emmons & Paloutzian, 2003; Koenig et al., 2001). Breitbart et al. (2000) examined the association between spirituality and psychological well-being of 162 terminally ill Cancer and AIDS patients from a palliative-care facility, whose life expectancy was less than six months. The study instrumentation used consisted of the functional assessment of chronic illness therapy (FACIT), the Hamilton depression rating scale, and the memorial symptom assessment. Pearson correlation coefficient analysis and coefficient alpha were used to assess the reliability of the religiosity measure due to varying lengths of stay. The participants' recorded average age was 59.8 (SD 14.5); 60% of the respondents were female and 40% were male. While only 23% of the participants with AIDS were White, 56% of the participants with AIDS were Black. This study showed a statistically significant association between the HDRS scores and the FACIT score ($r = -.40$; $p < 0.001$). However, the study reported no significant association between religiosity and psychological well-being (depression).

W. R. Miller and Thoresen (2003) described spirituality and religiosity as distinguishable, yet related, concepts. Most of the literature reviewed pertaining to definitions of spirituality and religiosity arrived at a common conclusion that religion typically consists of one's involvement in some kind of faith-based organization with a

set of rituals, which encourage a relationship with the divine being. Wolf and Stevens (2001) suggested that spirituality and religion are interrelated, but not identical. Laurencelle, Abell, and Schwartz (2002) defined spirituality as “intrinsic belief and experience of having a relationship with the Supreme Being, and the use of this relationship as a source of strength in one’s life” (p. 109 - 123). Laurencelle et al. (2002) and Koenig et al. (2001) reported that religion encourages moral standing and participation in activities that speak to belief in a higher power.

Over the years, research in the field of mental health has begun to explore the nature of the association between spirituality and psychological well-being (Larson & Larson, 1994). Laurencelle et al. (2002) examined the relationship between intrinsic faith and psychological well-being through four measures of well-being of the elderly: two features of ego strength plus character pathology and pathological behavior. The sample consists of 75% singles, 57% White, and 75% female. The study sample statistics also showed a mean age of 29.4 years (*SD* = 15.1), 84% Christians, 5% Jewish, 1% Muslim, 1% Buddhist, and 9% others who identified as some other religion. An ANOVA revealed a statistically significant relationship between established high intrinsic faith and normative group participation.

Yoon and Lee (2004) explained that the relationship between religiosity and subjective well-being varies by factors such as gender, race, and region. People often report that their religious beliefs and practices contribute and serve as a primary foundation for personal strength (George, Larson, Koenig, & McCullough, 2000). However, it is not clear if the claimed positive association between religiosity and the

psychological well-being of the elderly varies by gender and race. The study therefore examines such variations.

Gender Factors

Studies have explored the relationships between gender and spirituality. Ferraro and Koch (1994) examined the relationship between gender and religiosity (differences in religious orientation) using a national sample of Black and White adults and concluded that a significant difference exist between females and males in terms of religious orientation. The authors suggested that differences in degree of faith practices among religious male and female could be attributed to differences in their degree of socialization. Stark (2002) argued that the different ways males and females are raised leads to different religious practices. The author claimed that women are likely to be more religious than men due to their upbringing, nurturing and submissive trait (Mol, 1985; Stark, 2002, Suziedelis & Potvin, 1981).

Walter and Davis (1998) reported that women are more religious than men. According to their study, a sample of European religious group showed that women are more religious than men in all aspects of religiosity. The authors also stated that there is no current study that examines why females are more involved in religiosity than men. Walter and Davis suggested that the field of public health will benefit from further research exploring the differences in spiritual experience among men and women and enhance understanding of faith belief among gender.

Helm, Berecz, and Nelson (2001) examined gender differences and religious fundamentalism in regards to shame and guilt experience in student populations. Their

study sample was drawn from the students from Andrews University, a Seventh-day Adventist Church school. The sample consisted of 37 males and 66 females. Four other participants had missing data. The study sample distribution consisted of 79% young people between the age of 18 and 22, 99% of whom were single (1.9% of them were single as a result of divorce); 57.9% of the participants were Caucasian, 13.1% Black, 11.2% Asian, 7.5% Hispanic, and 10.3% were classified as other; 95.3% of the participants were Seventh-day Adventist, 0.9% were Protestant, 0.9% were Jewish and 2.8% other. The sample group reported fairly frequent religious observance; 88% reported regular religious observance (approximately once a week) and 8% attended churches occasionally (approximately once a month). The study reported no significant difference in religious observance based on gender. Also, no significant differences were observed when comparing gender and religious fundamentalism (male M = 9:4, SD = 1:75 and female M = 9:4; SD = 1:75). While mean and standard deviation are identical for males and females in this sample, further correlations indicate that the scales that correlate with religious fundamentalism differ depending on gender (Helm, Berecz, & Nelson, 2001); females reported more dependency, guilt, and shame than their male counterparts.

A. S. Miller and Stark (2002) explored differences among gender qualities and spiritual belief and traits in terms of risk. The authors analyzed a secondary database from a survey conducted in 54 nations and reported that traditional female socialization did not appear to be related to higher rates of religiosity. Rather, an inverse relationship between traditional socialization and spiritual practices was reported. The authors

concluded that female are more likely than men to be involved in religion to an extent that not practicing religion is considered risk.

Thompson and Remmes (2002) examined how men's gender orientation and ideology affect their involvement in spiritual belief, using a sample of elderly males from three Massachusetts counties (Essex, Middlesex, and Worcester). The authors concluded that gender orientation was a more predictable indicator of faith practices than gender ideology. While married males made up 78% of the participants, widows made up about 15%, and the separated or divorced group made up 3% of all participants. Those who had never married were 3% of the group. In addition, 13% of the retired men who participated in the study were active volunteers. The study showed significant gender differences on the variable ideological support. According to the study, men are more likey than women to support religious ideology, as a result, men are found to be more vigilant than women in seeking out others: respect ($r = 0.21$); uphold standards of toughness (0.18). According to Thompson and Remmes, "two measures of gender orientation (BSRI masculine and BSRI feminine) were used to explore [the] correlation between gender ideology and orientation; the study showed that no measure of gender ideology is significantly correlated with gender orientation" (p.521-532). According to the authors, men withdrew from religious and spiritual activities that seems much feministic than masculinity. From most of the studies reviewed, one could infer that women are more involved in religion and spirituality than men and that their faith beliefs tend to influence their behavior.

The need for further study that will enhance the understanding of gender impact on religiosity has been emphasized in some recent studies. Passalacqua and Cervantes (2008) claimed that within culturally diverse population, health counselors and clinicians would benefit from better understanding of how gender impacts one's religious involvement and enhance their ability to made educated assumptions of their patients and interventions. According to the theory of multiple identities and counseling, significant differences exist between men and women in how these two groups interpret religious experience, supporting the notion that the outcome of therapeutic counseling might be influenced by racial and gender factors.

In regards to counseling and health education, Passalacqua and Cervantes (2008) suggested that the ability of an individual to adapt to life situations, openness to spiritual and religious socialization and connectedness is a summation of one's gender and cultural experiences. Earlier studies conducted by Arredondo, Anastasia and Cella (1993), Puhakka (2001), Nelson (1994), Gilligan, Rogers, and Tolman (1991), and Steven-Smith (1995) added that men and women tends to assimilate information in a different manner, deal with life experiences differently as a result of gendered experience. However, Strawbridge, Shema, Cohen, & Kaplan (2001) found that this trend is only among women and found no statistically significant results among the men. McCullough and Laurenceau (2005) found that religious women have higher levels of depression than men, while gender was found not significantly related to lower mortality rate. Maselko and Kubzansky (2006) claimed that despite the important of gender experiences in understanding one's religious and spiritual connectedness, very few study has focused on

the role of gender in the relationship among religiosity and psychological wellbeing. However, it is not yet clear whether the association between religious involvement and the psychological well-being of the elderly varies by gender and race.

Ethnicity

Eid (2003) suggested that, although there are few researchers devoted to exploring the effects of religiosity in the lives of different ethnic groups, an important interplay between ethnicity, religiosity, physical health, and behavioral health has been documented. Religious beliefs have been reported as an important component of wellness. According to P. M. Cole (2002), important of spirituality in many ethnic and racial group could not be over emphasized. Cain and Kingston (2003) suggested that a strong sense of one's ethnicity could serve as a protective element against the stress that typically accompanies prejudice. The authors believed that understanding of this aspect of human behavior (the impact of faith beliefs on different ethnicity groups) may help to improve health and human service delivery and effectiveness.

Montague, Magai, Consedine, and Gillespie (2003) studied the impact of religiosity among African American and European religious socialization. The study used a sample of 1,118 elderly residents of Brooklyn, New York. Sixty percent (60%) of the sample group was black and 40% were Europeans. The sample distribution shows that ages ranged between 65 and 86; mean household income was $18,792 (SD = 8,734); and blocks were stratified by ethnic group and by income (low, medium, and high). Using pearson product moment correlation a significant relationship was found among measures of social relatedness and respective attachment patterns. With prediction supported for all

attachments: security ($r = .30$, $p < 5.01$), dismissing ($r = -.06$, $p < 5.05$), fearful avoidance ($r = -.06$, $p < 5.05$). Socioeconomic factors such as early family life and religion were also examined. The authors pointed out that in comparison with European Americans; African Americans demonstrated a higher degree of participation in all aspects of religious practices and behaviors and with a more positive attitude regarding the strength of individual faith beliefs. Rodriguez (2004) made a similar assertion regarding Latin-American culture and stated that spirituality and religion are heavily incorporated into Latin-American culture. According to the author, Latino culture is so much embedded in their culture that it would be almost impossible to separate. Any attempt to separate religious from Latino culture will result to false dichotomy.

Chatters, Taylor, Bullard, and Jackson (2009) explored the impact of race and ethnicity in a national sample of African Americans, black Caribbeans and non-Hispanic Whites. The study depicts a statistically significant difference between elderly African Americans and non-Hispanic Whites in all twelve measures of religious participation. The study found that Black people show higher levels of religious participation than non-Hispanic Whites. However, the study did not examine the relationship between religious involvement among different ethnic groups and psychological well-being. The study also reported ethical differences in the level of religious involvement, but did not report on gender variations among same or different racial groups.

Ellison, Burdette, and Wilcox (2010) studied the impact of race or ethnicity and religion in shaping relationship quality and concluded that a gap exists in terms of race and ethnicity relationship quality (Ellison, Burdette, & Wilcox, 2010). In the study,

Ellison, Burdette, and Wilcox found no statistical significance in the relationship between religiousness and race and ethnicity (Ellison et al., 2010). They also provided insight on the importance of religion among minority couples. According to Wilcox and Wolfinger (2008), religious inclined couples are less likely than a non-church going couple to abuse drugs, cheat on their spouse, or be involved in domestic violence. However, the study did not provide information on the correlations between the studied variables and the psychological well-being of either couple and, as a result, a gap in the literature exists.

The 2001 Report of the Surgeon General emphasized the influence of cultural and ethnic variables on the mental and behavioral health of minorities. Additionally, the report identified spirituality and religion as two important variables that may impact behavioral health of minorities, stating that many racial and ethnic minority American claimed that spiritual is an important component of their lives (U.S. Department of Health and Human Services, 2001). The research provided evidence that variables of faith and religiosity may be beneficial to behavioral health (U.S. Department of Health and Human Services, 2001). Religious ideology, beliefs, and practices have also been identified as major components of individual lives in many cultures (McLennan, Rochow, & Arthur, 2001). For a better understanding of key treatment issues and how to develop interventions, first of all, behavioral health counselors need to understand how diverse ethnicities view religiosity and spirituality. McLennan, Rochow, and Arthur (2001) suggested that behavioral health therapists should become more educated on how to include religion and spirituality in practice along with other elements of cultural diversity. However, there is still a need for further studies that will examine whether the association

between religiosity and the psychological well-being of the elderly varies by race and ethnicity.

Summary of Literature Review

In this chapter, I provide a detailed review of the existing literature on the variables assessed in this study. The purpose of this study was to examine gender and racial variations focusing on religious social relationships and psychological well-being, optimism, and self-rated health among the elderly. The research questions are based on emerging research, which supports a positive relationship between indicators of faith, belief, and physical health (Kloosterhouse & Ames, 2002; Powell, Shahabi, & Thoresen, 2003; Seeman et al., 2003); psychological well-being (Ingersoll & Bauer, 2004; Sink & Richmond, 2004; Small, 2000); and therapeutic interventions (McLaughlin, 2004; Roberts, Kiselica, & Fredrickson, 2002; Wolf & Stevens, 2001). The review addresses findings from current research on religion and well-being, religious involvement and psychological well-being, spirituality, and gender and ethical variations among elderly people. A trend in the studies shows increased research exploring the relationship between different religious activities, religious support, and life satisfaction of the elderly (Koenig et al., 1992; Krause, 2002; Krause, Ellison, Shaw, Marcum, & Boardman, 2001; Rook, 1998; Wuthnow, 1994). The literature reviewed convincingly shows a significant association between religious commitment/involvement and psychological well-being throughout adult life (Koenig et al., 2001). Most published studies show that earlier research in this field placed greater emphasis on examining how factors such as religious involvement, congregational cohesiveness, and spiritual assistance could affect the

psychological well-being of the elderly. Among the studies reviewed, most found a significant positive association between religiosity and psychological well-being, some studies found a negative association, while some found no association at all. Arber and Cooper (1999) suggested that the important of differences in gender and race cannot be overemphasis for better understanding of the impact of gender and race on psychological well-being

As previously stated, the majority of the studies explored gender differences in religious involvement; they examined why men/women are more involved in religion than the opposite sex or why a particular race/ethnic group is more religiously inclined than others. Some of the studies have also explored associations between the variables of religious involvement and psychological well-being among the elderly. However, for most studies, a gap in the literature still exists. For example, Walter and Davis (1998) reported that females are more involved in religion than males, but did not explain how this finding varies between females and males of different cultures or social backgrounds and how such variations impact their psychological well-being. Also, Thompson and Remmes (2002) found that females are more religious than males in terms of religious practice, but failed to provide information on the effects of these variables on psychological well-being, especially among the elderly. Like most studies reviewed, Thompson and Remmes provided little or no information on the effects of variations of gender or race on the impact of religious variables on the psychological well-being of the elderly. Eid (2003) claimed that religious belief is an important component of wellness. However, it is not clear if this claim holds for men and women, Whites, Blacks,

Hispanics, and other minorities. Cain and Kingston (2003) claimed that understanding the impact of religious beliefs on different ethnic groups could serve as a protective element against the stress that typically accompanies prejudice. However, gaps in the literature still exist as it is not clear which religiosity variables have significant effects on psychological well-being or whether the relationships vary by gender, especially among the elderly.

Elderly populations, in most studies reviewed, were examined as an entity without considering differences on gender or racial on the effect of religiosity on psychological well-being. In the review of literature, I did not find any study that explored the differences due to race and gender on the association between religiosity and psychological well-being. This current study was designed to do just that. This study examines the relationship between religiosity variables of interest and the psychological well-being of the elderly. Also, the goal of this study was to examine variations due to gender and race on any statistically significant relationship between religiosity variables and measure of psychological well-being.

In Chapter 3, I present the design of the study, identify variables of interest, and describe data collection procedures, threats to validity and reliability, statistical analysis of data, statistical assumptions, and potential threats.

Chapter 3: Research Method

In this chapter, I discuss the methods, procedures, and instruments used for collecting data for this study. Also, the research designs that, data collection procedure, sampling procedure, and methods of analysis that I used to explore the research questions are included.

Research Design

This study was a secondary analysis of data from RAHS 2001 and 2004 (Krause, 2004). The RAHS survey look at religiosity, self-rated health, depression, and psychological well-being in a sample of the elderly population (aged 65 and over) within the United States. The social statisticians from Harris Interactive conducted the survey in 2001, with an available sample size of 1,500 participants. The participants were re-interviewed in 2004. Both the 2001 and the 2004 surveys contained the same set of questions; however, I choose the 2004 version of RAHS as the source for data for this study because it provides percentage changes in psychological well-being from the baseline after four years. For the 2004 survey, 1,024 participants from the 2001 survey were re-interviewed: 75 respondents refused to participate, 112 could not be located, 70 of the former participants were too ill to be part of the 2004 survey, and 208 were deceased.

Although the sample size for the 2004 survey was less than the sample size for 2001 survey, the 2004 sample size is large enough to conduct the analysis as shown in the power analysis section below. This sample reflects the religiosity, gender, and ethnic diversity of elderly Americans which was the focus of the research question. Trinitapoli

and Regnerus (2006), Z. E. Hill, Cleland, and Ali (2004), and Takyi (2003) provided evidence that a larger national survey is a better source of information on variations by gender and race of the association between religiosity and psychological well-being, mostly among the elderly. RAHS 2001 and 2004 used a cross-sectional survey design with well-structured closed-ended survey questions administered via face-to-face interview. The questionnaire included items that asked about participants' religious status, activities and beliefs, depressive symptoms, life satisfaction, and self-rated health. Demographic variables included age, race, sex, education, and income.

One benefit of a close-ended survey is that the respondent is limited to sets of alternatives set by the researcher and is not allowed to express an opinion that cannot be influenced by the researcher (Foddy, 1993). RAHS 2001 and 2004 were conducted by staff members at Harris Interactive and were funded by the U.S. Department of Health and Human Services, National Institutes of Health (NIH), and the National Institute on Aging.

Sample and Sampling Procedure

Researchers at the Health Care Financial Administration (HCFA) drew sample of elderly person (65 years and older) each year from the agency master list file using a simple random sampling procedure. All participants had turned 65 years of age or older by the time the interviews started in 2001. The staff from Harris Interactive used the following sampling strategy: they draw 5% sample from the HCFA master file yearly and split the 5% drawn from master files into two different folders. One folder contained data on White respondents and the other contained data on Black respondents. The team from

Harris interactive also sorted the files by zip codes and county, calculated the nth interval for all the sub-files based on the number of records found and established a primary sample unit (PSU) by selecting approximately 25 additional names above recruitment for every identified case in the strategy above. Finally, recruitment of the sampled person within each PSU was conducted by the team. A complete listing of all of the people within each PSU was developed and the final sample consisted of 748 older Whites and 752 older Blacks, giving a total sample size of 1,500 for Wave 1 (the 2001 interview). The participants were re-interviewed in 2004 (Wave 2).

For the RAHS of 2001, the researchers from Harris Interactive selected a random probability sample of 1,500 participants from the HCFA database. This sample consisted of individuals (65 years and older) included in the HCFA medical beneficiary eligibility list.

The list from HCFA contained the name, address, sex, and race of virtually every elderly person in the United States. I should emphasize that elderly people were included in this list even if they were not receiving Social Security benefits (Krause, 2006, p. 140-146). Meanwhile, some older people who did not have a social security number were not included in this database.

One of the strengths of RAHS is that it was a national survey that includes respondents from all over the United States. To account for the disproportionate sample size, due partly to differences in demographic areas, sample weighting analysis was conducted on the sample by the original researchers who collected the primary data. The researchers from Harris Interactive included weighted data to ensure the data were

comparable with other recent data, with respect to demographics such as age, sex, education, and religion. The researchers computed separate weights for White and Black participants.

Wave 2 of this sampling, just like Wave 1, contained only White and Black elderly people. Those who moved into nursing homes and those participants who were too ill to participate were recorded as not eligible. The same questionnaire was used for both Wave I and Wave 2; Wave 2 examined changes over time.

Based on the structure and content of the questionnaire used for the RAHS of 2001 and 2004, the primary independent variables that I selected for this specific study were the measures of religion and spirituality. These were measured as following:

- hope/optimism (section 6000) was measured using the brief multiple measure of religiousness/spirituality (Fetzer Institute/National Institute on Aging Working Group, 1999);
- relationships with others (section 1600) was measured using a social support scale;
- religious involvement and commitment (section 4000) was measured using the salience in religious commitment scale (Roof & Perkins, 1975).

The dependent variables for this study were:

- self-rated health (section 400),
- depressive symptoms (section 5000),
- life satisfaction (section 1800).

I utilized depressive symptoms and life satisfaction as indicators of psychological well-being and I measured them using the satisfaction with life scale (SWLS) (Diener, Emmons, Larsen & Griffin, 1985).

Data Collection

The first set of data collection was conducted by Harris Interactive in March and August 2001 and it consisted of 1,500 interviews. Older Black people were oversampled in order to provide sufficient statistical power and, as a result, to explore the impact of race on religion (Krause, 2002). Preliminary data analysis conducted y Harris Interactive showed that among 1,126 eligible participants interviewed, cases of missing data ranged from 0% to 16%, with two nonresponsive variables revealed at 8%. To avoid any potential statistical research errors as a result of missing data, researchers from Harris Interactive performed multiple imputation procedures using the software developed by Schafer in 1997. However, the set of data that I used for this current study was based on the 1,024 cases from the 2004 data collection (Wave II) RAHS.

Instrumentation and Material

For this analysis, I selected a subset of questions from the RAHS 2004(see Appendix B). RAHS was first conducted in 2001 as a national representative sample of the older Black and White, noninstitutionalized residents of the United States who were listed in the HCFA medical beneficiary eligibility list. The research questions I identified were the most relevant to measure the identified study variables. Also I adopted procedures based on similar research work done by other researchers such as Trinitapoli

and Regnerus (2006), Schafer (1997), and Schafer & Olsen (1998) to avoid statistical research bias.

The questionnaire was broken down into sections to ensure that the researchers covered questions on the variables of interest. For the current study, I selected questions on global self-rated health, relationships with other members, religious involvement/commitment, depressive symptoms, life satisfaction, and hope/optimism. Demographic questions included race/ethnicity (Q9010), age on the last birthday (Q8505), educational qualifications, and marital status. The respondents' sex (210) was filled out based on the Harris Interactive researcher's observation (1 = Male, 2 = Female). However, as stated earlier, respondents' records from HCFA also indicated whether they were male or female. The 2004 RAHS questionnaire consisted of a total of 26 sections. Only the analysis of relevant subsets of the overall data in the RAHS 2004 was required since this the focus of the current study was on variations due to gender and race on the relationship between religiosity and psychological well-being. The focus of this study was on the responses from 10 of the 26 total sections reported on the RAHS 2004. Finally, I utilized responses to specific questions that contributed to an understanding of the variables of interest to answer the research questions and examine the research hypotheses.

Threats to Validity and Reliability

Survey research has been noted to be an effective data collection tool, especially when collecting raw data from a population, which can be difficult to observe directly. There are different forms of survey research. However, the RAHS of 2001 and 2004 used

a face-to-face interview technique to administer a set of questions to selected respondents. One advantage of a face-to-face survey over other survey methods is that an interviewer is physically present to ask the survey questions and provide clarity to the respondent as needed.

Despite its offered advantages, such as the complexity and quality of the data collected, face-to-face surveys pose some significant logistics costs, as well as potential sources of research bias. For example, in a different study, Shortell and Richardson (1978) identified some potential threats to validity and reliability such as incompleteness, inaccuracy, inconsistency, and invalidity that one must consider to ensure that the quality of data collection is uncompromised. Babbie (2004) and Grembowski (2001) stated that a face-to-face survey provide researchers the ability to measure orientation and attitudes in a very large population such this study. For example, the RAHS 2001 and 2004 surveys had a section for the interviewer's observations. This study was a secondary analysis of data collected using the questionnaire from RAHS 2004.

Validity

Cook and Campbell (1979) defined validity as the tendency of a test to litteray measure on point. The questions administered using the RAHS of 2001 and 2004 are capable of measuring the concepts of interest for this study. Babbie (2004) reported four methods that could be used to assess validity in a research study: face validity, content validity, criterion validity, and construct validity.

Researchers from Harris Interactive checked the face validity for the RAHS of 2004 by testing the selected survey questionnaires prior to initial data collection. This

phase was completed by the staff of Harris Interactive, an expert company that specialized in the development of the standard survey that was used to develop the questionnaire used for the RAHS 2001 and 2004, before the actual data collection started. Content validity was established by the staff of Harris Interactive by demonstrating that the items of a test represent every relevant aspect of the domain being measured and by reviewing and selecting appropriate questionnaires for the proposed study. They also evaluated the respondent source (HCFA) and the process used by staff of HCFA to select potential participants. Harris Interactive also ensured that both criterion and construct validity were met. The staff of Harris Interactive also tested the surveys to ensure that the questionnaire was capable of measuring the variables of interest.

Patton (2002) explained that when multiple measures are made over a period of time, history and maturation threats to internal validity became inevitable. However, this was not an issue in this study as the participants were interviewed twice, with an interval of just three years between interviews.

Selection bias, another threat to validity, was addressed by using a five-step process that included drawing random 5% samples from the names in the HCFA master list each year. The Harris Interactive researchers believed that the steps taken in administering the RAHS of 2001 and 2004 questionnaires were sufficient to produce valid data, which were used for secondary analysis in this study.

Reliability

Patton (2002) defined reliability as the ability of a test to measure consistently and produces consistent results. Checkoway, Pearce, and Kriebel (2004) claimed that, unlike

other type of survey such as case-control, face-to-face study survey provides the researcher the ability to collect desired information from the participants rather than "unknown". The RAHS 2001 and 2004 questionnaires were filled out and collected directly from the participants in the study, rather than another person acting on behalf of the study subject. Also, the respondents were interviewed in their homes. The Harris researchers believed that participants tend to feel free in the comfort of their home setting to answer personal questions and would give the same answer if the data were to be collected again.

Statistical Data Analysis

I utilized secondary data from the RAHS 2004 to answer the research questions and research hypotheses of interest in this study. Also, I conducted the data analysis using statistical package for the social science (SPSS) software (Grad Pack 20.0). Finally, I tested the data from the RAHS of 2004 against the hypotheses using inferential statistical procedures: hierarchical linear regression analysis and Pearson correlation. These methods allowed readers to compare the summary scores of the dependent variables and the various independent variables. The sample provides two different sample weights to be used for race computation. Variable *postwtw2* was used when examining for combined race and the variable *gentwtw2* was used when looking within race. Since this study was designed to examine variations by race on the study variables, weight sample variable *gentwtw2* was utilized to examine variations by different racial groups.

First, I generated a table of descriptive statistics for the demographic characteristics of the participants, including sample size, mean, and standard deviation,

for each of the study variables. Then, I generated descriptive statistics of the highest level of education attained by the participants from RAHS 2001, because RAHS 2004 did not measure the highest level of education completed by the respondents. Pearson correlation analysis was performed to determine the association between sets of religious variables including relationships with others and religious commitment in addition to dependent variables such as depression, life satisfaction, and self-rated health. Also, variations by gender and race on the association between religious variables and psychological well-being among the elderly were examined using a hierarchical linear regression model. To conduct the analysis using the data from RAHS, the data had to meet the following assumptions: the variables are normally distributed at all levels and represent a random sample from the population of elderly Americans. Also, the scores on the variables are independent of possible scores recorded on other variables.

I also examined the effects of covariates using a hierarchical linear regression model on the six of the 26 categories of the RAHS of 2004 questionnaire to answer the research questions.

Research Questions and Hypotheses

The research questions and hypotheses are given in Table 2.

Table 2

Research Questions, Hypotheses, Variables, and Statistical Tests from the 2004 RAHS

Research questions	Hypotheses	Variables	Statistical tests
Research question 1 Does the association between religious-based social relationships with others and the self-rated health of the elderly vary by gender and/or race?	Hypothesis 1 H_{a1}: The association between religious-based social relationships with others and the self-rated health of the elderly varies by gender and/or race. H_{01}: The association between religious-based social relationships with others and the self-rated health of the elderly does not vary by gender and/or race.	Primary independent variable (relationship with others–section 400) and dependent variable (self-rated health–section 200).	Pearson bivariate and Hierarchal linear regression was used to test for gender differences in psychological well-being.

Table 2 (Continued)

Research questions	Hypotheses	Variables	Statistical tests
Research question 2 Does the association between the religious involvement/commitment and the psychological well-being of the elderly (measured by depressive symptoms score) vary by gender and/or race?	Hypothesis 2 H_{a2}: The association between the religious involvement/commitment and the psychological well-being of the elderly (measured by depressive symptoms score) varies by gender and/or race. H_{02}: The association between the religious involvement/commitment and the psychological well-being of the elderly (measured by depressive symptoms score) does not vary by gender and/or race.	Primary independent variables: religious involvement/ commitment (section 4000 of 2004 RAHS). Dependent variables: depressive symptoms (section 5000) and life satisfaction (section 5100).	Pearson bivariate and Hierarchal linear regression was used to test for gender differences in psychologi cal well-being. .
Research question 3 Does the association between the religious optimism and the psychological well-being of the elderly (measured by life satisfaction score) vary by gender and/or race?	Hypothesis 3 H_{a3}: The association between the religious optimism and the psychological well-being of the elderly (measured by life satisfaction score) varies by gender and/or race. H_{03}: The association between the religious optimism and the psychological well-being of the elderly (measured by life satisfaction score) does not vary by gender and/or race.	Primary independent variables: religion, hope/optimism (section 6000). Dependent variable: self-rated health (section 400)	Pearson bivariate and Hierarchal linear regression was used to test for gender differences in psychologi cal well-being.

Power Analysis

As a part of designing the current research study, it was important that I take into consideration the statistical power, which was based on the expected size of the effect and the sample size, to ensure the data set meets the statistical requirements to answer the research questions. G*Power 3.1.1, developed by Faul, Erdfelder, Lang, and Buchner (2007), was used to conduct power analysis to help determine the number of participants necessary to detect any effect due to the study variables. According to the authors, three steps are involved in power analysis using G*Power 3.1.1. Step 1: To conduct a power analysis for a two-group *t*-test, a decision between a one-tailed and a two-tailed test is needed prior to the test. Step 2: Cohen's size effect specification is required in order to measure d and HI, the significant level *α,* and the required power (1-β). Finally, the preferred group size allocation ration is determined by the equation η2/η1. The desired statistical power for this current study is set to 0.80 to enable detection of small, but statistically significant differences (Cohen, 1992).

Effect size, according to Cohen (1998), measures the degree to which the hypotheses examined in the study reflect the population. The larger the value of effect size, the greater the degree to which the hypothesis under study is manifested. Cowles, York, Downsview, and Davis (1982) reported that it is well established that one should use either $\alpha = 0.05$ or $\alpha = 0.01$ as a Type 1 error probability and that one should select effect sizes as small, medium, or large as defined by Cohen (1992, 1998). Effect sizes are based on the type of statistical analysis intended for use in examining the hypotheses. For this study, I used the G* Power 3.1.3 for linear multiple regression analysis with the

following parameters: medium effect size f = 0.25, α = 0.05 and power statistics (1-β) = 0.80, which requires minimum sample size of 269 to detect an association if it exists. Medium effect size was chosen to enhance the degree to which the hypothesis under study is manifested. Therefore, the available sample of 1024 from RAHS of 2004 was sufficient to conduct the proposed analysis.

Ethical Considerations

Orb, Eisenhauer, and Wynaden (2001) suggested that both qualitative and quantitative research methods have some level of ethical issues associated with them. In most cases, ethical issues related to qualitative and quantitative research create some degree of uncertainty that threatens the goals of the research to make generalizations for the good of others and to ensure that the rights of privacy of the participants are upheld. I obtained the RAHS database was from the Inter-university Consortium for Political and Social Research (ICPSR) (computer file name ICPSR03255) after I was granted permission. I downloaded and stored the file in a computer with firewall and virus protection and the file was not available to the Internet or to other user access. Though I utilized a pre-existing data set for this study, before the data were downloaded, I completed the ethical training “Protecting Human Research Participants” (PHRP) course provided by the NIH. The course consists of seven modules; four of those modules are followed by a short quiz. After a passing score was obtained and a certificate of completion received, I also submitted an Institutional Review Board (IRB) application to Walden University and received approval. In order to complete the desired statistical analysis, transformation of the database was performed using SPSS. The original data

downloaded from the ICPRS database was an SPSS portable (.por) file. The .por extension file was uploaded into SPSS, and saved as a .sav file. Some of the variables in the original dataset have sub-or multiple items with some Likert-type scales. For example, the depression variable had four items with the same response scale. I generated the mean values of the items and recoded into different variables using SPSS.

To ensure the privacy of the human participants in this study is maintained, I took the following steps:

1. The data from the RAHS of 2004 used for this study had already been de-identified and there was no contact with participants of the 2001 and 2004 RAHS.
2. Since this study was a secondary data analysis of de-identified data, guarding against marginalization, deception, or coercing human and animal subjects in the study was not a concern.
3. During the data collection stage, the original researchers ensured that the respondents received, read and understood copies of the letter of consent (see Appendix A), which revealed important facts about the project to the respondents. The purpose of the study was also described to the respondents and only those who provided consent in writing were used for the study.
4. In accordance with the publication manual of the American Psychological Association in use at the time (APA, 2001), the questionnaire used for RAHS of 2001 and 2004 avoided the use of terminology concerning gender, sex, and race/ethnicity which was biased toward specific groups of people.

5. The current study ensured that the data set was used for statistical purposes only.
6. The data set was utilized “as is” (without decoding) to ensure participants’ information was protected.
7. An application was made to IRB for ethical review. The application was approved before the data analysis began.

Summary

The purpose was to examine whether the relationships between religious-based social support and psychological well-being vary by gender and race. In this chapter, I discussed the study variables, instrumentation and materials, data collection, threats to validity and reliability, and the method of statistical analysis. The use of secondary data for the analysis and ethical issues involved with the use of RAHS of 2004 were also discussed.

In Chapter 4, I will present findings from the testing of the hypotheses of this study and analysis of the study data set. This chapter also provides more detail on the analysis of the study variables and presents details of the statistical analysis used. Chapter 5 provides a detailed discussion of the study findings, a summary, recommendations and a conclusion.

Chapter 4: Results

The purpose of this study was to examine the relationships between religious-based social support and psychological well-being and whether these relationships varied by gender and race in a national sample of older Black and White adults, aged 65 or older. In this study, I utilized secondary data from the RAHS (Krause, 2004). The RAHS survey was funded by the U.S. Department of Health and Human Services. The researchers examined religiosity specific to the practice of Christianity and included scales assessing adults' physical and mental health, including psychological well-being (Krause, 2006). In the current study, I analyze data from the RAHS using SPSS 20.0. I started this chapter with a restatement of the study's research questions and hypotheses. A description of the study sample was then presented, followed by a description of the study variables. The fourth section was devoted to a presentation and a discussion of statistical results as they pertain to the study's research questions. This chapter ends with a summary of the results.

Research Questions and Hypotheses

I designed this research study to examine the following research questions and hypotheses:

Research Question 1

Does the association between religious-based social relationships with others and the self-rated health of the elderly vary by gender and/or race?

The null hypothesis (H_{01}) is that the association between religious-based social relationships with others and the self-rated health of the elderly does not vary by gender and/or race.

The alternate hypothesis (H_{a1}) is that the association between religious-based social relationships with others and the self-rated health of the elderly varies by gender and/or race

Research Question 2

Does the association between the religious involvement/commitment and the psychological well-being of the elderly (measured by depressive symptoms score) vary by gender or race?

The null hypothesis (H_{02}) is that the association between the religious involvement/commitment and the psychological well-being of the elderly (measured by depressive symptoms score) does not vary by gender and/or race.

The alternate hypothesis (H_{a2}) is that the association between the religious involvement/commitment and the psychological well-being of the elderly (measured by depressive symptoms score) varies by gender and/or race.

Research Question 3

Does the association between the religious hope/optimism and the psychological well-being (life satisfaction) of the elderly vary by gender and/or race?

The null hypothesis (H_{03}) is that the association between the religious hope/optimism and the psychological well-being (measured by life satisfaction score) of the elderly does not vary by gender and/or race.

The alternate hypothesis (H_{a3}) is that the association between the religious hope/optimism and the psychological well-being (measured by life satisfaction score) of the elderly varies by gender and/or race.

Religion, Aging, and Health Survey (2004) Information

Researchers from Harris Interactive collected the data through the Religion, Aging, and Health Survey (Krause, 2004) in two waves, Wave 1 and Wave 2. Wave 1 data were collected from March 2001 to August 2001; the sample size for Wave 1 was n = 1,500. In this study, I used Wave 2 data. Wave 2 data were collected from March 2004 to August 2004 to obtain follow-up information from the Wave 1 participants. The sample size for Wave 2 was *n* = 1,024. In the Wave 2 data collection, the response rate of White participants (51%) was higher than the response rate of Black participants (45%). However, variables were weighted in Wave 2 with respect to participants' age, gender, highest level of education, and region of the country. The RAHS eligibility criteria included Black or White adults aged 65 or older at the time of data collection who were able to answer all the questions on the survey. As a result, the current study was limited to participants who identified as Black or White and who answered all questions on the survey, which resulted in a sample size of *n* = 688.

Sample Demographics

Those who participated in Wave 2 of the RAHS and completed all the questions in the survey were included in the current study (*n* = 688). Table 3 presents the demographic characteristics of the study sample. The sample was predominantly female, 61.2% (*n* = 421). The racial distribution was relatively equal across groups, with 47.2%

(*n* = 325) of participants being Black and 52.8% (*n* = 363) being White. The majority of study participants were either married (*n* = 304; 44.2%) or widowed (*n* = 289; 42.0%). Participants in this study were in general of low socioeconomic status: 63.8% of participants had yearly incomes of less than $25,000.

Table 3

Descriptive Statistics for Categorical Variables (n = 688)

Gender	Response Option	Frequency	(%)
	Male	267	38.8
	Female	421	61.2
Race			
	White	363	52.8
	Black	325	47.2
Marital Status			
	Married	304	44.2
	Separated	13	1.9
	Divorced	56	8.1
	Widowed	289	42.0
	Never married	26	3.8
Yearly Income			
	Less than $5,000	16	2.3
	$5,001-$14,999	247	35.9
	$15,000-$24,999	176	25.6
	$25,000-$39,999	127	18.4
	$40,000-$79,999	100	14.6
	More than $80,000	22	3.2

Preliminary Analyses

Prior to conducting statistical analyses for hypothesis testing, I analyzed the descriptive statistics for primary variables of interest. For the predictor variables measuring religious constructs, the coding schemes were as follows:

- based on the instrument used for measuring religious-based relationship with others, a *higher* score on the religious-based relationships with others scale denoted having *fewer* religious-based relationships;
- based on the religious commitment inventory (RCI-10) scale used for measuring religious commitment, a *higher* score on the religious commitment scale denoted having a *lower* level of religious commitment;
- a *higher* score on the religious optimism scale denoted *higher* religious pessimism.

For the criterion variables, the coding schemes were as follows:

- based on the instrument used for measuring self-rated health of the individual, a *higher* score on the self-rated health scale denoted *poorer* self-rated health;
- a *higher* score on the measurement of depression denoted *higher* levels of depression based on the center for epidemiologic studies depression scale;
- a *higher* score on the life satisfaction score denoted *higher* life satisfaction based on the SWLS used for measuring respondents' satisfaction with life.

Measurement inter-item reliabilities were determined via Cronbach's alpha, an indicator of inter-item consistency (Muijs, 2010), for each scale. The religious measures displayed strong internal consistency, with Cronbach's alpha ranging from .80 to .94. The self-rated health and depression scales also displayed good internal consistency, Cronbach's alphas being .75 and .88 respectively. The life satisfaction scale, however, displayed adequate (as opposed to strong) internal consistency, with a Cronbach's alpha of .64.

Normal distribution of scales scores is an assumption for most statistical analyses, including multiple linear regressions (Babbie, 2004). Since normality is an assumption that cannot be violated lest it impact statistical result, study scales were analyzed as to their normality. Two scales displayed significant non-normality: (a) the religious-based relationships with others scale and (b) the depression scale. The religious-based relationships with others scale had a skewness value of -1.73 and a kurtosis value of 3.56. While there were no significant outliers in the data, most participants had scores between 3.00 and 4.00, with a significant number of participants providing a score of 3.50 or 4.00. As such, participants reported having few religious-based relationships with others. Specifically, participants noted that they have few people to provide them rides to church or other places and help them out with things that need to be done at home or when they are ill (Figure 1).

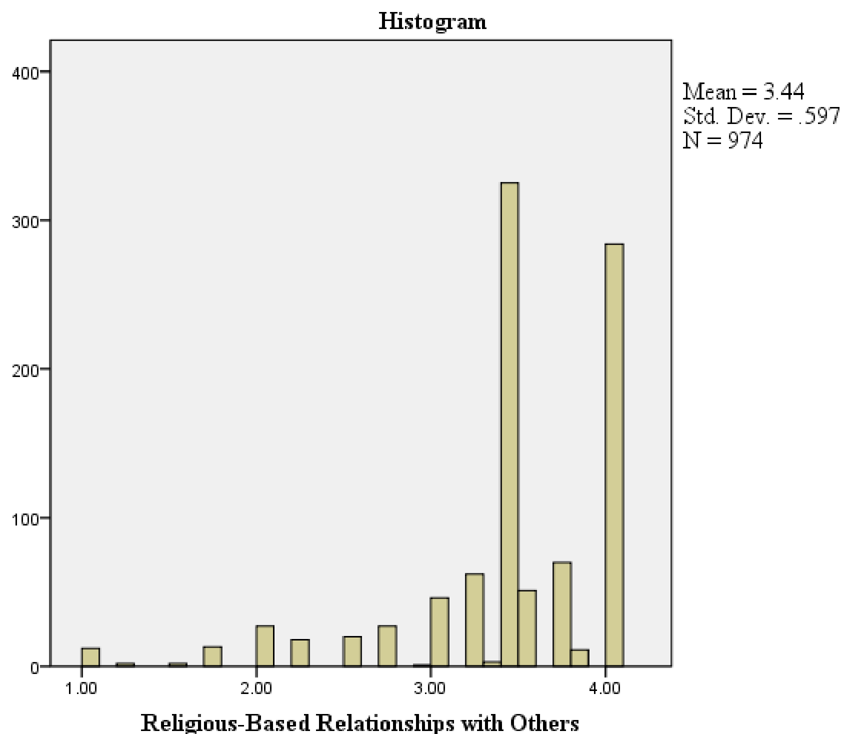


Figure 1. Distribution of scores on the religious-based relationships with others scale.

To eliminate the non-normality of the distribution of scores on this scale, the scale was first transformed by subtracting the scores from the highest score possible plus 1 to eliminate negative values (Cohen & Cohen, 1983; Rosenthal & Rosnow, 2008). I then transformed the data into log probabilities via loglinear transformation (Rosenthal & Rosnow, 2008). Due to this transformation, I coded the scores on the religious-based relationship scale used reverse-code method, so that a higher score on the scale denoted more religious-based relationships with others.

As indicated in Figure 2, the depression scale also displayed significant non-normality, with a skewness value of 1.69 and a kurtosis value of 2.69. Based on the coding scheme of this variable, participants on average were not depressed.

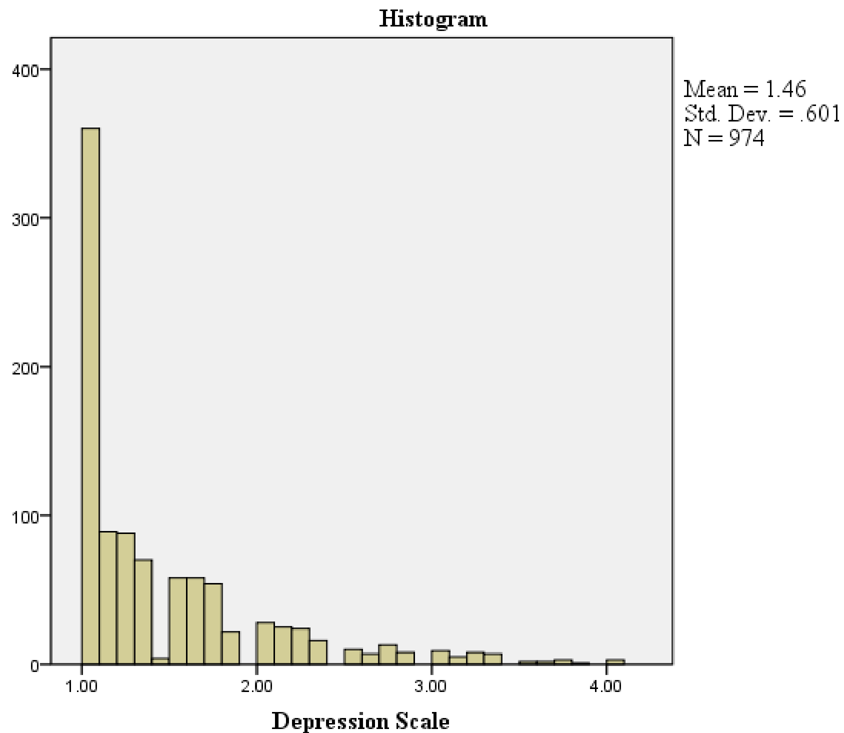


Figure 2. Distribution of scores on the depression scale.

To eliminate the non-normality of the distribution of scores on the depression scale, I transformed the scale data into log probabilities via loglinear transformation (Rosenthal & Rosnow, 2008). As the depression scale was not negatively skewed, the transformation did not affect the coding. After these transformations, both the relationships with others and the depression scale displayed normality in the distribution of scale scores (see Table 4).

Table 4

Descriptive Statistics for Primary Study Variables

Variable	α	*Mean*	*SD*	*Min*	*Max*	*Skewness*	*Kurtosis*
Relationships with others	.80	3.44	.60	1.00	4.00	-1.73	3.56
Relationships with others[a]	*.80*	*.17*	*.14*	*0.00*	*0.60*	*.04*	*.36*
Religious Commitment	.94	1.71	.66	1.00	4.00	.87	1.16
Religious Hope	.88	1.87	.58	1.00	4.00	.39	.78
Self-Rated Health	.75	1.85	.54	1.00	4.00	.57	-.45
Depression	.88	1.46	.60	1.00	4.00	1.69	2.69
Depression[a]	*.88*	*.14*	*.15*	*0.00*	*0.60*	*.99*	*.10*
Life Satisfaction	.64	2.20	.58	1.00	4.00	.04	.36

Note. [a] Recomputed scales via loglinear transformations. As the relationship with others scale was negatively skewed, the transformation resulted in reverse-coded scores. The depression scores maintained the same coding scheme.

As the religious variables of religious-based relationships with others, religious commitment, and religious optimism were all predictor variables, Pearson bivariate correlations and tolerance values were computed to examine whether multicollinearity (i.e., predictor variables that share substantial variance and conceptual overlap) existed between these variables (Rosenthal & Rosnow, 2008). I conducted the Pearson bivariate correlations with the three religious predictor variables, specifically; the normally distributed religious commitment and religious optimism scales and the transformed religious relationships with others scale (see Table 5). Religious commitment was significantly associated with religious-based relationships with others, r (688) = .13, $p <$

.001, and religious optimism, *r* (688) = .32, *p* < .001. Religious commitment did not display multicollinearity with the religious-based relationships with others and religious optimism measures, as indicated by the Pearson correlation coefficients being less than .80 and the tolerance levels being 1.00 for all correlations.

Table 5

Pearson Bivariate Correlations & Tolerance Values: Religious Constructs Predictor Variables

	Relationships with others	Religious commitment	Religious optimism
Relationships with Others [a]	1.00		
Religious Commitment	.13*** (Tolerance = 1.00)	1.00	
Religious Optimism	.04 (Tolerance = 1.00)	.32*** (Tolerance = 1.00)	1.00

Note. ***p < .001: Relationship with others scale is the transformed scale

Hypothesis Testing: Data Presentation and Analysis

In this study, I choose hierarchical linear regression model for examining the three research questions. For each hierarchical linear regression, I entered the covariates of income and marital status on the first step of analyses. In order to understand the directionality and meaning of any significant interaction terms, gender was recoded where 0 = male and 1 = female and race was recoded where 0 = White and 1 = Black. As such, a negative standardized beta weight (β) coefficient for gender would refer to males and a negative standardized beta weight (β) coefficient for race would refer to White individuals. I computed the interaction terms in accordance with recommendations by

Frazier, Tix, and Baron (2004). First, the religious variables that were predictor variables were centered, so that the mean scores = 0. The gender and race variables were recoded using 0 and 1, as stated above. The centered religious variables were computed with the gender and race variables to create interaction terms (Frazier, Tix, & Baron, 2004).

Research Question 1

Table 6 presents the result of the hierarchical linear regression analysis conducted to examine whether the association between religious-based social relationships with others and self-rated health among the elderly varies by gender or race. I entered the covariates of marital status and income on the first step of the regression model. I entered gender and race on the second step of the regression model, followed by the religious-based relationships with others measure on the third step. I entered the interaction terms of race by religious-based relationships with others and gender by religious-based relationships with others on the fourth and last step of the regression model. The criterion variable was self-rated health.

Table 6

Hierarchical Linear Regression Models: Income, Marital Status, Gender, Race, Religious-Based Relationships with Others, and Gender and Race by Religious-Based Relationships with Others Interaction Terms Predicting Self-Rated Health

Variable	β	*T*	*R*	R^2	*SE*	ΔR^2	*p*
Model 1			.14	.02	.51	.02[a]	.001
Income	-.15	-3.60			.01		<.001
Marital Status	-.05	-1.11			.01		.266
Model 2			.14	.02	.51	.00[b]	.973
Income	-.15	-3.14			.01		.002
Marital Status	-.05	-1.08			.02		.279
Gender	.00	.09			.04		.930
Race	.01	.22			.04		.826
Model 3			.15	.02	.51	.00[c]	.115
Income	-.14	-2.96			.01		.004
Marital Status	-.05	-1.16			.02		.238
Gender	-.01	-.12			.04		.643
Race	.00	.09			.04		.954
Relationships with others	-.06	-1.58			.03		.002
Model 4			.19	.03	.51	.01[d]	.015
Income	-.14	-2.89**			.01		.004
Marital Status	-.06	-1.18			.02		.238
Gender	-.02	-.46			.04		.643
Race	.00	.06			.04		.954
Relationships with others	-.66	-3.12**			.17		.002
Relationships with others by Gender Interaction	.34	1.97*			.08		.049
Relationships with others by Race Interaction	.27	2.03*			.07		.043

Note. n = 688. [a] $F(2, 685) = 6.59$, $p = .001$; [b] $F(4, 683) = 3.30$, $p = .011$; [c] $F(5, 682) = 3.14$, $p = .008$; [d] $F(7, 680) = 3.48$, $p = .001$.

As indicated in Table 6, the first model (Model 1) of the hierarchical linear regression, wherein the predictor variables were income and marital status and the criterion variable was self-rated health, was significant, $F(2, 685) = 6.59$, $p = .001$. This

model, however, was significant only due to income, β(2, 685) = -.15, $t(2, 685) = -3.60$, $p = .003$, with income explaining 2% of the variance in the criterion variable of self-rated health. Participants who were of higher-income status were more likely to report better self-rated health than participants who were of lower-income status. Marital status did not significantly predict self-rated health, β(2, 685) = -.05, $t(2, 685) = -1.11$, $p = .266$.

As an ad hoc statistical analysis for this research question, I examined comparisons on religious-based relationships scores across income groups via a one-way ANOVA. The mean and standard deviation scores are denoted in Table 7. As seen in Table 7, the transformed religious-based relationship scale was reverse-coded, so that a higher score denoted more religious-based relationships. The one-way ANOVA was significant, $F(5, 682) = 7.84$, $p < .001$, and the income groups showed homogeneity of variance with regard to religious-based relationship scores, Levene's $F(5, 682) = 1.01$, $p = .40$. A Tukey post hoc test determined that participants in the $5,001 to $14,999 per year income group had significantly *more* religious-based relationships than participants in all other income groups, except for the less than $5,000 per year income group (see Table 7 for means and standard deviations).

Table 7

Mean Scores: Religious-Based Relationships Across Income Groups

Income Group	N	Mean	SD	Mean (Transformed)[a]	SD (Transformed)[a]
Less than $5,000	16	3.37	.78	.18	.17
$5,001-$14,999	247	3.26	.73	.21	.16
$15,000-$24,999	176	3.46	.61	.16	.15
$25,000-$39,999	127	3.55	.47	.14	.13
$40,000-$79,999	100	3.63	.47	.12	.12
$80,000 or More	22	3.64	.44	.12	.12

Note. [a] Due to transformations, the mean and standard deviation scores are reverse coded

Table 8 presents the results of the significant final hierarchical linear regression model (Model 4), with all predictor variables entered, F_{change} (2, 680) = 4.24, p = .015. The significant predictor variables collectively contributed 3% of the variance in the criterion variable of self-rated health. In the final model, with all predictor variables entered, there were four significant predictors: (a) income, (b) religious-based relationships with others, (c) religious-based relationships with others by gender, and (d) religious-based relationships with others by race. One significant predictor of self-rated health was income, β(2, 680) = -.14, t(2, 680) = -2.89, p = .004. Participants who were of higher-income status were more likely to report better self-rated health than participants who were of lower-income status. Participants who had more religious-based relationships with others were also more likely to report better self-rated health than participants who had fewer religious-based relationships with others, β(2, 680) = -.66, t(2, 680) = -3.12, p = .002. Both interaction terms were significant. I entered the variables into the procedure in such a way to eliminate self-coding by the procedure. To understand

the directionality and meaning of the interaction terms better, gender was recoded where 0 = male and 1 = female and race was recoded where 0 = White and 1 = Black. The coefficient effect for the interaction term showed a greater effect of relationship with others on self-rated health among females.

Moreover, the interaction term between race and relationship with others shows that among black individuals there was greater effect of relationship with others on self-rated health, β(2, 680) = .27, $t(2, 680) = 2.03$, $p = .043$.

Table 8

Hierarchical Linear Regression Models: Income, Marital Status, Gender, Race, Religious-Based Relationships with Others, and Gender and Race by Religious-Based Relationships with Others Interaction Terms Predicting Self-Rated Health

Variable	β	*T*	*R*	*SE*	R^2	ΔR^2	*p*
Model 4[a]			.19	.51	.03	.01	.015
Income	-.14	-2.89		.01			.004
Marital Status	-.06	-1.18		.02			.238
Gender	-.02	-.46					.643
				.04			
Race	.00	.06		.04			.954
Relationships with others	-.66	-3.12		.17			.002
Relationships with others by Gender Interaction	.34	1.97		.08			.049
Relationships with others by Race Interaction	.27	2.03		.07			.043

Note. n = 688. [a] $F(7, 680) = 3.48$, $p = .001$.

Research Question 2

Table 9 presents a hierarchical linear regression analysis conducted to examine whether the association between religious involvement/commitment and psychological well-being (as indicated by depressive score) among the elderly (Black and White adults, aged 65 or older) varies by gender or race. I entered the covariates of marital status and income on the first step of the regression model. I also entered gender and race on the second step of the regression model, followed by the religious commitment measure on the third step. The interaction terms of race by religious commitment and gender by religious commitment were entered on the fourth and last step of the regression model. Also, I entered the variables into the procedure in such a way as to eliminate self-coding by the procedure. The coefficient effect for interaction term among race and religious commitment showed no statistically significant difference effect between Black and White. Moreover, the coefficient effect for interaction term among gender and religious commitment showed no statistically significant difference effect between female and male. The criterion variable was depression.

Table 9

Hierarchical Linear Regression Models: Income, Marital Status, Gender, Race, Religious Commitment, Gender and Race by Religious Commitment Interaction Terms Predicting Depression

Variable	β	*T*	*R*	*SE*	R^2	ΔR^2	*P*
Model 1			.21	.14	.04	.04[a]	< .001
Income	-.19	-4.69***		.00			< .001
Marital Status	.04	.85		.00			.397
Model 2			.22	.14	.05	.01b	.239
Income	-.20	-4.40***		.00			< .001
Marital Status	.02	.35		.00			.727
Gender	.06	1.47		.01			.141
Race	-.03	-.78		.01			.433
Model 3			.23	.14	.06	.01c	.022
Income	-.20	-4.38***		.00			< .001
Marital Status	.01	.31		.00			.753
Gender	.08	1.83		.01			.067
Race	-.01	-.23		.01			.820
Religious Commitment	.09	2.29*		.01			.022
Model 4			.23	.14	.06	.00d	.554
Income	-.20	-4.28**		.00			< .001
Marital Status	.02	.36		.00			.715
Gender	.08	1.85		.01			.065
Race	-.00	-.10		.01			.925
Relationships with others	-.02	-.10		.03			.920
Religious Commitment by Gender Interaction	-.02	-.12		.02			.904
Religious Commitment by Race Interaction	.13	1.09		.02			.278

Note. n = 688. [a]$F(2, 685) = 15.89$, $p < .001$; [b] $F(4, 683) = 8.677$, $p < .001$; [c] $F(5, 682) = 8.03$, $p < .001$; [d] $F(7, 680) = 5.90$, $p < .001$.

As indicated in Table 9, the first model (Model 1) of the hierarchical linear regression, wherein the predictor variables were income and marital status and the

criterion variable was depression, was significant, F (2, 685) = 15.89, p < .001. This model, however, was significant due to income, β(2, 685) = -.19, t(2, 685) = -4.69, p < .001, with income explaining 4% of the variance in the criterion variable of depression. Participants who were of higher-income status were more likely to report *lower* levels of depression than participants who were of lower-income status. Marital status did not significantly predict self-rated health, β(2, 685) = .04, t(2, 685) = .85, p = .397.

As seen in Table 10, the third model (Model 3) of the hierarchical linear regression, wherein the predictor variables were income, marital status, gender, race, and religious commitment and the criterion variable was depression, was significant, F_{change} (1, 682) = 5.23, p = .022. The significant predictor variables explained an additional 1% of the variance in the criterion variable of depression as based on the change in R^2 in this step of the model. In Model 3, the only significant predictors of depression were income, β(1, 682) = -.20, t(1, 682) = -4.38, p < .000, and religious commitment, β(1, 682) = .09, t(1, 682) = 2.29, p = .022. In Model 3, participants who were of higher-income status were more likely to report lower levels of depression than participants who were of lower-income status. In addition, persons who had higher levels of religious commitment were more likely to report lower levels of depression than persons with lower levels of religious commitment.

Table 10

Hierarchical Linear Regression Models: Income, Marital Status, Gender, Race, & Religious Commitment Predicting Depression

Variable	β	*T*	*R*	*SE*	R^2	ΔR^2	*p*
Model 3[a]			.23	.14	.06	.01	.022
Income	-.20	4.38***		.00			< .001
Marital Status	.01	.31		.00			.753
Gender	.08	1.83		.01			.067
Race	-.01	-.23		.01			.820
Religious Commitment	.09	2.29*		·01			.022

Note. n = 688. [a] $F(5, 682) = 8.03$, $p < .001$. *$p < .05$; **$p < .01$; ***$p < .001$

Research Question 3

Table 11 presents a hierarchical linear regression analysis conducted to examine whether the association between religious hope/optimism and psychological well-being (as indicated by life satisfaction score) among the elderly varies by race or gender. I entered the covariates of marital status and income on the first step of the regression model. I entered gender and race on the second step of the regression model, followed by the religious optimism measure on the third step. Finally, I entered the interaction terms of race by religious optimism and gender by religious optimism on the fourth and last step of the regression model. I entered the variables into the procedure in such a way as to eliminate self-coding by the procedure. The coefficient effect for interaction term among race and religious optimism showed no statistically significant difference effect between Black and White. Moreover, the coefficient effect for interaction term among gender and religious optimism showed no statistically significant difference effect between female and male. The criterion variable was life satisfaction.

Table 11

Hierarchical Linear Regression Models: Income, Marital Status, Gender, Race, Religious Optimism, and Gender and Race by Religious Optimism Interaction Terms Predicting Life Satisfaction

Variable	β	*T*	*R*	*SE*	R^2	ΔR^2	*p*
Model 1			.09	.56	.01	.01[a]	.004
Income	-.04	-1.04		.01			.299
Marital Status	.06	1.46		.02			.144
Model 2			.19	.56	.04	.03[b]	< .001
Income	-.13	-2.84		.01			.005
Marital Status	.09	2.02		.02			.044
Gender	-.09	-2.12		.05			.034
Race	-.17	-4.01		.05			< .001
Model 3			.48	.50	.23	.20[c]	< .001
Income	-.08	-1.83		.01			.067
Marital Status	.11	2.71		.02			.007
Gender	-.08	-2.04		.04			.042
Race	-.11	-2.79		.04			.005
Religious Optimism	.44	12.94		.04			< .001
Model 4			.48	.50	.23	.00[d]	.594
Income	-.08	-1.82		.01			.069
Marital Status	.11	2.73		.02			.006
Gender	-.08	-2.07		.04			.039
Race	-.10	-2.71		.04			.007
Religious Optimism	.35	2.33		.16			.020
Religious Optimism by Gender Interaction	-.02	-.16		.07			.873
Religious Optimism by Race Interaction	.11	1.10		.07			.314

Note. n = 688. [a]$F(2, 685) = 2.75$, $p = .06$; [b] $F(4, 683) = 6.42$, $p < .001$; [c] $F(5, 682) = 39.86$, $p < .001$; [d] $F(7, 680) = 28.58$, $p < .001$.

As seen in Table 11, the second model (Model 2) of the hierarchical linear regression, wherein the predictor variables were income, marital status, gender, and race and the criterion variable was life satisfaction, was significant, F_{change} (2, 683) = 10.01, *p*

< .001. The significant predictor variables explained an additional 4% of the variance in the criterion variable of life satisfaction as based on the change in R^2 in this step of the model. In Model 3, all variables were significant predictors of life satisfaction. Income significantly predicted life satisfaction, β(2, 683) = -.13, *t*(2, 683) = -2.84, *p* = 005. Persons with higher incomes were more likely to report higher levels of life satisfaction. Marital status significantly predicted life satisfaction, β(2, 683) = .09, *t*(2, 683) = 2.02, *p* = .044. Individuals who were married reported higher levels of life satisfaction than individuals who never married, were divorced, or were widowed. Gender predicted life satisfaction, β(2, 683) = -.09, *t*(2, 683) = -2.12, *p* = .034: men reported higher levels of life satisfaction than did women. Race predicted life satisfaction, β(2, 683) = -.17, *t*(2, 683) = -4.01, *p* <.001; specifically, White individuals reported higher levels of life satisfaction than did Black individuals.

Table 12 presents the result of the third model (Model 3) of the hierarchical linear regression, wherein the predictor variables were income, marital status, gender, race, and religious optimism and the criterion variable life satisfaction, which was significant, F_{change} (1, 682) = 167.37, *p* < .001. In fact, Model 3 was the strongest of the four models. The significant predictor variables explained an additional 20% of the variance in the criterion variable of life satisfaction as based on the change in R^2 in this step of the model. In Model 3, all variables except income were significant predictors of life satisfaction. Marital status significantly predicted life satisfaction, β(1, 682) = .11, *t*(1, 682) = 2.71, *p* = .007. Individuals who were married reported higher levels of life satisfaction than individuals who never married, were divorced, or were widowed.

Gender predicted life satisfaction, β(1, 682) = -.08, *t*(1, 682) = -2.04, $p = .042$: men reported higher levels of life satisfaction than did women. Race predicted life satisfaction, β(1, 682) = -.10, *t*(1, 682) = -2.79, *p* = 005; specifically, White individuals reported higher levels of life satisfaction than did Black individuals. Finally, religious optimism predicted life satisfaction, β(1, 682) = .44, *t*(1, 682) = 12.94, $p < .001$. In fact, religious optimism was the most significant predictor of life satisfaction, with individuals who had higher levels of religious optimism reporting significantly higher levels of life satisfaction than individuals who had lower levels of life satisfaction. The interaction terms of gender by religious optimism and race by religious optimism were not significant.

Table 12

Hierarchical Linear Regression Models: Income, Marital Status, Gender, Race, & Religious Optimism Predicting Life Satisfaction

Variable	β	*T*	*R*	*SE*	R^2	ΔR^2	*p*
Model 3			.48	.50	.23	.20[c]	< .001
Income	-.08	-1.83		.01			.067
Marital Status	.11	2.71**		.02			.007
Gender	-.08	-2.04*		.04			.042
Race	-.11	-2.79**		.04			.005
Religious Optimism	.44	12.94***		.04			< .001

Note. n = 688. [a] *F*(5, 682) = 39.86, $p < .001$.

Summary

The purpose of this study was to examine whether the associations between religious-based constructs of religious-based relationships with others, religious

commitment, and religious optimism varied by gender and race to influence the outcomes of self-reported health, depression, and life satisfaction. Data for this study came from the Wave 2 RAHS (Krause, 2004). The Wave 2 sample size of Black and White participants who completed all questions was n = 688. The sample was predominantly female and was equivalent in distribution across race. On average, the participants' yearly income was approximately $20,000 (based on M = 4.83). Three research questions were posed in this study and all three research questions were tested via hierarchical linear regression. Prior to conducting hierarchical linear regressions, the data were examined for non-normality; the variables of religious-based relationships with others and depression were recomputed via loglinear transformations due to substantial skewness and kurtosis, indicators of non-normal distributions of scale scores.

Results from the hierarchical linear regression determined that all three religious constructs significantly predicted positive well-being outcomes. Specifically, having more religious-based relationships significantly predicted better self-reported health, having higher levels of religious commitment significantly predicted lowered depression ratings, and having higher levels of religious optimism significantly predicted higher rates of life satisfaction. However, gender and race interactions were only significant for the religious-based relationships with other variables. Women who reported having more religious-based relationships with others were more likely to report good health, $\beta(2, 680) = .34$, $t(2, 680) = 1.97$, $p = .049$. Moreover, Black individuals who reported having more religious-based relationships with others were more likely to report good health, $\beta(2, 680) = .27$, $t(2, 680) = 2.03$, $p = .043$.

In Chapter 5, I begin with an overview of the study and study results. Following the summary of results, findings are interpreted, recommendations for practice and further study are presented, and study limitations discussed. The chapter ends with a discussion of the implications for social change implications.

Chapter 5: Discussion, Conclusions, and Recommendations

The purpose of this study was to examine whether the relationship between religious based support and psychological well-being constructs among Black and White older adults aged 65 or older varied by gender and/or race. In this chapter, I discussed the theoretical framework for the study in relation to the study findings. I then, presented recommendations drawn from the study findings, followed by a discussion of the study limitations and implications for social change.

Theoretical Basis of the Study

I used the SEM, initially developed by Bronfenbrenner (1979), as the theoretical framework for this study. Mclaren and Hawe (2005) attributed the strength of the SEM to its ability to include, in a systemic way, the multiple and interacting individual and multi-level contextual factors that influence individuals' cognitions, emotions, and behaviors. SEM was developed from the previous work of a number of psychologists and sociologists. Bronfenbrenner introduced the concepts of the SEM in his ecological systems theoretical framework. Bronfenbrenner stated that the individual interacted with his or her environment on multiple levels: the microsystem level, the mesosystem level, the exosystem level, and the macrosystem level. Bronfenbrenner's ecological systems model was elaborated upon within the field of public health, most notably by McLeroy et al. (1988) in their ecological model of health behaviors, and by Stokols (1992, 1996) in his social ecology model of health promotion.

The SEM framework was an optimal guide for this study. It enabled me to examine the interactional influence between the person, the environment, and the

cognitive, emotional, and behavioral outcomes. In this study, as guided by the SEM, I hypothesized that both individual (i.e., gender, race) and contextual (i.e., religiosity) factors would directly and in interaction influence psychological well-being outcomes in a sample of Black and White older adults, aged 65 or older. By utilizing the SEM as a guide, I hoped to gain an increased understanding of how individual and contextual religiosity factors that may be related to psychological well-being outcomes among the elderly.

Analyses of psychological well-being outcomes within the context of the person, his or her environment, and the interactions between the two would require a comprehensive understanding and control of numerous constructs. This was beyond the scope of this study. Nonetheless, in this study, I included the key individual factors of gender, race, income, and marital status for examination; in addition, gender and race were examined for possible interaction with religiosity factors. The incorporation of individual factors, contextual religiosity factors, and specific interactions between the two factors provided an effective use of SEM.

Summary and Interpretation of Findings

The total sample used for this study was 688, which met the prior sample size calculation presented in Chapter 3. I designed this study in alignment with SEM: the research questions were designed to examine individual and contextual religiosity factors individually and in interaction as influencing psychological well-being outcomes, specifically, self-reported health, depression, and life satisfaction. The focus in this study was on the gender and race interactions with the religiosity factors in influencing

psychological well-being. As such, I first briefly presented the religiosity contextual and discussed individual factors that emerged as significant predictors of psychological well-being outcomes and then a more comprehensive discussion is devoted to the significant individual and environmental interaction results.

Significant Religiosity Predictors of Psychological Well-being

In this study, I found that (a) religious-based relationships with others significantly predicted self-reported health, (b) religious commitment significantly predicted depression, and (c) religious optimism significantly predicted life satisfaction. Specifically, having more religious-based relationships significantly predicted better self-reported health, having higher levels of religious commitment significantly predicted lowered depression ratings, and having higher levels of religious optimism significantly predicted higher rates of life satisfaction.

Studies where researchers examined the role of spirituality in health in adult have been indicating rather consistent relationships with levels of psychological well-being, including depression (e.g., Adams & Bezner, 2000; Moreira-Almeida, Neto, & Koenig, 2006; Pargament & Ano, 2006; Pargament, Magyar, Benore & Mahoney (2005); Pearce et al., 2003; Westgate, 1996). The literature revealed differences in both physical and mental health among elderly people in regards to social networks. Elderly people with strong social ties were found to have better physical and mental health than those who do not have a close relationship or social network (Bajekal et al., 2004; Smith et al., 2004); supporting the notion that those who have good social networks are more likely to rate

their health as positive. In general, religious groups serve as social networks for both the elderly and younger people and encourage close social ties with others.

Significant Individual Factors of Psychological Well-being

In this study, income level of participants significantly predicted self-reported health and depression; it did not, however, predict life satisfaction. In other words, participants who reported higher income levels also reported better health and lower rates of depression than participants who reported lower income levels. This relationship was not found for life satisfaction. This is also consistent with prior research studies (e.g., Herd, House, & Schoeni, 2008; McDonough & Berglund, 2003; Meer, Douglas, & Rosen, 2003; Smith, 1999; Zimmer & House, 2002), which found strong associations between income level and health in elderly adults in the United States. Results from this study support this prior research.

The lack of a significant association between income and life satisfaction in this study supports some prior research conducted with elderly adults (e.g., Easterlin, 2001; George, 2010; McBride, 2001: Yang, 2008a, 2008b), while contradicting other studies (Kahneman & Deaton, 2010; Yang, 2008a, 2008b). Kahneman and Deaton (2010), in a study of over 450,000 adults, found that life satisfaction as measured by one's evaluation of one's life was not significantly associated with income status. However, Yang (2008a, 2008b), examined the association between income and life satisfaction longitudinally and found a significant relationship between income level and happiness in life among young and middle-aged adults. In contrast, studies conducted with elderly adults in the United States (e.g., Easterlin, 2001; McBride, 2001) found that, while income level is related to

life satisfaction for young and middle-age adults, this relationship is not significant among elderly adults. Easterlin (2001) found that, over a life cycle, the average happiness of a cohort remained unchanged despite changes in financial situation.

In this study, income levels were low. On average, participants made approximately $20,000 per year and few participants reported having yearly incomes of over $80,000. It may have been that income levels were not adequate indicators of actual wealth, as participants were older than 65 and a significant number of participants were not working full-time. The income that participants did receive – in addition to supplemental federal support – may have been adequate in providing access to healthcare services and helping to reduce stressors that may have led to depression, but was not substantial (or relevant) to impact participants' overall life satisfaction.

In this study, marital status was only significantly associated with life satisfaction, with married individuals reporting higher levels of life satisfaction than individuals who never married, were divorced, or were widowed. Kim and McKenry (2002), in a study with younger, middle-aged, and older adults, found a statistically significant effect of marital status on psychological well-being. In this study, it was not clear if marital status may have had an effect on health or depression early in the lives of study participants. However, the significant relationship between being married and having higher life satisfaction confirmed the results from Bennett (2005), who found, in a study with older adults, that the psychological well-being of divorced and widowed respondents was considerably lower when compared to the married respondents.

Gender and Race Interactions with Religiosity Factors: Significant Findings

In this study, the only significant interaction effects that emerged were in regard to gender and race and the religiosity factor of religious-based relationships with others in influencing self-reported health. The coefficient effect for interaction term showed a greater effect of relationship with others on self-rated health among females. This finding is consistent with earlier research conducted with older adults that suggested that women may be more likely than men to reach out to a social network (Stark, 2002). Moreover, the coefficient effect for interaction term between race and relationship with others shows that among Black individuals there was greater effect of relationship with others on self-rated health. This result was similar to those found by Blaine and Crocker (1993) and St. George and McNamara (1984), who reported a greater positive relationship between religious variables and psychological well-being among Black respondents.

One way to explain this is that Black people tend to see religious gathering as being immersed in their own cultural experience, sharing similar religious norms and values in an environment free of prejudice which results in shared racial pride, hope, and optimism. The observed association between religiosity and psychological well-being in the elderly may be due to the willingness to develop interpersonal ties and the ability to utilize the available social support system. For this study the significant association may also be the result of the way in which the religious variables were measured. For example, the participants were asked how often someone in their congregation gives them a ride to church service, how often someone in their congregation helps with transportation to other places like the grocery store or the doctor’s office, how often

someone in their congregation helps with things that need to be done around home such as household chores or yard work. The participants' responses to these questions could be influenced by their interpersonal ties and ability to use available social support systems provided by the religious groups.

In this study, I did not found significant interaction effect in regards to gender and religious involvement in influencing psychological well-being. One way to explain this could be due to a lack of religious activities or programs capable of interacting with the psychological well-being of the elderly. It is possible that the nature of religious activity in which men and women are involved may affect their psychological well-being. For example, participation in religious services is likely to result in social integration, which results in an active social network: engaging members with each other. The lack of a significant interaction effect observed between gender, religious involvement, and psychological well-being could be attributed to the tendency for men and women to change religion or religious denomination. Loveland, Myer, and Radcliff (2005) suggested that both men and women are likely to change their religion or switch their religious affiliation when they feel psychological distress.

Another way to explain the no significant interaction effect in regards to gender and religious involvement in influencing psychological well-being is thus: McFarland (2009) reported that after retirement both men and women seek out for opportunities to volunteer in a religious organization, which offers them personal fulfillment. As they age, they become increasingly involved in these activities, which then fill the gap left by their pre-retirement career, suggesting no variation on the influence of religious involvement

on depressive symptoms. That means, the excitement of being involved in any form of service is being fulfilled by both men and women in different other ways apart from religious involvement. For example, while some women could be more involved in religious activities than the men, the men who volunteered in other local centers received same emotional fulfillment even their involvement is not in a religious setting.

This study, I found no significant interaction between race and life satisfaction. This finding could be attributed to the fact that people tend to report life satisfaction based on their total life experiences. It is possible therefore, that both elderly Blacks and Whites in this sample perceived their life as significantly stressful due to other demographic confounders not controlled in this study. Therefore, for the relationship between religious variables and psychological well-being to be considered statistically significant, other risk factors (confounders) must be considered, especially those that include demographic factors, socioeconomic status, and social stress (George, Ellison, & Larson, 2002).

Finally, Snowden (1998) reported that Black people are less willing than White people to seek help when psychologically distressed. In that regards, it is possible that Black people in this current sample were uncomfortable describing their psychological well-being as required by the study survey. Also, the current study shows that gender and race are not significantly associated with religious involvement, religious optimism, or psychological well-being. This finding could be attributed to reporting bias, since the measures of psychological well-being used in this study were self-reported.

Recommendations for Practice

The purpose of this study was to provide important information on the different ways religiosity significantly affects psychological well-being among different groups of the elderly. It also provided insight into and better understanding of some of the variables that influence the relationship between religious social support and psychological well-being among the elderly. The result of this study can enhance understanding of how social structures, processes, and the social environment could influence the psychological well-being of the elderly.

Conner et al. (2010) found that Black people are more likely to be skeptical of medical treatment and reluctant to seek medical help for depression. Also, African Americans are more likely to exhibit negative attitudes towards people suffering from depression (Conner et al., 2010). In this study, I found that the association between relationships with others and self-rated health was strongest for Black participants, supporting the design of intervention programs that target specific racial groups on issues related to health. The findings of this study provides a platform for designing and implementing programs that will enhance the perceived health of the elderly through activities that encourage social networking and interpersonal relationships among members.

It is imperative that public health professionals understand the impact of different confounders on the association between gender and race on psychological well-being. This will provide public health professionals with the knowledge they need to address certain community health issues. Understanding the different facets of association

between different racial and gender groups will enhance the design of various intervention programs that target specific needs (depressive symptoms, life satisfaction, self-rated health, etc.) and address specific situations. For example, intervention programs geared towards enhanced social networks and improved relationships with others might improve the perceived health of women and Black elderly more than other groups.

Conner et al. (2010) stated that elderly Black people are less likely to speak openly about psychological well-being, including mental health problems. However, considering their high rate of religious participation, a program intended to address issues of psychological well-being among elderly Blacks might be more effectively addressed if presented through religious leaders, religious gatherings, and other religious social networks. Since it was suggested that some members of certain racial groups feel more comfortable discussing issues of mental health with their religious leaders than their physicians, it is recommended that religious leaders consistently provide for the psychological well-being need of their members themselves or make referrals and encourage mental health treatment.

Based on the findings of this study, collaboration between clinicians and religious leaders is recommended to address issues related to the psychological well-being of the elderly. Education and training of religious leaders can be useful in reducing the burden of depression among the aging population, especially among racial groups with higher levels of religious participation and religious social interaction.

Recommendations for Future Study

The study showed a positive statistically significant relationship between religious relationships with others and perceived self-rated health. The relationship also varies by both race and gender, especially when effect of income and marital status are controlled. Future studies are needed to examine how relationships with others are refined and whether interaction is affected by size, gender, marital status, religious denomination, or socioeconomic status of social network. Also, more extensive studies are needed to explore the associations between other religious variables such as private religious practice, prayer, gratitude to God, spiritual connectedness, communication with clergy, and organizational religiousness and their association with the psychological well-being of different racial groups and genders.

Finally, future studies that will focus on other demographic and socioeconomic covariates not explored in this study are necessary for a better understanding of variations by gender and race in the association between religious social relationship and psychological well-being. The RAHS dataset provided a sample collected from only elderly Black and White respondents. Future studies should examine other racial/ethnic groups.

Limitations of the Study

A total sample size of 688 from wave 2 of the RAHS survey was used for this analysis. The study sample size was sufficient to examine the hypotheses. Data used for this study were collected from only elderly White and elderly Black respondents. A limitation of this study data was the fact that the information gathered was limited to

Christians, former Christians, and those who were never affiliated with any faith-based religious organization during their lifetimes. This inclusion criterion created a limiting barrier to this data set in terms of generalizability, as the findings may not apply to the elderly in difference religious contexts.

Implications for Social Change

Much of the previous literature that examined religiosity and psychological well-being focused on the relationship between religious variables and psychological well-being among the elderly, but failed to examine variations by race and/or gender on these statistically significant associations. Examining variations by race and gender on the relationship between religious relationships with others and self-rated health among the elderly is essential to the successful design of therapeutic intervention programs that are socially and culturally appropriate for specific races and genders. Counselors working with different groups (different genders and races) of religiously inclined clients can use the findings from this study to develop and implement religious-based interventions specific to their clients.

Findings from this study show a sizeable significant variation by gender and race on the association between religious social relationships with others and self-rated health. This will provide public health professional with tools that will aid in custom-designing community health interventions that are evidence-based to improve the psychological well-being of members of the community, especially those living in communities with low social-economic status. It was determined that women who reported having more

religious-based relationships with others were more likely than men with religious-based relationships to report good self-rated health.

Also, Black respondents who reported having more religious-based relationships with others were most likely to report good self-rated health. This information could lead a multi-pronged approach between religious leaders and public health professionals that targets specific categories or groups of individual. For example, religious leaders would be able to develop programs that will address the mental health and financial needs of their members using the findings from this study and public health professionals and counselors can develop programs that will address the psychological well-being and socio-economic needs of the whole population. It will benefit the elderly more if members of the religious community consider gender and racial differences when developing programs or religious activities that engage both male and females, help foster relationships with others, and focus on increasing social networks. As another implication for social change, the findings of this study validate the need for collaboration between clinicians and clergy on issues affecting the psychological well-being of the elderly, particularly Blacks.

Conclusion

This study has shown that the association between religious-based relationships with others and perceived self-rated health among the elderly (Black and White, aged 65 or older) varies by both race and gender. Factors such as income and marital status influenced the association between religious variable-relationships with others and self-rated health. This study contributes to the growing literature that has shown that religion

has a significant positive impact on the psychological well-being of the elderly. More importantly it provides valuable information on how variations in gender and race impact the relationship between religious-based relationships with others and self-rated health.

Finally, the findings from this study can aid religious leaders and public health practitioners in developing programs and policies to improve the perception of health among the elderly.

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Appendix A: Religion Wave-2 19894 (Harris Interactive Inc.)

SECTION 200: INTRODUCTION

BASE: ALL RESPONDENTS

Q210 Hello, I am ______________________________ from Harris Interactive Inc., the national survey research firm in New York. About three years ago, we spoke with you about religion and your health. We would like to talk with you again. I would like to begin by reading a statement that reviews some important facts about the project. It is important all participants have a good understanding of exactly what the study is about and how their participation will be helpful to the project.

The purpose of this study is to find out how people like you think about religion. We want to identify the most important components of a religious life. We'll also be asking you some general questions about recent life experiences you may have had as well as questions about your health and sense of well-being. The questions that I will ask are just like the ones you were asked last time. Before we start I want to emphasize three points: 1) the information you provide will be kept strictly confidential. 2) Your participation is entirely voluntarily. 3) should we come to a topic you do not want to discuss or a question you do not want to answer, just let me know and I will move on to the next topic. You may, if you wish, terminate your participation in the study at any time. The information you provided will be summarized with the information given by others and will be used for statistical purposes only. No names will be used in any report written from the data. Before we begin, do you have any questions?

Would you please repeat back to me what I just told you about participating in the study? Are you willing to participate in this study?

Case ID: (301,306)

Card #: (307,308) 03

FROM OBSERVATION: Respondent sex

1. -------Male

2. --------Female

Extracted from: Harris Interactive Inc. Inc. National Survey of Religion, Aging and Health

Appendix B: Subset questions from the 2004 Religion, Aging, and Health Survey (RAHS 2004) questionnaire

Study Variable	Question from 2004 RAHS Survey	Coding category	RAHS Quest. #
Relationship with others	How often does someone in your congregation give you a ride to church service? How often does someone in your congregation provide you with transportation to other places, like the grocery store or the doctor's office? How often does someone in your congregation help you with things that need to be done around your home, such as chores or yard work? How often does someone in your congregation help out when either you or a member of your family are ill? How satisfied are you with this type of help?	1 = Very often 2 = Fairly often 3 = Once a while 4 = Never 5 = Not applicable 7 = No answer 8 = Not sure 9 = Decline to answer	Q1600
Religious involvement/ commitment	My faith shapes how I think and set each and every day. I try hard to carry my religious beliefs over into my other dealings in life. My religious beliefs are what lie behind my whole approach to life.	1 = Strongly agree 2 = Agree 3 = Disagree 4 = Strongly disagree 7 = No answer 8 = Not sure 9 = Decline to answer	Q4000

Hope/Optimism	I always look on the bright side of things. I am optimistic about my future in uncertain times. I usually expect the best. I feel confident the rest of my life will turn out well.	1 = Strongly agree 2 = Agree 3 = Disagree 4 = Strongly disagree 7 = No answer 8 = Not sure 9 = Decline to answer	Q6005
Religious meaning	God put me in this life for a purpose. God has a reason for everything that happens to me. My faith gives me a sense of direction in my life. My faith helps me better understand myself. My faith helps me make sense of major world events such as wars, natural disaster, and famine.	1 = Strongly agree 2 = Agree 3 = Disagree 4 = Strongly disagree 7 = No answer 8 = Not sure 9 = Decline to answer	Q1202

Private religious practices	When you are at home, how often do you read the Bible? When you are home, how often do you read religious literature other than the Bible? How often do you read religious newsletters, religious magazines, or church bulletins when you are at home?	1 = Several times a day 2 = Once a day 3 = A few times a week 4 = Once a week 5 = A few times a month 6 = Once a month 7 = Less than once a month 8 = Never 9 = Not sure 10 = Decline to answer	Q1900
Self-rated Health	How would you rate your overall health at the present time? Would you say your health is excellent, good, fair, or poor? Would you say your health is better, about same, or worse than most people your age? Do you think your health is better, about the same, or worse than it was a year ago?	1 = Excellent 2 = Good 3 = Fair 4 = Poor 7 = No Answer 8 = Not sure 9 = Decline to answer	Q400

Depressive Symptoms	I felt I could not shake off the blues even with the help of my family and friends. I felt depressed. I had a crying spell. I felt sad. I did not feel like eating, my appetite was poor. My sleep was restless. I could not get going. I felt that everything I did was an effort.	1 = Rarely or none of the time 2 = Some or a little of the time 3 = Occasionally or a moderate amount of the time 4 = Most of or all of the time 7 = No answer 8 = Not sure 9 = Decline to answer	Q5000
Life satisfaction	These are the best years of my life. As I look back on my life, I am fairly well satisfied. I would not change the past even if I could.	1 = Strongly agree 2 = Agree 3 = Disagree 4 = Strongly disagree 7 = No answer 8 = Not sure 9 = Decline to answer	Q1802 Q1803 Q1804

Appendix C: Data Access Permission

Subject: ICPRS Data Set
Date: Wed, Oct 20, 2010 08:59 AM CDT
From: Arun Mathurarun@umich.edu
To: Eugene Uche<Eugene.uche@waldenu.edu>

Good Morning Eugene,

The dataset in our collection titled "Religion, Aging, and Health Survey, 2001, 2004 [United States]" is available for download by the general public. ICPSR reviewed and determined prior to release of the data that it does not contain information that would allow for the identification of individuals. As long as you adhere to the Terms of Use you are free to use this data in your research and publications – indeed, we want you to do so. I include the Terms for your IRB to review.

ICPSR adheres to the principles of the Data Seal of Approval, which, in part, require the data consumer to comply with access regulations imposed both by law and by the data repository, and to conform to codes of conduct that are generally accepted in higher education and scientific research for the exchange of knowledge and information. These data are distributed under the following terms of use, which are governed by ICPSR. By continuing past this point to the data retrieval process, you signify your agreement to comply with the requirements stated below:

Privacy of RESEARCH SUBJECTS
Any intentional identification of a RESEARCH SUBJECT (whether an individual or an organization) or unauthorized disclosure of his or her confidential information violates the PROMISE OF CONFIDENTIALITY given to the providers of the information.

Therefore, users of data agree:
To use these datasets solely for research or statistical purposes and not for investigation of specific RESEARCH SUBJECTS, except when identification is authorized in writing by ICPSR (netmail@icpsr.umich.edu)

To make no use of the identity of any RESEARCH SUBJECT discovered inadvertently, and to advise ICPSR of any such discovery (netmail@icpsr.umich.edu)

Redistribution of Data
You agree not to redistribute data or other materials without the written agreement of ICPSR, unless:

You serve as the OFFICIAL or DESIGNATED REPRESENTATIVE at an ICPSR MEMBER INSTITUTION and are assisting AUTHORIZED USERS with obtaining data,

or

You are collaborating with other AUTHORIZED USERS to analyze the data for research or instructional purposes.

When sharing data or other materials in these approved ways, you must include all accompanying files with the data, including terms of use. More information on permission to redistribute data can be found on the ICPSR Web site.

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You agree to reference the recommended bibliographic citation in any publication that employs resources provided by ICPSR. Authors of publications based on ICPSR data are required to send citations of their published works to ICPSR for inclusion in a database of related publications (bibliography@icpsr.umich.edu).

Disclaimer
You acknowledge that the original collector of the data, ICPSR, and the relevant funding agency bear no responsibility for use of the data or for interpretations or inferences based upon such uses.

Best regards,

Arun Mathur
ICPSR
User Support and Membership Services
Voice: 734.647.2200
Fax: 734.647.8200

Curriculum Vitae

Objective

Seeking a Postdoctoral position where I could utilize my academics and work experiences to conduct epidemiological research that would improve surveillance of infectious disease, enhance patient and healthcare worker safety.

SKILLS / KNOWLEDGE

- Experience overseeing organizations environmental programs to protect environment, public health, operations, and financial resources.
- Utilize the techniques, skills and modern technology tools necessary for professional practice in occupational safety, infection control, environmental and public health
- Communicate effectively in writing as appropriate for the needs of the audience
- Demonstrated knowledge of applied mathematics, science and related topics relevant to field of health, safety and environment
- Demonstrate knowledge of conducting research study: write proposal, collect and analyse data, evaluate organizational and program problems and recommend solution that will increase efficiency and effectiveness.
- Use scientific rules and methods to solve problem
- Ability to formulate plan of action
- Analytical, critical thinking, and problem solving capability
- Flexible, and ability to adapt quickly
- Enjoy challenges and working as part of the team.
- Proficiency in Microsoft office package and computer data analysis using MS Excel, SPSS and EpiInfo
- Uses logic and reasoning to identify the strengths and weaknesses of alternative solutions, conclusions or approaches to problem.

Education

- M. Sc. Degree; Occupational Safety and Health/Environmental Management, Columbia Southern University, Orange County, Alabama, 2006-2008
- Bachelor degree, Applied Chemistry, University of UYO, UYO, Nigeria, 1995-2000
- Department of Veteran Affair Technical Career Field program, 2009 -2010
- Certificate of Completion: American Laundry and Linen College-2010
- Certificate of Completion: Pest Management Technology-Purdue University, 2009-2010

Work Experience

Assistant Hospital Housekeeping Officer GS-12

Department of Veteran Affairs-August 2009 till Present

Responsible for 231 FTEE, and maintain oversight on a service budget of more than 5 Million dollars; analyzed information from variety of sources to identify issues, isolate problem and develop solutions; developed and implemented standards for cleanliness and sanitation, including frequency of cleaning; methods, procedures and safety precaution to be followed; determined, selected cleaning chemical and cleaning supplies by analyzing the Material Safety Data Sheet; planed, developed and implemented procedures, policies, and practices that met requirements of the Occupational Safety and Health Administration (OSHA), Joint Commission on Accreditation of Hospital Organizations (JCAHO) American Hospital Organization (AHA), Environmental Protection Agency (EPA) and other agencies; ensured that effective procedures are implemented for minimizing patient, employee or visitors exposure to infectious disease; evaluated waste management plan and made changes to ensure compliance with hazardous/medical waste disposal and storage regulations; and ensure compliance with medical center policies; coordinated and supervise several housekeeping functions such as textile management, sanitations, and discharge bed cleaning; worked with the Housekeeping officer in determining short-range, intermediate, and long-ranged goals for our service; assisted the Housekeeping officer in determining our service budget plan, resource needs and training needs; represented my service in different committee meetings, director's staff meetings, and service meeting; served as Contracting Officer Technical Representative for seven different contracts.

Environmental Field Services Technician
US Army- Fort Bliss, Texas- **November** 2005 to 2009
Analyze petroleum samples for contaminants and standards, using laboratory apparatus, report findings in accordance with ASTM test standard; perform chemical inventory of petroleum laboratory and keep up-to-date records. Perform audit and inspection of facilities and laboratory; apply fire prevention and safety control procedures in handling volatile petroleum products; ensure compliance with OSHA regulatory safety and health practices; act as the Unit Safety officer, assuring unit and personnel compliance to the Department of Defense safety requirement and other state environmental and safety standards; make recommendations for reclamation and disposition of petroleum products; educate personnel on pollution prevention creating soldiers' awareness to environmental and health issues; evaluate work environment within assigned post, conducting office walkthrough to ensure compliance with Army safety standard.

Training

- Certificate of Completion: American Laundry and Linen College-2010
- Certificate of Completion: Pest Management Technology-Purdue University, 2009-2010
- Certificate, Environmental Health Tracking Course, EHT101, Center for Disease Control / NEHA, November 2008
- Certificate, Hazardous Material Handling Course, U.S. Army, February 2008.

- Certificate, Petroleum Laboratory Specialist, Seaman's Petroleum Training Institute, Fort Lee, VA, February-April 2006

Professional Association

- American Public Health Association (APHA)
- National Environmental Health Association (NEHA)