Religiosity and Depression in the United States Older Adult Population: An Analysis of the Influence of Type of Religiosity, Race, and Gender

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Thesis

Religiosity and Depression in the United States Older Adult Population: An Analysis of the Influence of Type of Religiosity, Race, and Gender

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Abstract

The purpose of this study was to analyze the relationship between the two types of religiosity (organizational and nonorganizational) and depression in the United States older adult population. This study is rooted in psychological, sociological, and gerontological research dating back to the early 1950s with the pioneering work of Moberg (1953a). The study used information obtained from the Religion, Aging, and Health Survey (Krause, 2001); the final sample size consisted of 1,370 participants. Results show limited but significant efficacy of both organizational and nonorganizational religiosity, gender and race against depression. This project supports the already abundant literature showing that women have higher levels of depression than men, and African Americans report more depression than Caucasians, but this racial difference may be mitigated by attending religious services.

Introduction

In the year 2011 the baby boomer cohort, Americans who were born between 1946 and 1964, began to turn 65 (Jacobsen, Kent, Lee, & Mather, 2011). Currently, there are 40 million individuals who are 65 years of age and older, making up 13% of the total population of the United States (Jacobsen et al., 2011). This number is expected to increase to over 89 million people, approximately 20% of the population by 2050 (Jacobsen et al., 2011). The majority of this increase will occur by 2030 as the last of the baby boomers reach age 65 (Jacobsen et al., 2011).

Within this large and increasing percentage of the population depression affects a large number of older adults. The National Institute of Mental Health (NIMH) (2007) estimates that over 2 million people 65 years of age and older have major depression, with another 5 million having subsyndromal depression. Individuals suffering from subsyndromal depression have symptoms that fall short of meeting the full diagnostic criteria for major depression, these individuals are at an increased risk of developing major depression (NIMH, 2007). Research shows that nearly 5% of the older adult population is suffering from depression; this number rising to 15% in community-dwelling older adults (Fiske, Wetherell, & Gatz, 2009). In a study using data from the Health and Retirement Study researchers found that 14.6% of Caucasian older adults suffered from significant depressive symptoms (Zivin et al., 2010).

Depression in later life is a major public concern because of how common it is in later life, the negative health outcomes associated with it, the fact that older adults are at an increased risk of being stricken with the disorder, and its association with suicide. The percentages of how common depression is in this population were discussed in the previous paragraph so the negative health outcomes, the risk of being affected by this disorder, and the association between

depression and suicide will be discussed in the following sections.

Depression is associated with a number of different negative health outcomes. This mental disorder is one that is commonly undetected, undiagnosed, untreated, or undertreated (Unützer, 2002; Givens et al., 2006; Crystal, Sambamoorthi, Walkup, & Akincigil, 2003). Depression is associated with declines in quality of life, positive attitudes about aging, and functional daily living skills (Chachamovich, Fleck, Laidlaw, & Power, 2008). It is associated with worse outcomes after acute medical events, and increased mortality of elderly patients suffering from it (Crystal et al., 2003; Blazer, Hybels, Simonsick, & Hanlon, 2000). According to Fröjdh, Håkansson, Karlsson, and Molarius (2003) the outcome for older people suffering from depression is poor with mortality of older adults suffering from depression for 2-6 years is between 21% and 48% (Pulska, Pahkala, Laippala, & Kivela, 1999). The mortality rate for elderly people suffering from major depression is estimated to be 2-3 times the rate of non-depressed elderly people (Pulska et al., 1999).

The Centers for Disease Control and Prevention (CDC) found that older adults are at an increased risk of developing depression (2009). Older adults are at an increased risk of developing this disorder because depression is most common in individuals suffering from multiple chronic diseases or conditions (CDC, 2009). In the older adult population 80% of people have at least one chronic condition, and 50% of older adults have two or more chronic conditions (CDC, 2009). This increased risk of developing depression may help explain why more than half the cases of depression in older adults represent the first onset of the disease (Fiske et al., 2009).

Depression is also a problem because it is the most common diagnosis in elderly persons who commit suicide (Garand, Mitchell, Dietrick, Hijjawi, & Pan, 2006). Persons 65 years of age

or older currently represent 13% of the United States population, yet they account for 18% of all suicides (Arias, Anderson, Kung, Murphy, & Kochanek, 2003). Suicide is the 13th leading cause of death in individuals age 65 years or older and this segment of the population also has the highest risk for completed suicide (NIMH, 2007). Caucasian men 85 years of age and older have the highest rate of completed suicide in the United State population (44.52 per 100,000); this rate is almost four times that of the national average which is (11.84 per 100,000) (CDC, 2008).

As people age they commonly deal with challenges related to confronting their own death, declines in physical health, coping with the loss of others, changes in family and social networks, adjustment to retirement, and finding meaning and purpose in life (Koenig, 2006). Due to the existential nature (e.g., loss of loved ones, coping with death, confronting their own mortality) of a number of these challenges faced in older adulthood, religiosity may play an increasingly significant role during this time in an individual's life (Turesky & Schultz, 2010). Religious life and participation in religious activities becomes increasingly important to Americans as they age (Dillon & Wink, 2007). In a report by the Pew Research Center's (PRC) Forum on Religion & Public Life (2008) it was found that 92% of adults age 65 and older report a formal religious affiliation. This number illustrates how important religion is to a majority of older Americans.

Given the prevalence of depression in the older adult population and the association depression has with negative health outcomes it is important that we understand any factor that may influence depression rates in the elderly. This already large percentage of the United States population over the age of 65 is going to increase dramatically in the coming years and any knowledge that can be obtained regarding depression in the older adult population will be invaluable for policy planning, healthcare, and meeting the needs of this portion of the

population.

The current project was created to gain a better understanding of the relationship between religion and depression in the United States older adult population; a large amount of academic writing and research has analyzed and discussed this relationship (Koenig, McCullough, & Larson, 2001; Roff et al., 2004; Levin & Chatters, 2008). More research needs to be conducted to clarify what aspects of religiosity are associated with lower levels of depression in older adults and to add support to the prior literature. This project seeks to determine the influence, if any, the variables: type of religiosity, race, and gender has on this relationship. Numerous studies involving the analysis of the relationship between religion and depression in the older adult population fail to implement a theoretical base or rationale for their hypotheses. This study will differentiate itself from a majority of the previous literature on the topic by making use of multiple theories and rationales to support its hypotheses. This study will also have the benefit of using a large nationally representative sample for statistical analyses. This sample also oversampled African American older adults allowing the ability to better identify racial differences in the influence of religiosity on depression. While Hispanic/Latino Americans have recently overtaken African Americans as the largest minority group in the United States this project will look at differences in the influence of religion on depression in Caucasian and African Americans. African Americans were chosen instead of Hispanic/Latino Americans because of the unique role the church has played in the lives of the African American community. This role of the church in the lives of African Americans will be discussed in more detail in the Theory and Rationale section. In the following section a short review of why the relationship between religion and depression in older adults is an important topic of study will take place, followed by a statement of the research question.

The Problem

Religion and Depression

Numerous studies have analyzed and cited a relationship between religion and depression in the older adult population (Roff et al., 2004; Koenig, 2007; McFarland, 2009). An increasing number of research studies have documented positive effects of religious belief and behavior on mental health (Thoresen & Harris, 2002; Roff et al., 2004; Koenig et al., 2001; Koenig, 2007). Koenig et al. (2001) reviewed over 100 quantitative studies that examined the relationship between religion and depression. In this review were 93 observational studies, two-thirds of which found significantly lower rates of depression or fewer depressive symptoms among the people with higher levels of religiosity (Koenig et al., 2001). Among 34 studies that did not find a negative relationship between religion and depression, only 4 found that high levels of religiosity were associated with significantly more depression (Koenig et al., 2001). Results from a meta-analysis of a large number of independent investigations revealed that religiosity is modestly but reliably associated with depressive symptoms; this relationship was robust and appeared across different ethnic, gender, and age groups (Smith, McCullough, & Poll, 2003).

Organizational and Nonorganizational Religiosity

The evaluation of the significant relationship between religiosity and depression has been complicated and at the same time strengthened by the identification and application of various dimensions of religiosity (Thoresen & Harris, 2002). Early in the history of gerontological research on religion Mindel and Vaughan (1978) put forth a distinction between organizational and nonorganizational aspects of religiosity. Organizational religiosity refers to participation in public religious activities (Wink, Dillon, & Larsen, 2005). Nonorganizational religiosity refers to participation in private religious activities (Wink et al., 2005). They discovered that although

very old adults (75 years old and over) may decrease their level of organizational religious participation due to a number of different factors (e.g. limited functional status, chronic illness), they remain highly invested in religion which is reflected in their high levels of nonorganizational religious activities and behaviors (Mindel & Vaughan, 1978). Currently among gerontologists it is practice to view the construct of religiosity as including behaviors that reflect organizational and nonorganizational religious participation, as well as subjective attitudes (Taylor, Chatters, & Joe, 2011).

Research on how levels of organizational and nonorganizational religiosity influence depression have found a number of varying results. A large number of studies have found that higher levels of organizational religiosity were associated with lower levels of depression (Chatters et al., 2008; Koenig at al., 2001; Parker, Klemmack, Koenig, Baker, & Allman, 2003; Strawbridge, Shema, Cohen, Roberts, & Kaplan, 1998; Koenig, 2007; Norton et al., 2006; McCullough & Larson, 1999). Results regarding the relationship between nonorganizational religiosity and depression have not been as clear in the literature as the results regarding the relationship between organizational religiosity and depression (Koenig at al., 2001). A number of studies of found that nonorganizational religiosity is associated with lower levels of depression (Kendler & Gardner, 1997; Koenig, 2007) while various other studies have found no significant relationship between nonorganizational religiosity and depression (Chatters et al., 2008; Parker et al., 2003; Strawbridge et al., 1998).

Race

Research has shown that there are a number of racial differences in levels of religiosity and importance of religion in older adults in the United States. A multitude of research studies have found that African American older adults are more religious than Caucasian older adults

(Levin, Taylor, & Chatters, 1994; Taylor et al., 2011; Taylor, Thornton, & Chatters 1987; Taylor, Chatters, Jayakody, & Levin, 1996). African American adults have been found to have higher levels of religious involvement across various measures (Levin, Chatters, & Taylor, 2005; Taylor et al., 1996). Research has also shown that African Americans are more likely to report that religion is very important in their lives (Taylor et al., 1996).

The literature concerned with comparing the prevalence of depression and depressive symptoms among older African American and Caucasian adults has shown mixed results (Roff et al., 2004). A study found that 23% of older African American adults met criteria for at least one Diagnostic and Statistical Manual of Mental Disorders, Fourth Edition (DSM-IV) lifetime disorder (Ford et al., 2007). Research has also found that 14.6% of Caucasian older adults in the United States had four or more significant depressive symptoms (Zivin et al., 2010).

Gender

Literature has shown that there are certain differences in the relationship between religion and depression when the variable gender is taken into account. Research has identified that depression and depressive symptoms are more prevalent in women than in men (Kockler & Heun, 2002; Norton et al., 2008; Norton et al., 2006). The gender difference in depression and depressive symptoms has been found in younger (Koenig, 2001) and older populations (Kockler & Heun, 2002; Norton et al., 2008; Norton et al., 2006).

Research has also shown that women are more likely to attend church than men (Ploch & Hastings, 1994; Roff et al., 2004; Norton et al., 2006; McFarland, 2009). Studies have also found that women are consistently more religious than their male counterparts (Levin et al., 1994; McFarland, 2009). A number of research articles regarding the relationship between gender and religion have attributed higher levels of religious involvement in women as a result

of gender socialization (Beit-Hallahmi & Argyle, 1997; McFarland, 2009).

Research Question

This study will analyze the relationship between the two types of religiosity (organizational and nonorganizational) and depression in the United States older adult population. Specifically this project seeks to determine if there are any significant differences in the influence of organizational and nonorganizationl religiosity on depressive symptoms in older adults. The effects of the variables gender and race will also be assessed as they have been found to be significantly linked to depression, religion, and/or the religion-depression relationship. Based on prior research it is thought that gender and race act as a moderator in the relationship between religion and depression. Moderators "address 'when' or 'for whom' a variable most strongly predicts or causes an outcome variable" (Frazier, Tix, & Barron, 2004, p. 116). Moderator variables influence the strength or direction between a predictor variable and an outcome (Frazier et al., 2004). Based on an extensive review of literature it is believed men will benefit more from higher levels of organizational religiosity (in terms of lower levels of depression) and African Americans will have higher levels of both types of religiosity resulting in lower levels of depression than their Caucasian counterparts. The following paragraphs will encompass a detailed review of the literature pertinent to the research question.

Review of Literature

Historical Perspective

In this section the history of religion in the social sciences will be briefly discussed, focusing on research concerning religion and health in the older adult population. Researchers and theorists in the fields of sociology (Durkheim, 1897/1979) and psychology (Leuba, 1896) have been interested in studying religion for over one hundred years. Research regarding the

relationship between religion and health goes back at least nearly six decades to the pioneering work of Moberg (1953a). Despite this lengthy history of academic interest in the influence of religion on health and mental health, it has only been in the last few decades that systematic, methodologically sound research surrounding this relationship has become more ubiquitous (Koenig et al., 2001).

The first systematic endeavor within the field of gerontology to research the impact of religion on health and well-being was undertaken by Moberg in the early 1950s (Levin & Chatters, 2008; Krause, 2011). This research was based on findings from Moberg's dissertation which focused on older adults living within the Twin Cities area (Moberg, 1953b). The set of papers Moberg (1953a, 1953b, 1953c) published based off of his dissertation started the academic study of religion and aging and "essentially pioneered and defined empirical research in social gerontology" (Levin & Chatters, 2008, p. 155). Levin and Chatters (2008) found that "Moberg was way ahead of his time; nothing as sophisticated or programmatic appeared on the topic of religion and aging for another 30 years" (p. 155).

At the beginning of the 1980s, thirty years after the pioneering work of Moberg, more sophisticated literature concerning the relationship between religion, health, and aging began to surface in academic journals (Levin & Chatters, 2008). Literature during this time period was programmatic, contained more advanced methodology than previous literature, and involved minority populations (Levin & Chatters, 2008). The earliest attempts to create programs of empirical research focused on religion and aging were the works of Taylor and Chatters (1986) on older African Americans and the research of Levin and Markides (1985) on older Mexican Americans. During this time period a number of the current top researchers in the field made their first contributions to the literature. These researchers include: Idler (1987), who first

proposed a group of mediating factors in the relationship between religion and depression that are used heavily in current research, Ainlay and Smith (1984), Krause and Tran (1989), (Koenig, Moberg, & Kvale, 1988) who has conducted some of the most significant clinical research on the relationship between religion and health (Levin & Chatters, 2008). Research during the 1980s became "programmatic and theory-driven, but remained marginal for gerontology" (Levin & Chatters, 2008, p. 157).

During the 1990s research in this area expanded to the point that it can "be reasonably stated that a full-blown 'field' emerged" (Levin & Chatters, 2008, p. 158). The National Institutes of Health and The National Institute on Aging began to recognize the field of religion and aging and for the first time, in 1990, by funding a research project on religion and health (Levin, 1994; Levin & Chatters, 2008). Koenig continued to lead the way in religious research in academic medicine (Levin & Chatters, 2008). Numerous significant publications on the topic of religion and aging were first published during the 1990s including, but not limited to: *Religion in Aging and Health: Theoretical Foundations and Methodological Frontiers* (Levin, 1994), *Aging, Spirituality, and Religion: A Handbook* (Kimble, McFadden, Ellor, & Seeber, 1995), and chapters in a number of other important publications.

Currently, empirical research on religion, aging, and health has become a pervasive topic in the field of gerontology. In the *Handbook of Religion and Health* Koenig et al. (2001) discovered that by the turn of century over 1,600 scholarly articles had been published on the subject of religion and health, of these 1,200 were empirical research projects. These numbers refer to religion and health studies generally, the majority either involved older adults or analyzed changes or differences across lifespan cohorts thus these studies can be typified as gerontological (Koenig et al., 2001). Research focused on studying and analyzing the

relationship between religion and health has become completely and successfully incorporated into the mainstream research of gerontology (Levin & Chatters, 2008). The study of this relationship currently represents one of the "largest and most flourishing areas of empirical research for social, behavioral, and health scientists in the entire aging field" (Levin & Chatters, 2008, p. 159). Although this field is flourishing more research is needed to gain a better understanding of the multiple variables that influence the relationship between religion and depression.

Religion

In defining religion there is "much controversy and little agreement" (Koenig et al., 2001, p. 23). The broad definition of religion "is generally agreed on and involves beliefs, practices, and rituals related to the sacred" (Koenig, 2009, p. 284). Religion is often organized and practiced within the community setting, but religion is also practiced by an individual in a private setting. Principal to the definition of religion is that it is grounded in an instituted tradition that emerges out of a congregation of people who share beliefs, rituals, and practices pertaining to the sacred (Koenig, 2009). For the purposes of this study religion will be split into two components: organizational religiosity and non organizational religiosity. The most common measure of religiosity is self-reported attendance at religious services (Hall, Meador, & Koenig, 2008). This question of attendance is most often referred to as a measure of organizational religiousness or religiosity which concerns participation in institutional worship and involves a social component (Hall et al., 2008). Private religious activities are also often measured in academic literature; this measurement of private religious activities is often referred to as nonorganizational religiosity (McFarland, 2009).

Gender and religion.

Research findings illustrate that older women are more likely than older men to be church attendees (Ploch & Hastings, 1994; Roff et al., 2004; Norton et al., 2006; McFarland, 2009). Numerous research studies have found women to be consistently more religious than their male counterparts (Levin et al., 1994; McFarland, 2009). In a study analyzing a nationally representative sample of older adults it was found that older women were more religious in both organizational and nonorganizational components of religion than older men were.

Research regarding religion and gender has attributed higher levels of religious involvement in women as a result of gender socialization (Beit-Hallahmi & Argyle, 1997; McFarland, 2009). Coltrane (1998) stated that:

> The most important insight from gender socialization research is that because boys and girls are treated differently and put into different learning environments, they develop different needs, wants, desires, skills, and temperaments; in short they become different types of people – men and women – who hardly question why they are different or how they ended up that way. (p. 114)

The concept of gender socialization asserts that from a young age men are socialized to be independent, competitive, and aggressive, while women are socialized to be nurturing, obedient, and social (Coltrane, 1998).

These gender socialized roles continue on into adulthood, especially in religious settings (McFarland, 2009). Older men are disproportionately able to acquire roles in religious venues that convey social status (McFarland, 2009). The opposite is true for women as they obtain positions domestic and caregiving positions with little social status (McFarland, 2009). These roles often consist caring for children, cooking, and cleaning. Researchers Beit-Hallahmi and

Argyle (1997) contend that religion is more likely to draw women as members because a number of the qualities valued in religion are considered feminine traits, including the nurturing of other persons and obedience to God.

Race and religion.

A number of research projects and books have noted that African Americans are more religiously inclined than their Caucasian counterparts (Levin, Taylor, & Chatters, 1994; Taylor et al., 2011; Taylor et al., 1987; Taylor, Chatters, & Levin, 2004). Researchers examined racial (African American-Caucasian) differences in religious participation using information from four national surveys and found that across all measures and surveys, older African American adults had higher levels of religious involvement than older Caucasian adults (Levin et al., 1994). These researchers also discovered that African American older adults had higher levels of nonorganizational religiosity than older Caucasian adults (Levin et al., 1994). Older African American women have been found to have higher levels of religious involvement than older African American men (Taylor et al., 2011).

Not only has research shown that African American older adults are more religious than Caucasian older adults, researchers have reported that African Americans are more likely to state that religion is very important in their lives (Taylor et al., 1996). These researchers found that the importance of religion in the lives of African Americans starts at a young age as 45.3% of African American high school seniors in their project stated that religion was important in their lives, compared to only 21.3% of Caucasian high school seniors (Taylor et al., 1996). These percentages suggest racial differences in religious levels began at an early age and continue throughout the lifespan.

African American adults have been found to have higher levels of involvement across

various religious measures (Levin, Chatters, & Taylor, 2005; Taylor et al., 1996). African Americans attend religious services and activities more frequently than Caucasians (Nooney & Woodrum, 2002; Taylor et al., 1996). African Americans also pray daily at higher rates than their Caucasian older adults and have been found to have stronger feeling about their religious beliefs (Nooney & Woodrum, 2002). A research project found that African Americans read religious materials and watch religious television programs more often than Caucasians (Taylor et al., 1996).

Depression

Self-reported depression vs. clinical depression.

A large number of studies analyzing the relationship between religion and depression in older adults have relied on self-reports of depressive symptoms instead of clinical evaluation (Norton et al., 2006; McFarland, 2009; Krause, 2009; Keyes & Reitzes, 2007; Zivin et al., 2010). Norton et al. (2006) point out that even interviews by physicians are "vulnerable to variable recall and willingness to report depressive symptoms, thus risking underreporting of symptoms in some groups" (p. P134). The Center for Epidemiologic Studies Depression Scale (CES-D) has been used in a wide array of studies to measure depression in the older adult population (Krause, 2009; McFarland, 2009; Keyes & Reitzes, 2007; Zivin et al., 2010). The psychometric properties of this scale have been found to work well in the older adult population (Zivin et al., 2010). The CES- D scale has been proven to be acceptable for both clinical and general populations (Radloff, 1977). This measure of self-rated depression has also been proven to be reliable and valid (Radloff, 1977). This measure of depression assesses depressive symptoms experienced in the last week (Radloff, 1977).

Gender and depression.

Numerous research projects have discovered depression and depressive symptoms to be more prevalent in women than in men (Kockler & Heun, 2002; Norton et al., 2008; Norton et al., 2006). Gender differences have been found in younger (Koenig, 2001) and older populations (Kockler & Heun, 2002; Norton et al., 2008; Norton et al., 2006). Kockler and Heun, (2002) determined from their research that gender differences in depressive symptoms in the older adult population were more subtle than gender differences found in literature concerning younger populations.

Kockler and Heun, (2002) found that depression was more prevalent in women as well, but also discovered that numerous differences in the number of depressive symptoms were explained by gender differences in the psychosocial variables (e.g. family status). These researchers also found that women may also experience depression somewhat different manner than men do (Kockler & Heun, 2002).

Race and depression.

The literature concerning comparing the prevalence of depression and depressive symptoms among older African American and Caucasian adults has shown mixed results (Roff et al., 2004). Research found that 14.6% of Caucasian older adults in the United States had four or more significant depressive symptoms (Zivin et al., 2010). These researchers used a modified version of the CES- D scale discussed earlier. Participants who reported four more depressive symptoms (out of eight) were classified as having significant depressive symptoms (Zivin et al., 2010).

Results from a project using data from the National Survey of American Life (NSAL) found that 23% of older African American adults met criteria for at least one DSM-IV lifetime

disorder (Ford et al., 2007). The study used both prevalence of lifetime and 12-month presence of mental disorders. Lifetime disorders simply refer to an individual suffering from at least one mental disorder in their life (Ford et al., 2007). This project was the first to study the prevalence of serious mental disorders in older African Americans based on a national sample (Ford et al., 2007). When conducting their research Ford et al. (2007) found no study that "investigated the prevalence of psychiatric disorders in a nationally representative sample of older African Americans" (p. 653). Most research focused on depressive levels in older African American adults has used small, nongeneralizable samples (Ford et al., 2007). This lack of research implementing large, representative samples of older African American adults and psychiatric disorders makes comparing rates of depression between Caucasian and African American older adults difficult.

Previous research has also shown that the African American community has cultural beliefs specific to depression and mental health problems. Some of these cultural beliefs deal with seeking treatment for depression, while other beliefs deal with suffering from the disorder (Conner et al., 2010). Research has found that African Americans often have distrust and fear of the medical treatment system when seeking treatment for depression (Conner et al., 2010). Literature has also shown that African Americans have negative attitudes toward people suffering from depression (Conner et al., 2010). In a study by Conner et al. (2010) involving African American older adults, the majority of participants acknowledged that the African American community "is not largely tolerant of individuals suffering from depression, or any other mental health problem" (p. 974). This research also showed that African-American older adults believe that is not appropriate to speak openly about mental health problems. Participants attributed this belief of keeping mental health problems private to the way that African

Americans are raised and that it is a part of their culture (Connor et al., 2010).

Organizational religiosity and depression.

The simplest conceptualization of organizational religiosity is the measurement of participation in public religious activities (Wink et al., 2005; Koenig et al., 2001). Researchers have also used more complex, multi-item scales to measure organizational religiosity (McFarland, 2009; Chatters et al., 2008; Parker et al., 2003; Strawbridge et al., 1998; Koenig, 2007; Koenig et al., 2001). Some examples of items used to measure organizational religiosity include: attendance at Sunday school or Bible study groups, participation in prayer groups, and attendance at general religious services (Krause, 2001; McFarland, 2009; Koenig et al., 2001).

In a study reviewing a large number of studies found that "the most consistent positive association between religion/spirituality and depression involves the assessment of religious activity, most often attendance at religious activities" (Blazer, 2010, p. 17). Also, in another large review of studies linking organizational religiosity and depression found that in more than 85% of these studies participation in organized religion was associated with lower levels of depression (Koenig et al., 2001). Other researchers have also found that higher levels of organizational religiosity were associated with lower levels of depression (Chatters et al., 2008; Koenig at al., 2001; Parker et al., 2003; Strawbridge et al., 1998; Koenig, 2007; Norton et al., 2006; McCullough & Larson, 1999). Attendance at church at least weekly has been found to be significantly associated with lower odds of new-onset major depression (Norton et al., 2006). A research project found that for women, periodic, weekly, or even more attendance at church was associated with a reduction in the risk for depression, when compared to never attending church (Norton et al., 2006). A study analyzing a large, nationally representative sample revealed that higher levels of organizational religiosity were associated with lower levels of depression in

men, but did not have much of an effect on levels of depression in women (McFarland, 2009).

Attendance at a religious establishment may not be the most significant contributor to psychological well-being and depression (Lawler-Row & Elliott, 2009). The researchers who discovered this result found that when church membership and attendance were separated, church membership was the more significant variable (Lawler-Row & Elliott, 2009). This may signify that the sense of identity that one receives by being a part of an established group is more substantial than the activities themselves (Lawler-Row & Elliott, 2009). This finding may also signify that certain nonorganizational elements of religiosity may have a more significant relationship with depression.

Nonorganizational religiosity and depression.

Attendance at religious services is a typical measure of religiosity (Chatters et al., 2008; Koenig at al., 2001; Blazer, 2010). However, attendance at religious services may be difficult for older adults because of limited functional status and chronic illness (Parker et al., 2003; Taylor et al., 2011). A study found that older persons who, because of disability, are unable to attend organized religious activities may have a deepening of their internal belief to cope with an increase in stress and disability (Koenig, 2002). Thus, it is especially important to determine and analyze the relationship between nonorganizational religious activities and depression in the older adult population.

The simplest way to define nonorganizational religiosity is private religious activities (Wink et al., 2005; Koenig et al., 2001). Researchers have used numerous indicators to measure nonorganizational religiosity including, but not limited to: prayer (Parker et al., 2003; Strawbridge et al., 1998; Koenig, 2007; McFarland, 2009), reading religious material (Koenig, 2007; McFarland, 2009), watching religious television (McFarland, 2009), listening to religious

programs on the radio (McFarland, 2009), asking someone to pray for you (Chatters et al., 2008; Taylor et al., 2011; Koenig et al., 2001).

While the relationship between organizational religiosity and depression has been found in a review of a large number of research studies (Koenig et al., 2001), the relationship between nonorganizational religiosity and depression is not as clear (Sloan & Bagiella, 2002; Koenig et al., 2001; Parker et al., 2003; McCullough & Larson, 1999). It is difficult to come to a definitive conclusion regarding the relationship between nonorganizational religiosity and depression due to the small number of longitudinal studies assessing this relationship coupled with weak religious measures (Koenig et al., 2001).

Some studies have shown that nonorganizational religiosity is associated with lower levels of depression (Kendler & Gardner, 1997; Koenig, 2007) while others have found no significant relationship between nonorganizational religiosity and depression (Chatters et al., 2008; Parker et al., 2003; Strawbridge et al., 1998). In contrast to most research findings, Koenig (2007) found that nonorganizational religious activities had a stronger inverse relationship with depression than organizational religious activities. It is important to note that people often increase prayer and other private religious activities in response to negative life occurrences and decrease these activities when life returns to normal, giving the false impression that in the short term that nonorganizational religiosity is associated with depression and poor mental health (Koenig et al., 2001). In the proceeding section theories and rationales for the project will be discussed.

Theory and Rationale

The current project will use various theories to support the different hypotheses. These theories include activity theory and radical feminist theory. The research will also state an

overview of the sociohistorical role of church in the lives of older African Americans in support of the hypotheses. In the next section we will discuss activity theory and past literature on the benefits of social activity as a rationale for the first hypothesis.

Activity theory and social activity rationale.

Based on activity theory and previous research findings noting the relationship between social activity and positive health benefits it is thought that high levels of organizational religiosity will have a stronger relationship with depression than high levels of nonorganizational religiosity.

Activity theory was one of the earliest theories in social gerontology (Hooyman & Kiyak, 2008). It was also one of the earliest attempts to explain how older adults react and adjust to age-related changes (Hooyman & Kiyak, 2008). Activity theory is based on Havinghurst's (1968) examination of the Kansas City Studies of Adult Life. Based on the data gathered and analyzed in the Kansas City Studies activity theory proposes that "the well-adjusted older person takes on age-appropriate replacements for past roles, through productive roles in voluntary, faith-based and leisure associations" (Hooyman & Kiyak, 2008, p. 309). Activity theory puts forth that in order for successful or healthy aging to occur older adults must continue to stay active as they age and must also stay involved in social interactions (Krause, 2008). Aging successfully, under the activity theory paradigm, is a continuation of middle age in which older adults try to maintain relationships, roles, and status in the later years of life. In accordance with this theory current age based programs and policies are created in a manner to develop new activities and roles for older adults, consistent with midlife activity, and encourage social activity and integration (Havinghurst, 1956; Havinghurst & Albrecht, 1953).

Theorists from this perspective espouse that the majority of older adults do not want to

disengage from society as they age (Krause, 2008). This facet of activity theory puts it at direct odds with another one of gerontology's most famous theories, the disengagement theory (Cumming & Henry, 1961). Disengagement theory purposes that disengagement by older adults is inevitable and adaptive. Under this perspective disengagement is also believed to have positive consequences (Cumming & Henry, 1961). Activity theory suggests that instead of disengaging older adults "prefer to remain active, and they do so by finding activities that substitute for the ones they have given up either through role loss or declining health" (Krause, 2008, p. 140). Under this theory the more active an older adult is the higher the level of life satisfaction the older adult should experience (Hooyman & Kiyak, 2008).

Disengagement theory is discounted by most individuals in the field of gerontology and has not been supported by empirical research (Hooyman & Kiyak, 2008). Activity theory has been supported by empirical research and numerous studies have revealed positive effects of social activity on health, including lower levels of depression (Golden, Conroy, & Lawlor, 2009; Glass, De Leon, Bassuk, & Berkman, 2006).

One of the main themes of activity theory (Havinghurst, 1956, 1968; Havinghurst & Albrecht, 1953) and successful aging (Rowe & Kahn, 1997) is that taking part in social activity and social engagement is a fundamental part of aging and the lives of older adults. Maier and Klumb (2005) found that "participation in social activities provides social contacts and interactions with others, fulfilling a basic human need for affiliation and building a sense of community" (p. 68).

Numerous studies have found that social support and involvement in social activity positively affect health in older adults (Golden et al., 2009; Glass et al., 2006; Jang & Chiriboga, 2011). One specific aspect of health that is positively influenced by social activity and support is

mental health, including lower levels of depression (Golden et al., 2009; Glass et al., 2006; Jang & Chiriboga, 2011). Research has also shown that poor social support and low levels of social activity negatively impact health (Fiori, Antonucci, & Cortina, 2006). Fiori et al. (2006) found that older individuals who had poor social relations had an increased risk of depression. Literature has also shown that higher levels of social activity and engagement are significantly associated with various dimensions of health and well being including: "reduced prevalences of depression, generalized anxiety disorder, physical impairment and cognitive impairment" (p. 288), and three life quality measures (Golden et al., 2009).

Radical feminist theory.

Radical feminist theory is implemented as a base to support the second hypothesis regarding gender, religion, and depression. Based on radical feminist theory and the roles that older men and women hold in religions, older men should benefit more (in terms of lower levels of depression) from higher levels of organized religiosity than women will. Radical feminist theory is based on the central beliefs that:

> women are of absolute positive value as women, a belief asserted against what they claim to be the universal devaluing of women, and that women everywhere oppressed—violently—oppressed by the system of patriarchy. (Ritzer & Goodman, 2004, pg. 452)

Theorists from this orientation see in the most basic societal structures (e.g. age, ethnicity, heterosexuality, class, race, and gender) and in every institution systems of oppression in which individuals or groups of people dominate others (Ritzer & Goodman, 2004). Out of all of the societal structures just listed, the "most fundamental structure of oppression is gender, the system of patriarchy" (Ritzer & Goodman, 2004, pg. 453). Lerner found that historically not only is patriarchy the first "structure of domination and submission, it continues as the most pervasive

and enduring system of inequality, the basic societal model of domination" (as cited in Ritzer & Goodman, 2004, pg. 453).

At the center of the radical feminist tradition is the view of patriarchy as violence committed by men and by male-dominated groups against women. In this theoretical orientation violence is not necessarily defined as overt physical abuse or cruelty. Violence can be concealed in various complex practices of exploitation and control (Ritzer & Goodman, 2004). Violence, according to radical feminist theorists, exists when "one group controls in its own interests the life chances, environments, actions, and perceptions of another group, as men do to women (Ritzer & Goodman, 2004, p. 453).

Radical feminist theory takes the concept of patriarchy and expands upon it by "defining it as a worldwide system of subordination legitimated by medicine, religion, science, law, and other social institutions" (Lorber, 2010, p. 122). The values rooted within these major sections of society value men as a group over women as a group (Lorber, 2010). Men dominate women within their racial or ethnic group and social class which gives them what Lorber (2010) calls "patriarchal privileges", so that even if men are subordinated by other men, they still fill a sense of superiority over their women (p. 122). Radical feminist theory explains patriarchy as the system that privileges men and subordinates and exploits women (Lorber, 2010).

Roles women occupy in the church are predominately subordinate in comparison to the roles occupied by men (McFarland, 2009). McFarland (2009) found that older men were disproportionately able to obtain positions in the church that convey power and social status. Older women are more often relegated to roles with little to no power such as: cooking, cleaning, and childcare. These subordinate roles that women play in the organized religious setting should lead to organizational religiosity sharing a stronger relationship with depression (as levels of

organizational religiosity increase depression decreases) in men than in women.

Rationale for racial differences.

To support the third hypothesis regarding race, religion, and depression the sociohistorical role of the church and religion in the lives of African Americans will be reviewed. In both historic and contemporary society, the church has had an influence on nearly every aspect of on African American life (Taylor et al., 2004; Taylor, Thornton, & Chatters, 1987). Religion and the church influence political, social, and economic development in the African American community (Taylor et al., 1987). The importance of the church in the lives of African Americans may be attributed mainly to its position as one of the few establishments within the African American community that is predominantly built, financed, and controlled by African Americans (Taylor et al., 2004; Taylor et al., 1987). Also, the importance of the church in the African American community puts it "in a position of being uniquely responsive to the needs of the community it serves" (Taylor et al., 1987, p. 124).

Due to the significance of the church in the African American community numerous studies and reviews of literature have shown that African Americans are more religiously inclined than their Caucasian counterparts (Taylor et al., 2004; Taylor, & Chatters, 1994; Taylor et al., 2011; Taylor et al., 1987). Not only has research found that African Americans are more religious than Caucasians, it has found that African Americans are more likely to report that religion is very important in their lives (Taylor et al., 1996).

The preceding information coupled with the research results mentioned in the review of literature support the notion that African Americans will have higher levels of religiosity and these high levels coupled with the significance of the church in the African American community should lead to lowers levels of depression in African American older adults, when compared to

Caucasian older adults. The following section will discuss the hypotheses implemented in this study.

Statement of Hypotheses

Hypothesis 1

This study was designed to identify the extent of the relationship between religiosity and depression in the older adult population. The first hypothesis will specifically analyze the relationship between the two types of religiosity (organizational and nonorganizational), as they relate to depression. It is hypothesized that organizational religiosity will share a stronger relationship with depression than nonorganizational religiosity because of the social support related to organizational religious activities. By analyzing this relationship it should be ascertained if nonorganizational religiosity is significantly associated with depression. This will add to literature in this which to this point has conflicting findings on this relationship.

Hypothesis 2

Hypothesis two seeks to determine if gender influences the relationship between religion and depression. This hypothesis is set up to determine if being male or female changes how religion affects depression in older adults. Based on theory and research it is hypothesized that men should have significantly lower levels of depression from higher levels of organized religiosity than women will. It is thought that gender acts as a moderator between the relationship between religiosity and depression. It is also believed that women may benefit from higher levels of organizational religiosity as it relates to depressive levels, but that men will benefit more and should have lower levels of depression than women.

Hypothesis 3

The third hypothesis will look at race as it relates to religion and depression in the older

adult population. Specifically does being Caucasian or African American change or influence the relationship between religiosity and depression in the older adult population. It is put forth that race acts as a moderator between the relationship between religiosity and depression. It is believed that because African American older adults have been found to be more religious than Caucasian older adults, both higher levels of organizational and nonorganizational religiosity should share a stronger relationship with depression (depression levels should be lower) than in Caucasian older adults.

Methods

Procedures

This study's statistical analyses and findings will be based on a pre-existing data set. The original data was collected through the Religion, Aging, and Health Survey by Neal Krause (Krause, 2001). This study was funded by National Institute on Aging (NIA). Two waves of data were collected for the original research project; the first wave was collected in 2001 and the second wave in 2004.

This data set was chosen for a numerous reasons. First, the sample collected for this data set was nationally representative of the United States older adult population. Second, the investigator oversampled African American older adults so that racial differences could be analyzed more successfully. This fact was one of the main reasons that this data set was chosen for analyses because determining if there were racial differences in the influence of religiosity on depression was one of the main goals of this project. Third, the sample size of the data set was relatively large consisting of 1,500 participants (the final sample size used for this project consisted of 1,370 valid participants after listwise deletion). Lastly, the survey used in the original survey contained over 2,600 questions, having this large of an amount of questions

allows the ability to be more selective on what questions are included in the final analyses.

Organization and nonorganizational religiosity were only measured in the first wave of data collection. The first four years of the original study were spent developing these measures to measure religion in late life. Since the current study is focused on organizational and nonorganizational religiosity only data from wave one was used for analyses. The questionnaire used in the first wave of the initial collection of data contained over 2,600 questions (Krause, 2001). For the current research project the number of questions will be narrowed to those questions relevant to study at hand. A summary of the questions used for analyses in this study are included in Appendix A.

After selecting the variables that are relevant to the current research questions the statistical program commonly used in social sciences the Statistical Package for the Social Sciences (SPPS) will be used. By entering data into this program it will give the ability to determine which, if any, of the hypothesized relationships are statistically significant.

Participants

One thousand five hundred African American and Caucasian adults age 65 and older were interviewed for wave one in 2001 (the final sample for this project consisted of 1,370 participants). The sampling frame was made up of eligible individuals in the Health Care Financing Administration (HCFA) Medicare Beneficiary List (HCFA is now named the Centers for Medicare and Medicaid Services – CMS). The Medicare Beneficiary List consists of all older Americans enrolled in the Medicare program. Older African American adults were oversampled and represented roughly half of the sample. The sample was a random probability sample and the data was collected via face-to-face interviews with the participants (Krause, 2001). The study was restricted to participants who were “currently practicing Christians, people

who were Christians in the past but no longer practice any religion, and individuals who were never affiliated with any faith at any point in their lifetime" (Krause, 2003, p. 100). The next section will detail specific components of measures used in this study.

The original survey looked at religion, self-rated health, depression, and psychological well-being in a sample of African American and older Caucasian adults aged 65 and over within the United States. Numerous questions were asked regarding religious status, activities, and beliefs among those who currently practice the Christian faith, those who used to be Christian but are not now, and those who have never been associated with any religion during their lifetimes. While only including these groups may seem limiting it includes the majority of the population: in a nationwide survey it was found that 78.4% of Americans identified as Christians, while another 16.1 % were not associated with any religion (PRC, 2008). Also, people practicing religions other than Christianity were excluded because it is difficult to create a set of measures that assesses levels of religiosity that is appropriate for persons of all religions (Krause, 2003). Demographic variables include age, race, sex, education, and income.

Measures

Depression

Depression was assessed using eight questions from the 20-item Center for Epidemiologic Studies Depression Scale (CES-D). These questions include (Radloff, 1977): "I felt I could not shake off the blues even with the help of my family and friends," "I felt depressed," "I had crying spells," "I felt sad," "I did not feel like eating, my appetite was poor," "I felt that everything I did was an effort," "My sleep was restless," and "I could not get going." Each of these questions were measured by a four-point Likert scale ranging from one (rarely or none of the time) to four (most or all of the time). Participants were asked if they had

experienced any of these feelings in the past week. Higher scores on this scale represent the participant experiencing more symptoms of depression during the past week (Radloff, 1977).

As stated earlier this scale has been proven to be acceptable for both clinical and general populations and has also been proven to be reliable and valid (Radloff, 1977). A complete list of the survey questions assessing organizational religiosity, nonorganizational religiosity, and depression are included in Appendix A.

Organizational Religiosity

Organizational religiosity assesses participation in official activities of a religious institution (Krause, 2007). Organizational religiosity was measured using three indicators that assess the frequency of attendance at Sunday School or Bible study groups, prayer groups, and religious services. This method of measuring organized religious activity has been used by researchers for over thirty years (Mindel & Vaughan, 1978; Krause, 2007; McFarland, 2009). These indicators were only used in the first wave of the original survey. A *high* score represents more frequent participation in public or organized church activities.

Nonorganizational Religiosity

Nonorganizational religiosity was measured using four indicators that assess the frequency of reading the Bible at home, reading religious literature other than the bible at home, watching or listening to formal church services, and praying by yourself. These indicators were only used in the first wave of the original survey. Scoring is opposite of organizational religiosity as a *low* score represents more frequent participation in private or nonorganized religious activities.

Gender

A binary variable is used to measure older male participants (scored 0) and older female

participants (scored 1).

Race

A binary variable is used to measure older Caucasian older participants (scored 0) and older African American participants (scored 1).

Socioeconomic Status

Participants were able to choose from 10 different income brackets that represent their yearly income from the previous year. The income brackets are included in Appendix A.

Analytic Approach

Note that all analyses have been weighted to make the sample representative in terms of age, gender, education, and region of older Americans (Krause, 2001).

Hypothesis 1

To determine if the first hypothesis concerning the extent of the relationship between religiosity and depression in the older adult population is correct the statistical analysis multiple regression will be computed. A multiple regression analyses will be implemented with organizational religiosity, nonorganizational religiosity, race, gender, and socioeconomic status (measured by analyzing yearly income) as the independent variables and depression as the dependent variable.

Hypothesis 2

To ascertain if the second hypothesis seeking to determine if gender influences the relationship between religion and depression is correct the statistical analysis multiple regression will be computed. A multiple regression analyses will be implemented with organizational religiosity, nonorganizational religiosity, race, gender, and socioeconomic status (measured by analyzing yearly income) as the independent variables and depression as the dependent variable.

The interaction between gender and the two types of religiosity (organizational and nonorganizational) will also be entered into the regression as independent variables.

Hypothesis 3

To ascertain if the third hypothesis of determining if being Caucasian or African American changes or influences the relationship between religiosity and depression in the older adult population is correct the statistical analysis multiple regression will be computed. A multiple regression analyses will be implemented with organizational religiosity, nonorganizational religiosity, race, gender, and socioeconomic status (measured by analyzing yearly income) as the independent variables and depression as the dependent variable. The interaction between race and the two types of religiosity (organizational and nonorganizational) will also be entered into the regression as independent variables.

Ethics Statement

As stated previously the current project is analyzing information from a pre-existing data set. All of the information has been de-identified and it would be impossible for any of the participants from the original data set to be identified through analysis of the current study. Although the current study is using pre-existing data for analyses an Institutional Review Board (IRB) application was completed. The researcher received correspondence from the university IRB that the project had been deemed exempt status, meaning the application will not go undergo Full Board review, but the researcher is approved to go ahead with the project.

The author of this study completed the Protecting Human Research Participants (PHRP) course provided by the National Institutes of Health (NIH). This course is taken online and takes approximately three hours to complete. It consists of seven modules, four of which are followed by quizzes. Passing scores are required in order to receive a certificate of completion. The

course covers the history of human subject research, codes and regulations, the three principles identified by the Belmont Report as essential to the ethical conduct of research with humans (respect for persons, beneficence, and justice). The author's certificate of completion is included in Appendix B.

Results

Before discussing the hypotheses it is important to note some patterns in the descriptive statistics. Out of the four measures analyzing nonorganizational religiosity, frequency of praying alone is the activity done most frequently; the mean of 1.226 corresponds to a response between "once a day" and "a few times a week." This measure also has the lowest standard deviation—1.877—of all of the religiosity measures, pointing to much less variability in responses than the other measures. The means of the other nonorganizational religiosity measures are 3.549 for reading the Bible at home, 3.992 for watching or listening to services on television or radio, and 4.194 for reading other religious material at home (note lower numbers mean more frequent participation). The organizational religiosity measure most frequently reported is attending religious services; the mean is 4.729, which corresponds to a response between "about once a month" and "two to three times a month." In comparison, the means for frequency of attending Sunday School or Bible study groups is 2.652 and of participating in prayer groups not part of regular worship or Bible study is 1.680 (note that lower numbers here mean less frequent participation).

Hypothesis 1

Results regarding the effects of religiosity on depression, more specifically the analysis of how organizational and nonorganizational religiosity predicts depression in older adults are illustrated in Table 2 in Appendix C. As stated earlier, it was hypothesized that organizational

religiosity will share a stronger relationship with depression than nonorganizational religiosity because of the social support related to organizational religious activities.

The regression model revealed two significant relationships. The first significant relationship was between gender and depressive symptoms. The regression found that women had significantly ($b = 0.816$, $p < .01$) higher levels of depressive symptoms when compared to men. The second significant relationship was found between an organizational religiosity variable and depressive symptoms; individuals who attend religious services more frequently have significantly ($b = -0.300$, $p < .001$) lower levels of depressive symptoms than individuals who attend religious services less frequently. This model explains 4.9% of the outcome, frequency and severity of depressive symptoms.

Hypothesis 2

Results regarding the moderating effects of gender on the relationship between religiosity and depression are illustrated in Table 3 in Appendix C. It was hypothesized that men would benefit more (in terms of lower levels of depressive symptoms) from participation in organizational religiosity than women would.

The regression model revealed one significant relationship frequency of attending religious services and depressive symptomology. Individuals who attend religious services more frequently have significantly ($b = -.304$, $p < .01$) lower levels of depressive symptoms than individuals who attend religious services less frequently. None of the interactions between gender and religiosity that were added into this regression model were significant. This model explains 5.3% of the variation in the outcome, depressive symptoms.

Hypothesis 3

Results regarding the moderating effects of race on the relationship between religiosity

and depression are presented in Table 4 in Appendix C. It is believed that in African American older adults, both higher levels of organizational and nonorganizational religiosity should share a stronger negative relationship with depression (i.e., depression levels should be lower) than in Caucasian older adults. Put another way, African Americans derive more benefit from religiosity.

The regression model revealed four significant relationships—three main effects and one interaction. The first significant relationship was between the nonorganizational measure of frequency of watching formal church services on TV or listening to them on the radio significantly predicts depressive symptoms. Individuals who watch or listen to formal church services more often have significantly (b = -0.256, $p < .01$) lower levels of depressive symptoms than those who watch or listen less often. Women also have significantly (b = 0.882, $p < .01$) higher levels of depressive symptoms when compared to men. Older African Americans have significantly (b = 2.616, $p < .05$) higher levels of depressive symptoms in comparison to Caucasian older adults.

The interaction between race and attending religious services also significantly predicts depressive symptoms (b = -0.503, $p < .001$), which is graphed in Figure 1 in Appendix C. As the graph shows, African Americans benefit more from higher frequency of attendance than Caucasians in terms of depressive symptoms. For both races, those who attend services more often have lower depressive symptoms and those who attend less often have more. Among those older adults who report average attendance—in this sample, this translates to attending between once a month and two to three times a month—Caucasians and African Americans report basically the same amounts of depressive symptoms. Among those who report lower attendance, African Americans have much higher frequency and severity of depression than Caucasians, but

among those who report higher levels of attendance, Caucasians report much higher frequency and severity of depression than African Americans. Overall, this model explains 6.7% of the variation in the outcome, depressive symptoms.

Discussion

The purpose of this study was to analyze the relationship between the two types of religiosity (organizational and nonorganizational) and depression in the United States older adult population. This study is rooted in psychological, sociological, and gerontological research dating back to the early 1950s with the pioneering work of Moberg (1953a). The study used information obtained from the Religion, Aging, and Health Survey (Krause, 2001); the final sample size consisted of 1,370 participants. Results show limited but significant efficacy of both organizational and nonorganizational religiosity, gender and race against depression. This project supports the already abundant literature showing that women have higher levels of depression than men, and African Americans report more depression than Caucasians, but this racial difference may be mitigated by attending religious services.

This research hypothesized that organizational religiosity should be more predictive of better mental health than nonorganizational, but this hypothesis only found limited support. Only one measure of organizational religiosity—attending services—significantly predicts depression in two of the three models. Attending religious services is significantly related to depression arguably because of the social interaction involved and social networking that prevents isolation in elderly adults. Perhaps the other organizational religiosity measures—attending Sunday School, Bible study, and other prayer groups—were not significantly related to depression because these are smaller and more focused on the particular activity. In other words, the intent focus on the singular activity of the group perhaps does not lend itself to more-general,

health-promoting socializing. Future research should attempt to ascertain what aspects of organizational religiosity and attending religious services influence depression.

Even though it was hypothesized that organizational religiosity would be the more powerful predictor of depressive symptoms, this study did expect more significant relationships between the measures of nonorganizational religiosity and depression. Only one measure—watching or listening to services on television or radio—in one of the three models was significant. Past research is split on whether there is a true, significant relationship between nonorganizational religiosity and depression. I argue that while nonorganizational religiosity may not have the same social interaction benefits as organizational religiosity, future qualitative research (e.g., intensive interviewing) should expand measures of nonorganizational activities to include such things as the type of prayer (e.g., altruistic vs. selfish requests), the focus of prayer (e.g., praying to God vs. a saint), or the role of religious literature in coping with personal problems. Qualitative research would be especially helpful to understand why some people choose nonorganizational religion over organizational religion, and why others incorporate both into their religious practice.

Another limitation of this study is the fact that it only African American and Caucasian older adults were analyzed in this study due to a limitation in the dataset. In the past African Americans have been the largest minority group, however they have been overtaken by Hispanics in the last decade (Jacobsen et al. 2011). This issue is somewhat irrelevant to this research project because one of the main hypotheses deals with analyzing racial differences in the influence of religiosity on depression and "Hispanic" is a panethnicity made up of several very different ethnic groups, not a coherent "race." More importantly the African American race was chosen because of the importance of the church and religion in the African American

community, currently and historically.

Likewise, the data was limited to Christians, former Christians, and participants who were never affiliated with any faith during their life. Only including these groups may seem limiting it, but includes the majority of the United States population. In a nationwide survey it was discovered that 78.4% of Americans identified as Christians, while another 16.1 % were not associated with any religion (PRC, 2008). Also, people practicing religions other than Christianity were not included because it is difficult to create a set of measures that assesses levels of religiosity that is appropriate for persons of all religions (Krause, 2003).

Future research surrounding this topic should on a number of key areas. First, future research studies focused on this topic should attempt to analyze as many races as resources allow. This is an important step to take because religion has influences and continues to influence every race differently. These varying influences of religion may lead to religiosity influencing depression differently, as was revealed in this project as religiosity influenced levels of depression symptoms differently in African American and Caucasian older adults.

Also, including more religions in research on this topic would add to the generalizability of the results. While it was noted multiple times in this project that the majority of Americans are Christian, including religions outside of this realm may lead to more globally generalizable results. All religions contain certain nuances that distinguish them from other religions (e.g., meditation, specific numbers of prayer per day, abstaining from certain activities and foods). These specific nuances and activities may prove to share a different relationship with depression than activities specific to the Christian faith do.

Conclusions

There are a number of important pieces of information to take away from this study. It is

obvious from this project and a plethora of previous research that religion is important to the older adult population. Also, this study and previous research show that religion shares a relationship with depression, most often higher levels of religious involvement are associated with lower levels of depression. Knowing the importance of religion to older adults and the relationship that it shares with depression, it is essential that religion be taken into account or at the very least acknowledged when dealing with depressed older adults. Consummate with previous research this study also found that women had significantly higher levels of depressive symptoms than men. Program and policy changes need to occur to better deal with and treat these higher levels of depression. This project also found that African Americans on average have more frequent and more severe depressive symptoms than Caucasians, but this relationship is moderated by religious attendance. African Americans receive more benefit from attendance; those who attend services most frequently are actually in better mental health than their Caucasian counterparts. Thus, it is also of importance to create programs that aid African Americans in attending religious services if they desire. In closing, this study revealed that women and African Americans have higher levels of depressive symptoms, and that higher levels of attendance at religious services are associated with lower levels of depressive symptoms—especially for African Americans.

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Appendix A

Survey Questions
(Core Study Measures)

Socioeconomic Status

1. Less than $5,000
2. $5,000-$9,999
3. $10,000-$14,999
4. $15,000-$19,999
5. $20,000-$24,999
6. $25,000-$29,999
7. $30,000-$39,999
8. $40,000-$59,999
9. $60,000-$79,999
10. $80,000+

Organizational Religiosity

1. How often do you attend Sunday School or Bible study groups?
2. How often do you participate in prayer groups that are not part of regular worship services or Bible study groups?
3. How often do you attend religious services?

These items were scored in the following way (coding of answer in parentheses): Never (0), Less than once per year (1), About twice per year (2), Several times a year (3), About once a month (4), 2-3 times a month (5), Nearly every week (6), Every week (7), Several times a week (8).

Nonorganizational Religiosity

1. When you are at home, how often do you read the Bible?
2. When you are at home, how often do you read religious literature other than the bible?
3. How often do you watch formal church services on TV or listen to them on the radio?
4. How often do you prayer by yourself?

These items were scored in the following way (coding of answer in parentheses): Several times of day (0), Once a day (1), A few times a week (2), Once a week (3), A few times a month (4), Once a month (5), Less than once a month (6), Never (7)

Appendix A (cont'd)

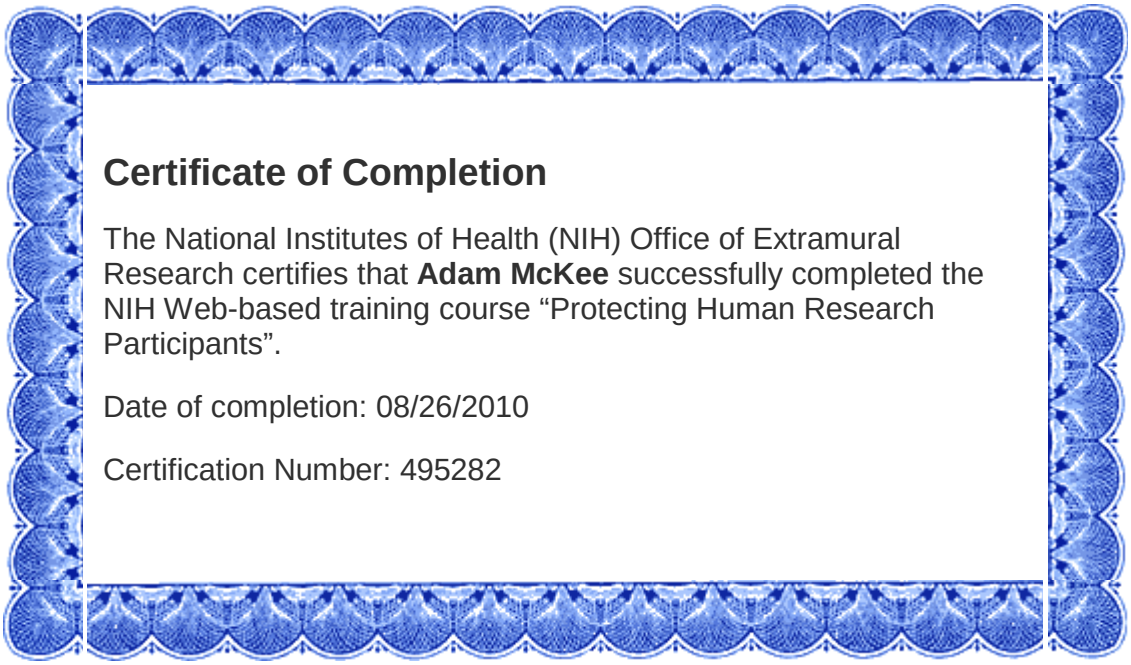
Depression

1. I felt I could not shake off the blues even with the help of my family and friends.
2. I felt depressed.
3. I had crying spells.
4. I felt sad.
5. I did not feel like eating, my appetite was poor.
6. I felt that everything I did was an effort.
7. My sleep was restless.
8. I could not get going.

These items were scored in the following way (coding of answer in parentheses): Rarely or none of the time (1), Some or little of the time (2), Occasionally or a moderate amount of the time (3), Most or all of the time (4).

Appendix B

PHRP Certificate



Certificate of Completion

The National Institutes of Health (NIH) Office of Extramural Research certifies that **Adam McKee** successfully completed the NIH Web-based training course “Protecting Human Research Participants”.

Date of completion: 08/26/2010

Certification Number: 495282

Appendix C

Table 1 Descriptive Statistics for Depressive Symptoms, Nonorganizational Religiosity Questions, Organizational Religiosity Questions, Race, Gender, Socioeconomic Status, and Race and Gender Interactions

Descriptive Statistics

Variable	N	Minimum	Maximum	Mean	Std. Deviation
Depressive symptoms (sum)	1498	3.00	32.00	12.413	4.896
Frequency of reading the Bible at home	1473	.00	7.00	3.549	2.561
Frequency of reading religious material other than the Bible at home	1479	.00	7.00	4.194	2.421
Frequency of watching formal church services on TV or listening to them on the radio	1488	.00	7.00	3.992	2.241
Frequency of praying alone	1481	.00	7.00	1.226	1.877
Frequency of attending Sunday School or Bible study groups	1452	.00	8.00	2.652	3.065
Frequency of participating in prayer groups that are not part of regular worship services or Bible study groups	1442	.00	8.00	1.680	2.593
Frequency of attending religious services	1494	.00	8.00	4.729	2.723
Race	1493	.00	1.00	0.492	.500
Gender	1500	.00	1.00	0.618	.486
Socioeconomic Status	1500	.00	10.00	3.314	2.950
(SAMPLING WEIGHT)	1500	.50	3.02	1.000	.302
Valid N (after listwise deletion)	1370.00				

Appendix C (cont'd)

Table 2. Regression Coefficients for the Effects of Nonorganizational and Organizational Religiosity on Depressive Symptoms controlling for the Influence of Race, Gender and Socioeconomic Status [Hypothesis 1]

	Depressive Symptoms	
Nonorganizational Religiosity		
Frequency of reading the Bible at home	0.059	
Frequency of reading religious material other than the Bible at home	0.007	
Frequency of watching formal church services on TV or listening to them on the radio	-0.137	
Frequency of praying alone	-0.153	
Organizational Religiosity		
Frequency of attending Sunday School or Bible study groups	-0.064	
Frequency of participating in prayer groups that are not part of regular worship services or Bible study groups	-0.028	
Frequency of attending religious services	-0.300	***
Sociodemographic Controls		
Race	0.066	
Gender	0.816	**
Socioeconomic Status	-0.086	
(Constant)	14.213	***

*p<.05, **p<.01, ***p<.001

Appendix C (cont'd)

Table 3. Regression Coefficients for the Effects of Nonorganizational and Organizational Religiosity on Depressive Symptoms (with Gender Interactions) controlling for the Influence of Race and Socioeconomic Status [Hypothesis 2]

	Depressive Symptoms	
Nonorganizational Religiosity		
Frequency of reading the Bible at home	-0.014	
Frequency of reading religious material other than the Bible at home	0.101	
Frequency of watching formal church services on TV or listening to them on the radio	-0.018	
Frequency of praying alone	-0.145	
Organizational Religiosity		
Frequency of attending Sunday School or Bible study groups	-0.092	
Frequency of participating in prayer groups that are not part of regular worship services or Bible study groups	0.059	
Frequency of attending religious services	-0.304	**
Sociodemographic Controls		
Race	0.059	
Gender	1.778	
Socioeconomic Status	-0.088	
Interaction Terms		
Gender X Sunday School or Bible study group	0.039	
Gender X Prayer group	-0.123	
Gender X Religious service attendance	0.025	
Gender X Frequency of reading the Bible	0.150	
Gender X Frequency of reading religious material other than the Bible	-0.140	
Gender X Frequency of watching formal church services on TV or listening to them on the radio	-0.206	
Gender X Frequency of praying alone	-0.081	
(Constant)	13.572	***

*p<.05, **p<.01, ***p<.001

Appendix C (cont'd)

Table 4. Regression Coefficients for the Effects of Nonorganizational and Organizational Religiosity on Depressive Symptoms (with Race Interactions) controlling for the Influence of Gender and Socioeconomic Status [Hypothesis 3]

	Depressive Symptoms	
Nonorganizational Religiosity		
Frequency of reading the Bible at home	0.072	
Frequency of reading religious material other than the Bible at home	0.120	
Frequency of watching formal church services on TV or listening to them on the radio	-0.256	**
Frequency of praying alone	-0.086	
Organizational Religiosity		
Frequency of attending Sunday School or Bible study groups	-0.099	
Frequency of participating in prayer groups that are not part of regular worship services or Bible study groups	0.089	
Frequency of attending religious services	-0.088	
Sociodemographic Controls		
Race	2.616	*
Gender	0.882	**
Socioeconomic Status	-0.085	
Interaction Terms		
Race X Sunday School or Bible study group	0.010	
Race X Prayer group	-0.172	
Race X Religious service attendance	-0.503	***
Race X Frequency of reading the Bible	-0.07	
Race X Frequency of reading religious material other than the Bible	-0.185	
Race X Frequency of watching formal church services on TV or listening to them on the radio	0.253	
Race X Frequency of praying alone	-0.053	
(Constant)	13.122	***

*p<.05, **p<.01, ***p<.001

Appendix D

Figure 1. Predicted Depressive Symptoms by Race for Religious Attendance