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Benefits of Prayer on Depression in Elderly Adults

Jared Errol Leet
Walden University

Walden University

College of Social and Behavioral Sciences

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Jared E. Leet

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Walden University
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Abstract

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MS, Troy State University, 1999

BS, Mid-Continent College, 1996

Dissertation Submitted in Partial Fulfillment

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Abstract

Depression in the elderly population is a growing concern in the United States. A decrease in depression in the elderly could lead to greater quality of life and reduced cost of healthcare services. The Sense of Coherence Theory was utilized as the theoretical foundation for this study. The purpose of this study was to use archival data to analyze differences in depression scores by groups based on prayer (yes/no) and over time (wave 1/wave 2 of data collection) when controlling for amount of time spent in prayer by category, gender, and ethnicity. The data were retrieved from the National Archive of Computerized Data on Aging, which included interviews with adults aged 65 and over living in the coterminous United States. The first wave was collected in 2001 and consisted of 1,500 interviews. Wave 2 was collected in 2004 and consisted of 1,024 of the original participants. A mixed ANOVA was used to analyze the data. Results showed that change in depression over time differed depending on use of prayer after controlling for frequency of prayer. Comparisons of the 2 waves in the sample revealed that depression significantly decreased for people who prayed but not for people who did not pray. Implementing prayer as a supplemental form of treatment for depression may alter the way that some clinicians and providers conduct mental health treatment, reduce the emotional burden on families who are often the caretakers of the elderly, and become a cost-effective method of reducing depressive symptoms.

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Dedication

This dissertation is a culmination of time, hard work, and sacrifice. This work is dedicated to my lovely wife, Michelle, who has been a source of support throughout the process and my children (Tristan, Charis, Cameron and Kara) who sacrificed more than they will ever know. They lost time with their father, and tolerated his irritability and frustration even when they were unaware of the cause.

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While unbeknownst to them, my college professors (Dr. William E. Mason, the late Dr. James W. Cecil, and Dr. Marty Dunham) who, along the way, inspired and encouraged me to pursue doctoral training. To Dr. Launa Houston, former clinical psychologist and supervisor who is now deceased, who once told me that only a doctoral degree would complete my academic journey in psychology. To all the Walden University professors, staff and faculty who made this dream possible: thank you!

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Chapter 1: Introduction to the Study

Depression is a growing concern among the elderly population (adults over 65 years old). Prayer and worship have been helpful in supplementing traditional psychotherapy interventions (Wachholtz & Sambamoorthi, 2011). Williams-Orlando (2012) noted that healers have always prayed for patients and that prayer was essential for this healing to occur. In this study, I examined if Christian prayer was beneficial in reducing symptoms of depression among elderly adults while controlling for amount of time spent in prayer, gender, and ethnicity. The study was based on a previously collected data set. In this chapter, I focus on the gap in previous research, define the current problem, state the purpose of the research, outline the conceptual framework, and define the terms related to the study. This chapter also includes the assumptions, the scope and limitations, and the significance of the study.

Background of the Study

The elderly population is increasing in the United States and in other industrialized nations throughout the world (Rowland, 2009). The elderly population (ages 65 years and older) is estimated to represent approximately 20% of the U.S. population by the year 2030 (U.S. Administration on Aging, 2004). Gerontological (the study of aging) and palliative (end of life) care are becoming increasingly important as the population ages. In the later stages of life issues such as illness and the loss of a loved one can evoke emotional problems.

The elderly frequently experiences a significant decline in physical health as a part of the aging process. Declining physical health (e.g., hearing loss, vision loss, etc.) of the elderly often results in a diminished quality of life (Boi, 2012). Chronically physically ill elderly experience poorer mental health than the physically healthy elderly (Fiske, Wetherell, & Gatz, 2009). There are many causes of depression such as serotonin reuptake, stress, grief, irrational thoughts, and social factors. It is estimated that depression will become one of the three leading causes of disease burden by 2030 (Young & Skorga, 2013). This study was focused on the elderly who have been identified with depression, as it is a growing concern.

Belief in the supernatural pervades culture (Pew Research, 2013; Dumais & Sugarman, 2015). According to Koenig (2008), 93% of Americans believe in God or some form of a higher power. It has been suggested that 84% of the world's population identifies as religious (Pew Research, 2012). Therefore, the tendency to believe in God and offer worship is part of the common human experience. The quest for some researchers has been to discover the beneficial effects of religious practices. The focus of this study was on the effects of prayer in reducing depressive symptoms and improving the quality of mental health in the elderly population.

Studying religious and spiritual factors among the elderly is relatively new (Steensland et al., 2000). Spirituality in relationship to patient illness has been explored in fields such as nursing, gerontology, and psychology (Bridges, 2012; Harris, et al, 2015; Levin, Chatters, & Taylor, 2011; Lukoff, 2014). In recent years both social scientists and health professionals have increased attention on religion and spirituality (Joshi, Kumari &

Jain, 2008). Research on the role of religion in the lives of the elderly has produced mixed results. Prayer is a common practice among the elderly; therefore, if prayer can be demonstrated effective in treating depression, then it may have practical value incorporating into psychotherapy. In this study, I examine the effects of prayer on reducing depressive symptoms among elderly Christian Whites and African Americans.

Practicing religion and spirituality has been shown to benefit mental health (Krause, 2011; Tabak, 2014; Weisman de Mamani et al., 2010). For example, Sun et al. (2012) demonstrated that practicing faith is effective in reducing depressive symptoms. Studies have also shown that prayer can be effective in treating depression and has been associated with lower levels of distress and greater well-being (Maciejewski et al., 2012). Therefore, religious practices may have also have a therapeutic function secondary to people connecting to their faith. However, researchers have not explicitly examined the effects of prayer in reducing depressive symptoms in the elderly across the variables of ethnicity, gender, religious exercises, and perceptions of prayer.

Many elderly people are actively religious. It has been documented that older adults have high levels participation in religious activities such as prayer and meditation (Krause, 2008; McFadden, 2013, 2015). It has also been shown that some older adults who engage in prayer have greater life satisfaction and lower levels of depression than adults who do not (Taylor, Chatters, & Jackson, 2007). Krause (2004) demonstrated that spirituality has some mental and physical health benefits in the elderly population. Marche (2006) also demonstrated that religious coping methods such as prayer and meditation have had a positive effect on the physical, mental, and emotional health of the

elderly. Religion may also play an important role in the search for meaning and improving mental health among the elderly.

Some evidence exists that there is a difference between ethnic groups in the use of religious exercises. For example, Sternthal Williams, Musick, and Buck (2012) demonstrated that African Americans seem to benefit more from religious involvement than Caucasians in the context of depressive symptoms. Sternthal et al. also noted that worship service attendance aided in the reduction of anxiety symptoms among Caucasians. It has also been noted that Hispanics often use religious practices during times of anguish (Somerstein, 2002; Sternthal et al., 2012). There is some evidence that ethnic groups' religious practices have varying degrees of effectiveness in treatment of mental illness in the overall population.

Problem Statement

Previous research in this field has been primarily focused on the effectiveness of spiritual practices (prayer, meditation, and worship) in treating depression among various populations (Krause, 2012b; McCoubrie & Davies, 2006). Wachholtz and Sambamthoori (2013) considered the effectiveness of spiritual practices within the elderly population. They discovered that non-Caucasians, females, and people of a lower education level are more likely to engage in prayer than their counterparts. They also noted that people who pray are more likely to use other protective behaviors to ensure their health. However, the purpose of this current study was to consider prayer in reducing depression while controlling for ethnicity, gender, and time spent in prayer within the elderly Christian population. As the population ages, 78 million baby boomers (people born between 1946

and 1964) have begun to enter the category of elderly (adults over 65 years old) since 2011 (Colby & Ortman, 2014). Therefore, finding new treatment modalities for depression such as prayer is a significant and growing interest. In response to the aging population and the growing reliance on prayer as a form of treatment of depression, it would benefit psychologists to become more aware of the ways prayer can be most effective across multicultural dimensions.

Purpose of the Study

The purpose of this quantitative study was to examine whether the use of Christian prayer (independent variable) decreases depressive symptoms (dependent variable) in the elderly (adults ages 65 and older), after controlling for gender, ethnicity, and frequency of prayer. These associations have not been examined by other researchers using this type of research design, which makes this study unique and addresses a gap in the literature about these variables. Examining these variables was important so that researchers can better understand the factors that mitigate the relationship between Christian prayer and depressive symptoms.

Research Question(s) and Hypotheses

The overall research question was: After controlling for gender, ethnicity, and time spent in prayer, are there differences on depressive symptoms in the elderly by time (Wave 1 vs. Wave 2)?

$H_0$1: After controlling for ethnicity, prayer does not reduce depressive symptoms by time (Wave 1 vs. Wave 2).

$H_1$1: After controlling for ethnicity, prayer does reduce depressive symptoms by time (Wave 1 vs. Wave 2).

$H_0$2: After controlling for gender, prayer does not reduce depressive symptoms by time (Wave 1 vs. Wave 2).

$H_1$2: After controlling for gender, prayer does reduce depressive symptoms by time (Wave 1 vs. Wave 2).

$H_0$3: After controlling for frequency of prayer, prayer does not reduce depressive symptoms by time (Wave 1 vs. Wave 2).

$H_1$3: After controlling for frequency of prayer, prayer does reduce depressive symptoms by time (Wave 1 vs. Wave 2).

It was hypothesized that Christian prayer was related positively to the reduction of depressive symptoms of the elderly across the variables. Christian prayer was the primary focus in this study as it was used in the data set. For this study depressive symptoms were quantified by using eight items from the Center for Epidemiologic Studies Depression scale (CESD). It is hoped that this study can contribute to the growing body of data on this topic by focusing on the independent variables of gender, ethnicity, and time spent in prayer in relation to the dependent variable of depressive symptoms.

Theoretical Foundation

The sense of coherence (SOC) theory (also known as salutogenesis) was formulated in 1979 by Antonovsky (1987). Antonovsky claimed that people's life orientations will have an influence on health (Antonovsky, 1987; Eriksson & Lindström,

2007). Eriksson and Lindström, (2007) noted that SOC refers to an attitude that quantifies people's views of life when under stress, the ways they can manage stress, and the ways they can develop their health. SOC has also been described as human mental construct designed to resolve conflicts and endure stress (Junqing, Khan, Jahn, & Kraemer, 2016).

The principles of SOC are comprehensibility, manageability, and meaningfulness (Cilliers, 2011; Gropp, Geldenhuys & Visser, 2007; Vossler, 2012). Comprehensibility refers to the concept that events in the universe are ordered, structured, and make sense. Prayer often implies that a transcendent God can make sense of the universe. Prayer can offer a framework for understanding the apparent capriciousness of the universe. Manageability is the extent to which a person feels he or she can survive and cope. Prayer is a means by which people often use to cope with stressful life events. Meaningfulness refers to how people understand and create value to the challenges of life. Prayer, seeking or accepting the divine will, is how some find meaning in life.

Antonovsky (1979) asserted that the external world could be discerned and understood. He claimed that there is a continuum in which people perceive that the events of life are under their control. This, he noted, allows people to gain a sense of independence over circumstance. He outlined strategies necessary for restoring order and coping with disease causing factors (Griffiths, Ryan, & Foster, 2011; Korotkov, 1998). Antonovsky also theorized that people can infuse meaning into the experiences of life. He stressed the importance of social support and lifestyle as two mediating factors in the religion-health relationship. Having a strong SOC can aid an individual in coping and

adapting (Antonovsky, 1987). Hakanen, Feldt, and Leskinen (2007) noted that a high SOC protects people from stress so that life events are challenges not threats (sense of meaningfulness), life events merely appear incomprehensible (sense of comprehensibility), and that life events can be handled by some other resource at their disposal instead of feeling overwhelmed and helpless (sense of manageability). A low SOC has been related to mental and circulatory health problems (Eriksson, & Lindström, 2006). Another tenet of SOC theory is life satisfaction. A more detailed explanation of SOC and how it relates to religious practice is provided in Chapter 2.

The underlying assumption for this study was the belief in a transcendent, omnipresent, omnipotent, sovereign, and loving God. This is the God described in orthodox Christianity. It is this religious context that the data set was grounded. Within the Christian framework, prayer becomes a meaningful practice. In a broad sense religion is responsible for "shaping people's worldviews, moral standards, family lives, and sometimes their politics" (Kelley, 2015, p.1).

Nature of the Study

Quantitative research was the ideal method used for the topic of this research. This type of design provided objectivity and generalizability. Quantitative research is a format in which the researcher reduces the topic into variables and analyzes relationships between those variables. The quantitative researcher examines a representative sample of the population. In this study, the effect of Christian prayer on depression was examined while controlling for gender, ethnicity, and time spent in prayer. The data used in this study were collected by an ongoing national probability sample survey (Religion, Aging,

and Health Survey, 2001, 2004). The data included religious practice, self-rated evaluation of health, depression, and psychological well-being in a sample of older African Americans and Caucasians (aged 65 and over) within the United States. Questions were asked regarding religious status, activities, and beliefs among those who a) currently practice the Christian faith, b) those who used to be Christian but are not now, and c) those who have never been associated with any religion during their lifetimes. The first wave was collected in 2001 (1,500 participants) and Wave 2 (1,024 participants) was collected in 2004. This survey was based on face-to-face interviews with older adults aged 66 and over. The sampling frame consisted of individuals from the Centers for Medicare and Medicaid (CMS) beneficiary list. The final sample consisted of 1,024 participants (63% female, 37% male). Participants' ages ranged from 67 to 98. Among the second wave 847 (82%) were Caucasian, and 146 (14%) African American. Regarding marital status 47% of the participants were currently married, 40% widowed, 8% divorced, 4% never married, and 1% separated. Depressive symptoms were measured using eight items from the CESD scale (Radloff, 1977). The CESD scale is a short self-report scale designed to measure depressive symptomatology in the general population. The CESD was used to screen for depression in primary care settings (Myers & Weissman, 1980). I used a repeated measures analysis of variance to find out whether prayer (the main independent variable) was effective in reducing depressive symptoms after controlling for gender, ethnicity, and time spent in prayer (control variables).

Definitions

Activism: The belief that the gospel needs to be expressed in various ways from preaching the Gospel to influencing political structures (Burkholder & Cramer, 2012).

Biblicism: A particular regard for the Bible (Old and New Testaments from the Protestant cannon of scripture) as being divinely inspired and preserved (Bebbington, 1989).

Center for Epidemiologic Studies Depression (CESD): A screening measure developed to identify current depressive symptomatology related to major or clinical depression in adults and adolescents. The items on the CESD include depressed mood, feelings of guilt, worthlessness and helplessness, psychomotor retardation, loss of appetit,e and sleep difficulties (Eng & Chan, 2013).

Christianity: The most widely distributed religion in the world, with a total membership that may exceed 1.7 billion people emphasizes the person of Jesus was a historical figure who was an itinerant preacher, social reformer and Savior (Christianity, 2015). Although there are various denominations and sects with varying interpretations of church structure, understanding of human freewill, interpretation of the atonement, and differing interpretations of the sacraments, the main thrust of Christianity is that Jesus died for the sins of mankind and is the only means of salvation (Christianity, 2015).

Some Christians use meditation as well as other people from other religions. Meditation involves two broad concepts. First, a "method definition" of meditation refers to the mental exercises designed to center one's thoughts (Raffone & Srinivasan, 2010). Second, a "state definition" of meditation refers to the altered states of consciousness

which arise from the use of these methods (Nash, & Newberg, 2013). Ordinarily meditation is focused on personal perceptions and thoughts whereas prayer is a focus on communication with the divine.

Conversionism: The belief that human beings need to be converted or adapt a new set of religious beliefs (Bebbington, 1989; Vondey, & William, 2013).

Crucicentrism: A focus on the atoning work of Christ on the cross (Bauder, Mohler, Stackhouse, & Olson, 2011; Bebbington, 1989).

Divine: Related to or proceeding directly from God or a god-like (Divine, 2015). The Divine refers to the one, supreme deity or God.

Ethnicity: Has been described as "ethnoracial distinctions, as historically contingent social construction" (Bobo & Fox, 2003, p. 319). The questions concerning ethnicity classification in the U.S. Census Bureau generally reflect "a social definition of ethnicity recognized in this country and not an attempt to define ethnicity biologically, anthropologically, or genetically" (U.S. Department of Commerce, 2013, para. 10).

Evangelical: Relating to or being in agreement with the Christian gospel especially as it is presented in the four Gospels of Matthew, Mark, Luke, and John in the New Testament (Evangelical, 2015). Bebbington (1989) defined evangelicalism as deeply held convictions related to four areas: activism, Biblicism, crucicentrism, and conversionism.

Gender: Defined as "the attitudes, feelings, and behaviors that a given culture associates with a person's biological sex" (American Psychological Association, 2012, p. 9).

Major depressive disorder (MDD): Requires a set of symptoms for a diagnosis. Basically, MDD is comprised of five or more symptoms that occur over a 2-week period and are not due to a medical condition: depressed mood, anhedonia, a change of more than 5% of body weight in a month, psychomotor disturbance, sleep disturbance, fatigue or loss of energy, feelings of worthlessness, diminished ability to think or concentrate, recurrent thoughts of death, recurrent suicidal ideation and pessimism (American Psychiatric Association, 2013).

Orthodox Christianity: A basic and universal form of Christianity, which has its origins in the apostles. The Apostles' Creed is a reference point into understanding basic Christian doctrine (Beck & Haugen, 2013). The fourth century creed affirms the following: belief in the trinity (God the Father, god the Son and god the Holy Spirit), the virgin birth, the substitutionary death of Jesus, the Lordship of Jesus, the resurrection of the dead, and eternal life (Book of Common Prayer, 2007).

Prayer: A direct intercourse with God. Prayer is the "act of putting oneself in the presence of or conversing with a higher power" (Ehrlich, 2013, para. 10). Prayer is a set order of words used in when communicating with God. There are five types of prayer used within Christianity: adoration, confession, reception, supplication, and thanksgiving (Perez et al., 2011).

Presence: The condition of being present; giving full attention to the matter at hand; often associated with mindfulness. Presence can also be interpreted as the presence of God, or the sense of God's nearness and ability to hear one's voice (Hardon, 1998).

Larkin (2007) defined presence as "the moment is concentrated or focused attention; it means being all there" (p. 1).

Quality of life: Personal well-being or satisfaction with life (Fayers & Machin, 2000). Quality of life is defined as "a state of complete physical, mental and social well-being and to lead an active and productive life" (Eriksson & Lindström, 2007, p. 937).

Religion: Any organized system of practices that pertain to a formal religious institution (Paloutzian & Park, 2005). Religion is the "organized and institutional components of faith traditions" (Paloutzian & Park, 2005, p. 26).

Rituals: The practice of religion within the Christian faith. Christians offer prayer, worship, and read the Bible. They also observe the Lord's Supper (mass), the ritual of initiation into the church (baptism), the rituals of reconciliation (repentance, confession, penance), and the rituals concerning healing, sickness and death (pray over the sick), anoint them, accompany them in their final days, and offer comfort to those bereaved in the ritual of funerals (Cooke & Macy, 2005).

Salutogensis: A term created by Antonovsky (1979) which is a composite of Greek and Latin words meaning the "development of health" and emphasizes the origins of health or wellness (p. 184). Antonovsky believed that health was an interaction between various "stressful and stress relieving, protective and supportive factors" (Hurrelmann, 2012, p. 83).

Sex: "a person's biological status and is typically categorized as male, female, or intersex" (American Psychological Association, 2012, p. 11).

Spirituality: Includes God, interconnectedness of everything in the Universe, and human relationships (Alice-Lun, 2015; Ehrlich, 2013). Spirituality refers to an individual's relationship with God (Bush et al., 2012). Puchalski et al. (2009) defined spirituality as "the aspect of humanity that refers to the way individuals seek and express meaning and purpose and the way they experience their connectedness to the moment, to self, to others, to nature, and to the significant or sacred" (p. 887). Spirituality was also defined as "the personal quest for understanding answers to ultimate questions about life, about meaning, and about relationship to the sacred or transcendent, which may (or may not) lead to or arise from the development of religious rituals and the formation of community'' (Trivedi, 2015, p. 1). Spirituality deals more with the "feelings of the sacred" rather than merely an outward practice of religious duties (Mangione, Lyons, & DiCello, 2016). In sum, spirituality provides a sense of meaning, and purpose which either originates from within or from a transcendent source (Verghese, 2008).

Assumptions

There are several assumptions related to this study. First, it was assumed that a divine transcendent Being (God) exists. Second, it was assumed that Christian Prayer is an effective means of communicating with God. Third, it was assumed that God actively intercedes on behalf of Christians through prayer. Fourth, it was assumed that the elderly adults participating in the study (from which the data set was produced) were honest and forthcoming in providing the information. These assumptions were necessary for many reasons. It can be assumed that in the act of prayer that God hears and answers prayer. From the outset, it was assumed that prayer has value to accomplish what a person

intends for it to do. The assumption that prayer has some value is necessary for the person who is praying.

Scope and Delimitations

A data set was used in this research study. The data set was limited to the type of people interviewed—namely, elderly adults living in the US. The sample was limited to elderly African Americans and Caucasians (66 to 98 years old, 965 participants, 63% women and 37% men, 51% Caucasians, 45% African American, 3% racially mixed, and 1% were some other ethnicity) within the United States. The survey included questions regarding religious status, activities, and beliefs. The questions regarding prayer were set within the Christian framework of understanding. The survey was conducted in 2001 and later in 2004.

The data set was limited to the type of information collected. For example, the depressive symptoms were quantified using the CESD scale (Radloff, 1977). The items from the CESD were: "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." The CESD, like its successor the CESD-R, "measures symptoms defined by the American Psychiatric Association' Diagnostic and Statistical Manual for a major depressive episode" (CESD, 2016, para. 1).

The scope of this study included the effects of prayer on moderate to severe depressive symptoms based on the CESD. The study was focused on the elderly population and the effectiveness of prayer in reducing depression. The differences

between ethnicity, gender, religious activities, and the subjective perception of prayer among those with depression who offer prayer to God were considered. I chose this population as it is a growing population in the United States and depression is common among this community. Approximately 13.3% of the population of the United States is over the age of 65 (Administration on Aging, 2012).

Limitations

This study was limited to an examination of prayer within the Christian framework among the elderly in the United States in a particular data set. A limitation of the study is that the respondents in the data set could have been dishonest in their self-report of depressive symptoms. Another limitation is that this type of research may not be generalizable to other populations (ethnicity, age, and religious beliefs).

Significance of the Study

The significance of this study was to examine the nature of the relationship between Christian prayer and depression in the elderly. This study was based on the SOC theory. Proponents of SOC claim that people's life orientations will have an impact on health (Eriksson & Lindström, 2007). Antonovsky, the founder of SOC, was primarily interested in answering the question: "What helps people to stay healthy and to recover from diseases" (Vossler, 2012, p. 68). Christian prayer is a life orientation that may impact health. If prayer can be identified as a means to decrease depression, then prayer could be translated to practice in psychology. This study may promote positive social change by emphasizing mental health as opposed to mental illness. In the West

individuals are moving toward a mental health model society and are focusing on developing the means of maintaining mental health rather than treating mental illness.

This study may be significant in advancing the notion that prayer is an effective tool in reducing depression. The theory of SOC undergirds this study. SOC strength is an important element in the structure of an individual's personality that aids in the coping and adapting process (Antonovsky, 1979, 1987). It has been claimed that religious activities such as prayer are but a few of the many tasks a person can do to increase positive emotions (Hendricksen & Stephens, 2013). In addition, the amount of time spent in prayer may also influence the outcome of prayer.

This study may promote positive social change by reducing the ill effects of depression in the elderly population. Based upon the results of this research, both researchers and clinicians could develop psychological interventions that are faith-based in which a person can achieve empowerment. Because of this study, researchers may open the door to a more complete partnership between clergy and psychology. Furthermore, other studies may be conducted among other demographic groups. Ultimately this research is aimed at improving the quality of care for elderly people affected by depression. I hope to inspire more research of this kind in the field of gerontology, which may generate multiple treatment interventions for the elderly.

Summary and Transition

In Chapter, I introduced the study. In response to the aging population and the growing reliance on prayer as a form of treatment of depression, psychologists need to become more aware of the ways prayer can be most effective across multicultural

dimensions. The purpose of this quantitative study was to explore the effectiveness of Christian prayer on reducing depressive symptoms in the elderly, after controlling for gender, ethnicity, and time spent in prayer. The SOC theory provided the theoretical foundation of this study.

A data set was used in this research study that was limited to elderly African Americans and Caucasians in the United States. The data set included the religious practice, self-rated evaluation of health, depression, and psychological well-being in a sample of older Americans within the United States. The data set was limited to the type of information collected (eight items from the CESD scale). This study, together with other studies of this nature, could generate a series of discussions between clergy, research psychologists, clinical psychologists, gerontologists, and others about the nature of collaborative clinical work to achieve mental health in the elderly.

In Chapter 2, the literature review is presented. I selected journal articles that directly pertained to depression, prayer, the elderly and SOC theory from PsycINFO, SocIndex, and PsycArticles.

Chapter 2: Literature Review

> I know of no better thermometer to your spiritual temperature than this, the measure of the intensity of your prayer.
>
> –Charles H. Spurgeon, *Prayer: The Proof of Godliness*, 1895

This chapter covers the review of literature related to key concepts such as elderly, depression, the use of religious activity, and the effects of prayer among the elderly. In addition, this chapter offers a more thorough discussion of the SOC theory. The chapter also includes the historic connection between religion and mental health. II also discuss MDD concerning symptoms, etiology, and treatment. Finally, this chapter includes a review of the literature related to the spiritual and religious treatment of MDD.

The Elderly

Trivedi, Subramanyam, Kamath, and Pinto (2015) noted that "old age is seen as the period of life that is associated with wisdom, philanthropic attitude, and spirituality" (p. 1). The elderly can be placed into three categories: "The Young Old," "The Old," and "The Oldest Old" (Pirkl, 2009, para. 10-12). The "Young Old" fall between the ages of 65 to 74 years old. The classification of "Old" is given to people between the ages of 74 and 84 years old. The "Oldest Old" are 85 years and older. The fastest-growing segment of the total population is the oldest old—those 80 and over. Their growth rate is twice that of those 65 and over and almost 4 times that for the total population. In the United States, this group now represents 10% of the older population and will more than triple from 5.7 million in 2010 to over 19 million by 2050 (U.S. Census Bureau, 2010). Over one in every eight, or 13.3%, of the population is an older American (Administration on

Aging, 2012). By 2050, the United States is projected to experience rapid growth in its older population (U.S. Census Bureau, 2010).

Older adults often experience a decline of physical health. It has been established that the declining physical health (e.g., hearing loss, vision loss, etc.) of the elderly results leads to a diminished quality of life (Boi, 2012; Li et al., 2011; Morbidity and Mortality Weekly, 2003; Nirmalan et al., 2005).). Li et al. (2011) noted, "General health and life satisfaction are overall ratings and may relate to both the physical and mental dimensions of HRQOL[health-related quality of life]" (p. 851). Some researchers have demonstrated that elderly adults often experience a decline in a sense of purpose (Hedberg et al., 2011). Although declining health does negatively influence quality of life in the elderly, it has been noted that a sense of purpose does not necessarily decline in all elderly people (Pearson, 2013).

Depression among the elderly is a growing concern. In recent years there has been an increased understanding of the impact of depression on quality of life (Ellison et al., 2012). It has been shown that the chronically physically ill elderly experience poorer mental health than their physically healthy equivalent (Fiske, Wetherell, & Gatz, 2009). Aging brings with it a set of difficulties; declining health and hearing loss in the elderly can lead to depression (Pronk et al., 2013). A loss of purpose, social withdrawal, and subsequent feelings of hopelessness can lead to increased suicidality and magnify the stresses associated with the aging process (Koenig, McCullough, & Larson, 2001; Rasmussen et al., 2010). In addition, it has been demonstrated that older adults have a higher rate of suicide than younger adults (Rayens & Reed, 2014).

Depression has various causes and various treatments. Sun (2012) noted that people with depression experience benefits of attending religious services. Prayer has shown to be effective in some instances in reducing depression (Wachholtz & Sambamoorthi, 2011). Wachholtz and Sambamoorthi (2011) noted that prayer is used as a complimentary form of therapy in the treatment of depression. Moreover, Williams, Keigher, and Williams (2012) demonstrated that many the elderly are involved in an active prayer life. Koenig (2007) also demonstrated the correlation between the severity of depression with lower religious attendance, prayer, Bible reading, and fewer religious beliefs.

Participation in religious activity has been found to aid in the treatment of depression among African Americans. For example, Chatters, Taylor, Lincoln, Nguyen and Joe (2013) noted the benefit of weekly religious service attendance in reducing suicide, which is a common feature of MDD. In their study, a total of 6,082 face-to-face interviews were conducted with persons aged 18 or older (3,570 African Americans, 891 non-Hispanic Whites, and 1,621 Blacks of Caribbean descent). Suicidality was assessed by using the section of the World Mental Health Composite International Diagnostic Interview, which includes a series of questions about lifetime suicidal behaviors. Frequency of religious service attendance was measured by combining two questions: "Other than for weddings or funerals, have you attended services at a church or other place of worship since you were 18 years old?"" and '"How often do you usually attend religious services?" The researchers compared interview results to church attendance.

Chatters et al. concluded that "respondents who attended religious services at least once per week were the least likely to report suicidal ideations" (p. 346).

In this study, I examined the effects of prayer on depression in the elderly population from a selected data set. The data set exclusively examined the Christian religion. Therefore, the religion in this study was traditional, orthodox Christianity also commonly referred to as "mere Christianity" (Lewis, 1952). The sections of this chapter include a discussion of depression, etiology of depression, treatments for depression, the types of prayer and the literature related to the effectiveness in prayer in reducing depression.

Religious practice can be a coping mechanism for older adults. Galek & Porter (2010) noted that religious beliefs provide insight to discovering the relationship between religion and mental health. However, "there is only a small body of literature on the relationship between religiosity and spirituality with the use of mental health services in the elderly population" (Ng et al., 2011, p.143). Therapists and social scientists have explored the ways that religion can influence emotional well-being (Koenig, 2007). In this study, I focused on the influence of Christian prayer on depression in the elderly.

Literature Search Strategy

To compile a literature review, I selected journal articles that directly pertained to depression, prayer, and the elderly. I used PsycINFO, SocIndex, and PsycArticles, using the terms *depression, prayer, elderly,* and *spirituality* to get results. The literature included in the review had an emphasis on the last 5 years, and oldest publication date for

pertinent literature was from 1930. The theoretical perspective I used in this study was the SOC theory (Antonovsky et al., 1971).

Theoretical Foundation

Sense of Coherence

SOC theory was developed by Antonovsky under the salutogenic paradigm in the 1970s because of his study on women experiencing menopause (Antonovsky et al., 1971). He introduced the SOC theory, claiming that peoples' life orientations will have an impact on health (Eriksson & Lindström, 2007). Antonovsky (1992) noted that "rather than measuring a sense of control, I believe it is more to the point to see such people as having a sense of proactive responsibility" (p. 1024). Antonovsky (1979) explained that people cannot be grouped into either physically ill or healthy dichotomies; everyone has a level of health which can be measured on a continuum. Antonovsky (1996) also asked, "Can it be contended that strengthening the SOC of people would be a major contributor to their move toward health?" (p. 16).

SOC involves three components: comprehensibility, manageability, and meaningfulness (Cilliers, 2011; Gassmann, Christ, Lampert, & Berger, 2013; Vossler, 2012). Comprehensibility is the belief that the world makes sense and is predictable and understandable (Vossler, 2012). This also refers to the ability to make sense of events in life from illness to bereavement. Manageability is another component of SOC. This refers to the confidence that a person can cope with demands with the help of resources controlled by self and others (Cilliers, 2011). Those who have a strong sense of manageability believe that stressors are within their control. Meaningfulness is the third

component of SOC. It is the belief that the demands are a challenge instead of a burden (Cilliers, 2011; Vossler, 2012). Meaningfulness has been described as the degree to which life makes sense emotionally (Gropp, Geldenhuys & Visser, 2007). People with a strong sense of meaningfulness try to give these experiences a meaning emotionally and make every effort to cope with the situation (Antonovsky, 1987).

Antonovsky (1979) proposed two mediating factors in the religion-health relationship: social support and lifestyle. One of the processes through which psychoeducation works is in maintaining and enhancing an individual's SOC (Landsverk & Kane, 1998). An individual's SOC strength can be regarded as a crucial element in the structure of an individual's personality that facilitates the coping and adaption process (Antonovsky, 1979, 1987). Langeland et al. (2007) found that a strong SOC predicts well-being and life satisfaction. Gassmann, Christ, Lampert, & Berger (2013) indicated that patients with high SOC scores have lower admission rates to hospitals have a greater level of functioning and are more likely to belief that their medical treatment are effect. In this section, I highlight how SOC and meaning related to religion and coping with older age. Also included is a description of the mechanisms of social support and health behavior. Feigin and Sapir (2005) found that SOC has a great deal of empirical evidence that supports its effectiveness.

Religion has been theorized to affect health through the construction of meaning and the improvement of SOC. Bonelli, Dew, Koenig, Rosmarin, and Vasegh (2012) demonstrated the importance of religious and spiritual beliefs as a coping mechanism in stressful situations. According to Antonovsky's theory, SOC refers to an overall sense of

meaning, coherence, and management of life (Antonovsky, 1979). This has been linked to several health outcomes. The SOC theory mimics the importance of meaning in coping as expounded by Frankl (1973, 1992). According to Frankl (1946;1992), the need for meaning is always prevalent even if the meaning may change. The need for meaning in life is so important that some have argued this need is part of an evolutionary adaption (King & Hicks, 2012; Klinger, 2012; Sommer, Baumeister, & Stillman, 2012). Batthyany and Russo-Netzer (2014) echoed Frankl's beliefs, noting that people are searching for meaning above the material and physical concerns. This research focused on the felt need for people to maintain communication with God via prayer and the potential benefits of prayer.

Krause (1997, 2003) demonstrated that having a religious practice can result in better overall health, and religious meaning (beliefs concerning the cause, nature, and purpose of self and the universe) is predictive of well-being. Religion may be important for the elderly in constructing meaning from suffering. Religion can provide insight to life, define purpose, and increase life satisfaction (Krause, 2003). Krause (2003) also demonstrated that meaning in life and optimism were tied to the religious faith of older adults. Hicks and King (2008) demonstrated that meaning in life was closely linked to religious belief. It has also been noted that the pursuit for meaning is central for people who are high in religious commitment (Hicks & King, 2008)

Another area pertaining to SOC theory is social support. Levin (1994) noted that involvement in religious services promotes social support, a sense of belonging and fellowship. There is some evidence that social relationships impact mental health,

beginning with Durkheim (1951) who studied the relationships between religion, social integration, and suicide. Social participation in religious activities such as church attendance has been found to lessen the frequency of suicidal ideation in elderly adults (Rushing, Corsentinoa, Hamaesa, Sachs-Ericssons, & Steffens, 2013). People who have adequate social support systems have a lower mortality risk (Nicholson, 2012). People who are socially integrated tend to have better health (Ehrlich, 2013). Positive social contact (both in quality and quantity) has shown to improve physical health (Umberson & Monteze, 2010). On the other hand, people with limited social support tend to fair worse from physical illness (House, 2001; Lillyman & Land, 2007). Current estimates of the prevalence of social isolation in community-dwelling older adults ranges from 10% to 43 % (Smith & Hirdes, 2009). Effects of social isolation in the elderly are loneliness, high rates of clinical depression, malnutrition, and malnutrition (Choi & Kimbell, 2009; McCrae et al., 2005; Murphy, 2006; Paul et al., 2006; Victor et al., 2005). The social contact that religious activity affords can offset some of the social isolation that many elderly adults experience.

Proponents of SOC propose that people's life orientations will have an impact on quality of life (Eriksson & Lindström, 2007). According to SOC theory, people with a strong sense of manageability believe that stressors are within their control. Prayer can be thought of as an attempt to gain control of stressful life events like declining health. Koenig (2012) noted that religious or spiritual practice was related to a greater sense of personal control in challenging life circumstances. SOC adherents see demands as a challenge instead of a burden (Cilliers, 2011; Vossler, 2012). In accord with SOC theory,

people with a strong sense of meaningfulness try to give these experiences a meaning and make every effort to positively cope with the situation (Antonovsky, 1987).

Multicultural Psychology

Multicultural psychologists emphasize the need for understanding the racial, ethnic, and gendered experiences of minorities (Reynolds & Constantine, 2004; Robinson, 2005). Historically, professional and academic psychology is embedded within a White European worldview. In recent decades adherents of multicultural psychology have tried to expand professional and academic psychology relative to people of color (Constantine, Myers, Kindaichi & Moore, 2004). Understanding the ethos of African Americans and Caucasians was important when conducting a study that compared the two populations.

Literature Review

In the early 20th century it was assumed by Freud and many of his contemporaries that the modern era with the rise of medical advancements would result in a decline of religious intuitions (Freud, 1930). Despite this claim, religion continues to be a common way of addressing the challenges of aging (Contrada et al., 2004; Idler, 2004). Religion can help provide meaning to suffering and death (O'Connell, 1996).

Religion and Psychology

It has been demonstrated that 93% of Americans believe in God or a higher power (Koenig, 2008). It has also been demonstrated that 88% of the American population identifies with a religious affiliation (Weyand, Laughlin, & Bennett, 2013). Furthermore, nearly three-quarters of U.S. adults identify with the Christian faith tradition (Association

of Religion Data Archives, 2014), and most Americans self-identify as religious (Adams et al., 2015; Newport, 2011). Schuster et al. (2001) noted that 90% of Americans use religion to cope with stress. According to Koenig (2008, 2012), one-fifth of medical patients reported religion as the most important factor in coping and that "65% of Americans indicate that religion is an important part of daily life" (2012, p. 6).

Researchers have long known the social impact of religion on mental health. Religion has been described as any organized system of practices that pertain to a formal religious institution (Paloutzian & Park, 2005). Religiosity can be defined as "shared sets of beliefs and practices that have been developed in community with people who have similar understandings of God or the Transcendent" (Hodge, Bonifas, & Jing-Ann Chou, 2010, p. 3). Religion is present in most cultures and has been practiced for more than 10,000 years (Krause, 2012a). Therefore, from a scientific viewpoint, religion must serve some kind of function or meet some kind of basic human need. Some functions of religion include a sense of belonging in community, forgiveness, and compassion (Krause, 2012a).

Despite its benefits, religion has historically been at odds with psychology. Freud (1930) said of religion: "The whole thing is so patently infantile, so incongruous with reality, that to one whose attitude to humanity is friendly it is painful to think that the great majority of mortals will never be able to rise above this view of life" (p. 22). Freud also regarded religion as "a parcel of illusion that stood in opposition to reality and therefore served as an obstacle to scientific progress" (Rizzuto & Shafranske, 2013, p. 130). Freud often found occasion to announce his unbelief in the divine. To Freud, and

some of his counterparts, religion was simply neurosis and led to anxiety, fear and excessive guilt (Freud, 1930; Rizzuto & Shafranske, 2013). He noted that the negative impact may have outweighed its benefits. Freud believed that religion was simply a "collective neurosis" (Loewetitiial et al., 2011, p.256). Partly because of this influence, psychiatrists today tend to be less religious than the general population (Cook, 2011; Lawrence et al., 2013). Cook (2011, p.15) stated plainly "psychiatrists are less likely to identify with a particular faith tradition, or to believe in God."

Conversely, the general population is favorable to religion while distrusting psychological interventions (Wamser, 2011). In fact, it has been demonstrated that Christians perceive ministers and other clergy more positively than they do mental health professionals (Wamser, 2011). Wamser (2011) concluded: "higher religious fundamentalism was associated with greater preference for religious rather than psychological assistance" (p.234). Trice and Bjorck (2006) noted that Pentecostals, a subclass of Christianity, often claim that the practice of their faith is most effective for treating depression. Religion continues to be an important part of life for many people and its value as a therapeutic tool should be considered.

Religion and Mental Health

The belief in the divine (God) is common among most religions. In historic Christian doctrine God is described with certain immutable characteristics (Lewis, 1952). The prophet Isaiah described God as "the high and lofty One who inhabits eternity" (Isaiah 57:15, KJV). The major tenet of Orthodox Christianity is that God is singular in essence, but three in Person (Craig, 2015; Phan, 2013). This doctrine is unique and

distinct to Christianity (Erikson, 2009; Giles, 2010; Giles, 2012). Each being or person within the trinity has a distinct personality. Trinitarian doctrine is a culmination of both the scripture of the New Testament and the Old Testament (Cary, 1995). Various passages of scripture merge to form this doctrine, which is seen as a fulfillment of Jewish scriptures. For example, the use of the plural pronouns "Us" and "Our" in Genesis 1:26 have been historically interpreted by many Christian theologians to be an introduction of the doctrine of the trinity in the Torah (Pierce, 2007; Rhodes, 2009). Within the Christian faith tradition Jesus has been historically understood to be God (Giles, 2012; Pelikan, 1971; Phan, 2013). In the prologue to the Gospel of John, the author writes "the Word [Jesus] was God" (John 1:1). Taken into consideration that this passage coheres with the confession that God is one (Deut. 6:4; Isa. 46:9). The Holy Spirit is also considered to be God (Giles, 2012). The doctrine of trinity is based on the following syllogism: 1.) Jesus is God but is not the Father or the Holy Spirit, 2.) The Holy Spirit is God but is not Jesus or the Father, and 3.) the Father is God but is not Jesus or the Holy Spirit, 4.) There is only one God. Therefore, God is a Triune Being (Friedman, 2010). Orthodox Christianity recognizes that God is multi-personal (Craig, 2015). As a result, prayers offered to God (Jesus, the Holy Spirit or the Father) are considered a proper spiritual practice.

There are more adherents to Christianity than other religion (Lipka & Hackett, 2015). There are an estimated 2.17 billion Christians in the world which comprises approximately 31.4% of the world's population. Furthermore, Christians are by far, the

largest religious group in the US comprising about 78.3% of the total population. The data set used in this study focused primarily on the Christian faith tradition.

Spirituality has often been equated with religion (Doka, 2011). Spirituality by one definition includes God, interconnectedness of everything in the Universe, and human relationships (Alice-Lun, 2015). At its core, spirituality refers to one's relationship with God (Bush et al., 2012). Spirituality also includes prayer but can be defined broadly as any way of relating to that which is regarded as sacred (Agishtein et al., 2013; Pargament & Sweeney, 2011). Spirituality has been defined as "the experiences and expressions of one's spirit in a unique and dynamic process reflecting faith in God or a supreme being; connectedness with oneself, others, nature, or God; and integration of the dimensions of mind, body, and spirit" (Gaskamp, Sutter, & Meraviglia, 2006, p. 8). It is interesting to note that while aging is typically characterized as a process of physical decline, the spiritual element is one that continues to grow throughout life (Gaskamp et al., 2006). Spirituality may be thought of as personal while religion, however, is more "collective and is a belief shared within a group of people" (Doka, 2011, p.100).

According to many researchers, religion and spirituality have shown to improve quality of life as it has been linked to greater mental and physical health (Krause, 2011; Weisman de Mamani et al, 2010). Krause and Hayward (2015) concluded: "The findings from our study further indicated that awe of God is associated with greater life satisfaction" (p.57). Religious practice has been shown to increase life satisfaction, lower depression, and anxiety (Hackney & Sanders, 2003, p. 51). Religious practice provides a sense of purpose and meaning in life (Francis, 2013; Lewis, 2013; Walker, 2013). Some

researchers suggest that people who feel more grateful to God tend to enjoy better physical and mental health (Rosmarin et al., 2011). Religious service attendance, attachment to God, and religious and or spiritual importance were found to reduce the negative effect of stress (Ellison et al., 2012; Kasen et al., 2012). Dein and Pargament (2012) noted that attachment to God reduced the effects of stress. According to Dein and Pargament (2012) it was not how often a person prays, rather it is the belief in God's ability to answer prayers which leads to greater feelings of self-worth and health. Religiousness is correlated with the virtue of humility (Aghababaei et al., 2014; Krause et al., 2015). Humility in turn often leads to compassion (LaBouff et al., 2012). Therefore, religion has been shown to have some practical value.

Despite the above-cited studies, the claims about religion's beneficial effects on physical and psychological health has been somewhat mixed (Hwang et al., 2011). In addition, much of the research on religion and or spirituality in connection to health has also concentrated mostly on Jewish and Christian faiths, with little attention devoted to adherents of minority religions (Hwang et al., 2011). While further study regarding the benefits of other religions could be beneficial the focus of this study is on the Christian perspective. The benefits of religion on mediating the symptoms of mental illness have been noted in previous paragraphs. Furthermore, spiritual practices have shown to improve quality of life (Weisman de Mamani et al., 2010). There are also positive effects of prayer on MDD.

Major Depressive Disorder

Depression is a real concern. MDD is a common ailment and is the leading cause of disability throughout the world (Gosling, 2014; Young & Skorga, 2013). In fact, MDD was the second leading cause of years lived with disability in the U.S. in 2010 (Murray & Lopez, 2013). It is estimated that depression and anxiety are expected to become one of the three leading causes of disease burden by 2030 (Young & Skorga, 2013). MDD is one of the most common psychiatric diseases with an estimated lifetime morbid risk for MDD of 29.9% (Kessler, 2012). Approximately 6.3% of adults in the United States suffer from moderate to severe depressive symptoms (Shim et al., 2011; Sorenson, 2013). The diagnosis of depression has increased over time in general (Marcus & Olfson, 2010). Approximately 10% to 16% of primary care patients fulfill criteria for a diagnosis of MDD (Rubio-Valera et al, 2015). Depression is associated with higher rates of morbidity, mortality, and medical costs (Davydow et al., 2011; Pearce et al., 2015). Nevertheless, depression affects all ages, races, and SES groups.

Depression is common among the elderly (Ingersoll-Dayton, Torges & Krause, 2010). Gilman (2013) emphasized: “depression and suicide are major public health concerns, and often go unnoticed among the elderly”. Depression is a leading risk factor for suicide in older adults (Department of Health and Human Services, 2011). In the United States the percentage of elderly adults (those over 65 years) reporting depressive symptoms increased from 1992 to 2005 (Akincigil et al., 2011). Arve (2012) found that there was an increase of depressive symptoms in the elderly population in Finland from 2001 to 2006. In primary care settings the rate was even higher on average.

Astonishingly, according to one study, the rate of depression among older women was reported to be 40% and among men was reported to be 38% (Murphy et al., 2015). Akincigil et al. (2012) noted that when untreated depression can reduce the quality of life and shorten lifespan.

Depression, a source of emotional suffering, is a common malady among the elderly (Luppa et al. 2012). George (2011) stated that older adults who are depressed have twice as many hospitalizations for medical reasons as those who are not depressed, and they have higher morbidity rates and slower recovery after surgery.

Ferrari, Charlson, Norman, Flaxman, and Patten (2013) reviewed the data from one study and noted that depressive disorders are one of the leading causes of years lived with disability. It has been shown that 5% of males and 8% of females over the age of 60 experience depression (Centers for Disease Control, 2012). The diagnosis and treatment of depression has increased over time in general (Marcus & Olfson, 2010). It has been noted that approximately one-third of people over the age of 65 years report loneliness, with even higher rates among those aged over 85 (Hauge & Kirkevold, 2012). In home health care, estimates of 27.5% for significant depressive symptoms were found (Gellis, 2006). According to Spangenberg et al. (2011) elderly women who live alone, are widowed, and less educated tend to have the greatest likelihood of experiencing depression. Fiske, Wetherell & Gatz (2009) noted that half or more of geriatric major depression represents a new condition arising in old age. Morimoto, Kanellopoulos, & Alexopoulos (2014) purported: “the number of community residents with both depressive symptoms and impaired cognition doubles every five years after the age of 70” (p. 138).

To be diagnosed with MDD a set of symptoms must be present. The Diagnostic and Statistical Manual of Mental Disorders (5th ed.; DSM–5; American Psychiatric Association, 2013) is the most widely accepted categorization used by clinicians and researchers for the classification of mental disorders. MDD is diagnostically defined as five or more of the following symptoms that occur over a 2- week period and are not due to a medical condition (American Psychiatric Association, 2013). Depressed mood can be subjective (feelings of sadness) or observations made by others. Other symptoms of MDD are markedly diminished interest or pleasure in all, or almost all, activities most of the day, nearly every day, significant weight loss when not dieting or weight gain (e.g., a change of more than 5 percent of body weight in a month), psychomotor disturbance (agitation or retardation) nearly every day, or decrease or increase in appetite nearly every day (American Psychiatric Association, 2013). Sleep disturbance (insomnia or hypersomnia nearly every day), fatigue or loss of energy nearly every day are other symptoms of MDD (American Psychiatric Association, 2013). Feelings of worthlessness or excessive or inappropriate guilt (which may be delusional) nearly every day (not merely self-reproach or guilt about being sick), diminished ability to think or concentrate, or indecisiveness that occurs nearly every day are commonly experienced symptoms of MDD (American Psychiatric Association, 2013). In addition, recurrent thoughts of death (not just fear of dying), recurrent suicidal ideation without a specific plan, or a suicide attempt or a specific plan for committing suicide, and pessimism are typical features of MDD (Beck, 1967; Strunk et al., 2005). The symptoms must cause clinically significant distress or impairment in social, occupational, or other important areas of functioning and

last for two weeks (Vitiello, 2009). Also, the symptoms are not due to the direct physiological effects of a substance or a general medical condition (American Psychiatric Association, 2013).

MDD Etiology

There are multiple likely etiologies or causes of depression such as biological structures, stress, grief, faulty and or irrational thoughts, and social factors. A person experiencing depression often has one or more of the etiological factors. Each of these etiologies is considered below.

Biological structures have an important role in depression. It has been purported that the metabolism of neurotransmitters, specifically serotonin (5HT) and noradrenaline (NA) play an important role in emotional disturbances- especially mood disorders (Gottfries, 2001). Sorenson (2013) found a link between depression and the activity levels of the prefrontal cortex, the orbitofrontal cortex, and parts of the anterior cingulate cortex (Sorenson, 2013). In addition, MDD symptoms are linked to the deep limbic system of the brain (Masten et al., 2011; Oltedal, 2015).

Stress can also lead to depression (Hammen, 2005). According to Simon (2013) "individuals with a high level of work-related stress are more than twice as likely to experience a major depressive episode, compared with people who are under less stress" (para. 165). Simon also noted that some people are genetically prone to depression after they experience a stressful life event. The symptoms of depression and prolonged exposure to stress often overlap. However, there is significant variation in how people

respond to life events, which may result in negative affect (Nolen-Hoeksema & Watkins, 2011).

Grief is another common cause of depression. Grief has been defined as the emotional and physical response to death (Ringold, 2005). Grief includes a wide range of emotions, including sadness, anger, guilt, and despair. Typically, the symptoms of grief diminish as time passes and with support from family and friends. However, MDD should be considered if the duration of grief lasts more than 6 months and is accompanied by persistent feelings of guilt, preoccupation with thoughts about death, feelings of worthlessness, psychomotor retardation, and the inability to perform daily activities (Pies, 2012; Ringold, 2005). It is important to note that MDD should not be diagnosed in the immediate context of bereavement since grief is understood to be a natural process (American Psychiatric Association, 2013; Pies, 2012).

According to cognitive behavioral theory the cause of MDD is due to faulty thinking patterns (Depression, n.d.t; Traeger, 2013). Some of the faulty thinking patterns are the result of magnifying the worst in situations (Insel, 2015). A person can have a negative mental view regarding self, the world, and the future. Benjamin et al. (2014) noted that the basic premise of CBT is irrational thinking, which leads to maladaptive feelings and behavior.

According to interpersonal psychotherapy (IPT) a depressed person's negative interpersonal behaviors cause other people to reject him or her (Nemade, 2007). This sense of rejection in turn leads to depression. Therefore, IPT relies on social interplay to create the symptoms of depression.

According to the psychodynamic approach, MDD is caused by anger converted into self-hatred or "anger turned inward" (Nemade, 2007, para. 4). For example, a child growing up in a home with inconsistency of parental affection and attention may feel alone, confused, helpless, and ultimately, angry. When not resolved this anger can turn into depression.

Social inequalities in major depression begin early in the life course and continue into adulthood (Gilman et al., 2013). In addition, some aspects of inequality (e.g., low socioeconomic status or financial strain) are predictive of a markedly elevated risk of depression (Gilman et al., 2013; Gilman et al., 2012). Therefore, social systems that produce inequality can lead to depression among some people.

MDD Treatment

The treatment of depression is varied (Kalibatseva & Leong, 2014). There is an increasing requirement for mental health workers to be trained to deliver evidence-based psychotherapies for the treatment of depression (Crowe et al., 2012). In the following paragraphs, CBT, IPT, DBT, ECT, and psychopharmacological interventions will be briefly discussed.

The most common psychotherapy for the treatment of depression is CBT, which was developed by Beck (Beck et al., 1987; Bruijniks et al., 2015; Pössel & Black, 2014). CBT is the most studied form of psychotherapy for MDD (Cuijpers et al., 2013; Honyashiki et al., 2014). This type of therapy focuses on the interplay between one's beliefs and the resulting emotional and behavioral consequence (Beck, 1976; Floyd & Scogin, 1998; Pössel, & Black, 2014; Snowden, Steinman & Frederick, 2008.; Traeger,

2013; Vitiello, 2009). CBT involves both homework assignments and regular therapeutic sessions in which the assignments are outlined and adapted to the needs of the client (Ruwaard, 2009). CBT is a tool that is commonly used to treat mood disorder symptoms (Hausmann et al., 2007; Traeger, 2013).

CBT has proven to be effective in treating depressive symptoms (Gosling, 2014; Lopez & Basco, 2015; Oestergaard &, Møldrup, 2011; Rucci et al., 2011; Serfaty, et al, 2009; Vitiello, 2009). CBT has shown to be particularly effective in treating depression in the elderly population (Krishna et al., 2013). CBT can be employed alone or in combination with medication (Vitiello, 2009). CBT has found to be effective in treating depression and, with modified CBT-I, insomnia (Ashworth, et al, 2015). Scogin et al. (2013) demonstrated that the CBT is particularly effective in treating depression among the elderly.

IPT is another tool used in the treatment of depression (Blanco et al, 2014; Bruijniks et al., 2015; Oestergaard & Møldrup, 2011; Weissman, et al., 2010). In fact, IPT was developed for the treatment of depression in outpatient setting (Weissman, 2010). IPT is traditionally employed when the depressive symptoms include grief, role and or interpersonal disputes, role transitions, and interpersonal deficits are present (Weissman et al., 2000). Interpersonal therapy (IPT) is most often used on a one-on-one basis to treat less severe forms of depression (De Mello et al., 2005). The goal of IPT is to assist people with examining the quality of interpersonal relationships comparing them with the onset of depressive symptoms (Raue & Areán, 2015). IPT unlike CBT focuses primarily on interpersonal conflicts.

Like CBT, IPT is focused on what is happening in the present (Markowitz & Weissman, 2004). IPT usually involves up to 20 weekly sessions, each lasting approximately one hour (Swartz, 2015). IPT focuses on a person's social and interpersonal functioning, affect, and current life events (Rafaeli & Markowitz, 2015). CBT and IPT are among "the most well established short-term therapies for the treatment of depression" (Bruijniks et al., 2015, p. 2). However, studies by Hunot et al (2010) and Rosello et al (2008) indicated that people who participated in group CBT had reduced depressive symptoms than those who participated in group IPT.

Dialectical behavior therapy (DBT) is also used to treat depression (James et al., 2011). DBT is a psychological treatment method that combines CBT with two additional techniques: dialectics and mindfulness. The dialectics rely on discussion or dialog to explore and resolve issues (Freedman & Duckworth, 2013). Mindfulness is used to encourage individuals to become more aware of and present in the moment so that concerns about the future or rumination about the past do not interfere with their ability to enjoy life (Jennings & Apsche, 2014). DBT was developed as a technique for patients suffering from borderline personality disorder (BPD), and has subsequently been shown to be effective for treating patients with a variety of symptoms and behaviors associated with mood disorders (Gunderson, 2011).

While open to debate, electroconvulsive therapy (ECT) is considered one of the most effective yet stigmatized treatments for depression and has been recommended as a viable treatment option when other treatments have failed (Berlim, 2013; Dunne & McLoughlin, 2012; Kellner et al., 2010; Loo et al., 2012). Oltedal et al. (2015) stated:

"The idea that convulsions could treat mental illness can be traced to the 16th century, when camphor oil was used to induce convulsions" (p. 1). The ECT procedure involves applying electrical stimulation to the brain. ECT has been shown to be more effective in interrupting suicidal thoughts than pharmacotherapy (Bailine et al., 2010; Gescher, 2011). The primary side effect of ECT includes memory loss (Oltedal et al., 2015). However, for some people ECT is the only effective treatment (Oltedal et al., 2015).

The most common and effective psychopharmaceutic treatment for most people suffering from MDD is a class of medications called selective serotonin reuptake inhibitors or SSRIs (Altamura, et al., 2013; Miller, et al., 2014; Zhang, et al., 2015; Zhang, Becker, & Koesters, 2014). Selective serotonin reuptake inhibitors (SSRIs) work by focusing on the neurotransmission systems (Zhang et al., 2015). Zhang et al. (2015) noted that after applying SSRI treatment (paroxetine, 20 mg/d) for 12 weeks, depressive symptoms had greatly decreased. SSRIs have become the first-line antidepressant drug treatment of depression and replaced tricyclic antidepressants (TCA) and monoamine oxidase inhibitors (MAOI) due to fewer side effects (Zhang, Becker, & Koesters, 2014). Miller et al. (2014) found that adults aged 65 years or older were found to have lower rates of suicidal behavior when on anti-depressants.

Oftentimes, treatments working in unison produce the best efficacy. CBT, in conjunction with antipsychotic medication, is effective in reducing distressing symptoms and hospitalizations, when compared to medication alone (Waller, 2014). Low-intensity practice has been shown to be effective in treating depression in the elderly (Unützer &

Park, 2012; Strawbridge et al., 2012). It has also been shown that yoga can decrease depressive symptoms (Patel et al., 2012).

Psychotherapy, CBT in particular, has proven to be a useful tool in treating mood disorders in the elderly. Studies on the psychological treatments of depression in older adults have increased considerably in the past years (Cuijpers, Karyotaki, Pot, Park, & Reynolds, 2014). Gould, Coulson and Howard (2012) demonstrated that CBT is effective for treating anxiety disorders in older people but is less effective than people of working age. Stanley et al. (2014) demonstrated that CBT is effective for late-life generalized anxiety disorder (GAD).

CBT and problem-solving therapy may be more effective than non-directive counseling among elderly (Cuijpers et al., 2014). Wuthrich & Rapee (2013) demonstrated that older adults receiving CBT had significant improvements compared to the non-treatment group. Alexopoulos et al. (2011) demonstrated that problem solving therapy (PST) is more effective than supportive therapy (ST) in reducing symptoms of MDD in older patients. PST is a 5-step problem-solving model, and subsequent sessions enhanced PST skills (Areán, 2003). CBT falls under the category of PST and involves clients learning problem solving skills, which are then applied to specific life problems associated with psychological and somatic symptoms (Pierce, 2012). PST has been shown to be as effective in the treatment of depression as antidepressants (Pierce, 2012). ST is like person-centered psychotherapy in which therapists create a comfortable, nonjudgmental environment by demonstrating genuineness, empathy, and acceptance of patients without imposing any judgments on their decisions (Sacks, 2000).

Religion, Spirituality and Christian Prayer in treating MDD

An active religious life seems to be effective in reducing depressive symptoms (Sun et al., 2012). Religious participation can be defined as any engagement in religious activities within the worship community (Taylors, Chatters, & Nguyen, 2013). Sun (2012) demonstrated that elderly adults who attend religious services are more likely to report fewer depressive symptoms, and that higher levels of intrinsic religiosity resulted in a greater decline in depressive symptoms. Krause (2012b) noted that people who have an active religious life tend to cope with stress better than with people who are less religious. It has also been demonstrated that the higher the involvement in religious activity the lower the occurrence of depression (McCoubrie & Davies, 2006). However, one study noted that increased levels of depression lowered belief in the efficacy of religious coping (Loewenthal, Cinnirella, Evdoka & Murphy, 2001).

Those elderly who participate in religious activities have better health (Krause, 2012c; Levin & Chatters, 2008; Wachholtz & Sambamthoori, 2013). For example, Jegindo et al. (2013) noted that religious participants reported a higher rate of pain reduction compared to nonreligious participants. Religious faith has shown to be effective in reducing depressive and anxiety symptoms (Koenig, 2007; Maciejewski et al., 2012; Sternthal, Williams, Musick, & Buck 2012). Having a sense of purpose in life is related to greater health and well-being (Boehm & Kubzansky, 2012; Holahan, 2011; Morack, 2013; Windsor, 2015).

Participation in religious services can have both a positive and a negative impact on emotional well-being. Mangione, Lyons, and DiCello (2016, p.255) defined religion

as “codified sets of practices” while defining spirituality as “the more amorphous feelings or experience of the sacred, not necessarily connected to religious practice.” It has been demonstrated that attending religious services and having intrinsic religious values lead to greater meaning, less anger, and more social integration which aids in reducing depressive symptoms (Yanez et al., 2009). Religious attendance has shown to reduce the risk of suicide in the elderly (Robins & Fiske, 2009). However, religious doubt can lead to an increase in depressive symptoms (Krause, 2012b). Religion and spirituality has an important distinction.

Spirituality also has notable benefits. For example, there is a link between spiritual well-being and positive mental health outcomes (Koenig, 2008). Pössel et al. (2014) noted that: “getting an expected response to a prayer may create the feeling that one has a close relationship with God that, in turn, heightens one’s sense of security and ultimately bolsters one’s sense of well-being” (p. 906). Many researchers have demonstrated that religious and spiritual factors lead to psychological well-being (Paloutzian & Park, 2013; Pargament, Mahoney & Shafranske, 2013). Boyle et al. (2012) noted that greater purpose in life reduce the harmful effects of aging on cognition in the elderly.

Concerning older adults, Bush et al. (2012) stated: “the extent to which one feels one has a strong religious support system (congregation benefits) may be an especially important predictor of general and psychological well-being” (p 200). Spirituality and spiritual well-being also reduce the incidence of depression and mitigates the effects of depression (McClain, Rosenfeld, & Breitbart, 2003; Sternthall et al., 2012). Spiritual

awareness can provide older adults hope and support while coping with a terminal illness (Moberg, 2005). Engagement in spirituality is predictive of decreased substance use after substance abuse treatment such as group therapy and individual counseling (Robinson et al., 2011).

Christian prayer, an expression of spirituality, is essentially a direct intercourse with God. Implicit in the practice of prayer is the belief that God is a personal, powerful and all-knowing Being (Velarde, 2008). Prayer or simply talking to God can be oral or solely a mental practice. Prayer can be defined as any thanksgiving or request made to God (Roberts, Ahmed, Hall, & Davidson, 2009). It can be an emotional outcry or a formal recitation. Prayer is described in the King James Version (KJV) of the Bible a common translation of the holy writings of Christians as "beseeching (pleading, begging) the Lord" (Ex. 32:11 KJV); "pouring out the soul before the Lord" (1 Sam. 1:15 KJV); "praying and crying to heaven" (2 Chr. 32:20); "seeking unto God and making supplication" (Job 8:5 KJV); "drawing near to God" (Ps. 73:28 KJV); and "bowing the knees" (Eph. 3:14 KJV). It is assumed that God is a personal Being and is able and willing to communicate with mankind. It is also assumed that God has personal control of all things, and of all His creatures and all their actions (Easton, 2015). While there are several types of prayer, within mainstream Christianity there are commonly agreed upon types of prayer such as adoration, confession, reception, supplication, and thanksgiving (Perez et al., 2011).

Prayer is a common coping strategy and is widely used to "address health concerns by individuals with a wide array of physical and mental health diagnoses" (Dein

& Pargament, 2012 p. 242). Like spirituality the religious act of prayer is effective in treating depression, and prayer has been associated with lower levels of distress and greater well-being (Maciejewski et al., 2012; Ladd & Spilka, 2002). Prayer is often used when people are experiencing events that they cannot control such as poor physical health (Grossoehme et al., 2011). Older adults have high levels of religious participation, such as prayer and meditation, and subjective religiosity (Krause, 2008; McFadden, 2013; McFadden, 2015). Older adults who engage in prayer have greater life satisfaction and lower levels of depression than adults who do not (Taylor, Chatters, & Jackson, 2007).

There are ethnic differences among the elderly regarding spirituality and the management of chronic illness (Skarupski, Fitchett, Evansbe, & Mende de Leon, 2013). Skarupski, et al (2013) demonstrated that older African Americans show lower levels of life satisfaction than do older Caucasians. Studies of spirituality and health among people from different racial and or ethnic groups have resulted in an increased understanding regarding the role of ethnicity (Jimenez, Bartels, Cardenas, Dhaliwal, & Algeria, 2012). Akincigil, Olfson, Siegel, Zurlo, Walkup, and Crystal, (2012) purported that disparities exist between racial and ethnic groups because of the difference in the type of encounter between the patient and physician during the clinical encounter.

Sternthal et al. (2012) examined the religious practices, beliefs, and mental health variations across ethnicity. They interviewed 3,103 participants (1,240 African Americans, 981 non-Hispanic White Americans, 802 Hispanic Americans, and 80 from other groups) from 2001 to 2003. They also measured religious service attendance, and private religious activity (how often respondents prayed privately in places other than

Church). They included the following categories of religious denominations: Catholic, Protestant, other, and no religion. Finally, they also considered religious saliency (the extent to which religion carried over into all other dealing in one's life). It was discovered that African Americans seemed to benefit more from religious involvement than Caucasians as evidenced by subjective assessment of reduced depressive symptoms (Sternthal et al., 2012). Sternthal et al. (2012) also concluded that worship service attendance and self-forgiveness were inversely associated with anxiety for Caucasian Americans only. It has been demonstrated that "religion becomes especially important to Hispanic Americans in times of distress" (Sternthal, Williams, Musick & Buck, 2012 p. 181). The key elements of religious practice such as the quest of meaning and interpersonal forgiveness were shown to improve mental health in each of the ethnic groups in the study.

Spirituality has mental and physical health benefits for the elderly. Hayward and Krause (2013) purported that the religious attendance increases among the elderly. Lawler-Row and Elliot (2009) demonstrated that prayer is a protective factor for depression. Krause (2004) also noted that: "many older people define their lives based upon religion, and many interpret the things that happen in their lives through it" (p.1221). Marche (2006) also commented: "religious coping methods have also been reported to have a positive effect on the physical, mental, and emotional health of seniors" (p. 53). Marche (2006) noted that a host of religious practices such as prayer, reading of scripture, ritual, meditation, and talking with caregivers, ministers or clergy "can have psychological, physical, spiritual, and emotional benefit" (p. 59).

Religious-based CBT has shown to be effective in treating depression in adults with strong religious beliefs (Berk, et al., 2015). Stanley et al. (2011) demonstrated that incorporating spirituality and religion into counseling for anxiety and depression was desirable. Their study included 66 adults (55 years or older) from earlier studies of cognitive-behavioral therapy for late-life anxiety and or depression in primary care. Participants completed standardized measures by telephone or in-person. Most participants (77–83%) in the study preferred including religion and or spirituality in therapy for anxiety and depression.

Mitchell and Weatherly (2000) examined the data from two independent random samples of older adults (one including 2,178 Christians and the other including 868 Christians) aged 65 and older to assess the effects of Christian religious practices (church attendance, participation, religious beliefs & prayer) in combination with medical treatment upon mental health. They found that limited participation in church activities was related to poorer self-rated mental health and more symptoms of depression. They also found that elderly African American females were more likely than other ethnic groups to profess religious beliefs and to participate in church-related activities.

There are ethnic differences in the role of spirituality in the self-management behaviors among the elderly participants who suffer from chronic illness (Harvey & Siverman, 2007). Harvey and Silverman (2007) conducted in-depth interviews of 88 people (47 African American and 41 Caucasian) men and women aged 65 years and older and found that African American respondents were more likely to report being very or moderately spiritual (85.2%) than Caucasian respondents (75.6%). They also

demonstrated that African Americans were more likely to report the following on a daily basis: feeling God's presence (85.2% compared to 48.8% for Caucasian), feeling deep and inner peace (59.6% compared to 36.6% for Caucasian), thinking life is part of a larger spiritual force (76.7% compared to 46.4% for Caucasians), and looking to God for strength, support, and guidance (93.6% compared to 78.1% for Caucasians). However, it is important to note that spirituality was used as a coping strategy in a variety of ways (e.g., prayer, Bible study, and worship service attendance) to effectively deal with life's daily challenges (Harvey & Silverman, 2007).

Williams et al. (2012) studied 500 elderly African American participants. The focus of the study was on the connection between the spiritual and religious affiliation on quality of life. They discovered that: (a) strong identification with religious institutions, high levels of attendance and participation in religious activities, (b) perceived support from fellow church members, and (c) strong reliance on spirituality and their sense of connection to God were sources of strength in coping with personal challenges.

Sun et al. (2012) examined the religious behavior of 1,000 community-dwelling participant's ages 65 years and older (median age 75 years) in a longitudinal study consisting of baseline data and four waves of follow-up data collected annually. The control variables included depressive symptoms, sociodemographic factors (gender, marital status, & education), health (number of sick days in bed, physical limitations, and cognitive status.), and perceived social support (availability of, sensitivity to, interest in, and understanding of friends and family in providing assistance). At baseline, the participants who attended religious services reported fewer depressive symptoms. The

participants with the highest levels of intrinsic religiosity had a decline in depressive symptoms over the 4-year period. On the other hand, those with the lowest intrinsic religiosity had an increase in depressive symptoms. Sun et al. (2012) suggested that a possible treatment for depression could be patient-centered interventions that increase intrinsic religiously.

In a study by Ballew, Hannum, Gaines, Marx, and Parrish (2012) it was noted that low levels spirituality "may be detrimental to psychological well-being" (p. 1393). The examiners explored the correlates of spiritual experiences over a 2-year period in a sample of older adults (N = 164; mean age 81.9 years) living in a continuing care retirement community. The scores from the Daily Spiritual Experiences Scale were analyzed for changes over time to determine the relationship between chronic illness impact and markers of psychological well-being (as measured by the Geriatric Depression and Life Satisfaction scales). Using a Mixed ANOVA and t tests showed a significant difference by gender (P\.01) in years 1 and 2, with women reporting higher levels of spiritual experiences than men. It was noted that more depressive symptoms exist in conditions where chronic illness and low spirituality are present.

The social context of religious activity may also contribute to a reduction of depression and anxiety symptoms in the elderly. Rushing et al. (2013) noted that among people with MDD that attended church frequently had less current suicidal ideation and that this relationship was to some extent mediated by perceived social support. It has been demonstrated that spirituality focused group intervention of elderly survivors of

interpersonal trauma was shown to be effective in reducing anxiety symptoms (Bowland, Edmond, & Fallot, 2012).

Summary and Conclusions

In summary, many Christians turn to prayer when facing a medical or psychiatric crisis. Prayer can provide solace and peace from worry and sadness. Gender was a control variable that was used in this study. Gender encompasses more than sex characteristics. It involves the personal perception and attitude related to biological sex characteristics within the cultural milieu. The definition of gender used in the data set is reflective of the 2000 US Census. Ethnicity was the second variable that will be used in this study. Ethnicity is not merely defined biologically or anthropologically but socially and culturally. The definition of ethnicity was also consistent with that of the US Census Bureau. The frequency of prayer was the third control variable. The range of answers in this variable was from "Several times a day" to "never". Finally, prayer was the primary independent variable used in this study.

As noted, people are religious and inherently spiritual. Unfortunately, neither religion nor spirituality insulates one from the effects of MDD. Fortunately, religious practice and spirituality (namely prayer) have been shown to be effective in reducing symptoms of MDD and producing positive health behaviors (Sun, 2012; Wachholtz & Sambamoorthi, 2011). Stanley et al (2011) demonstrated that older adults prefer religion and spiritual practices incorporated into therapy for the treatment of depression and anxiety.

The underlying philosophical framework for this study is SOC. Adherents to SOC claim that peoples' life orientation will have an impact on health (Eriksson & Lindström, 2007). Furthermore, those who have a strong sense of manageability believe that stressors are within their control. Meaningfulness is the third component of SOC.

Lastly, influences of ethnicity, gender, and time spent in prayer among this population concerning the effects on reducing the symptoms of depression are not entirely known. Understanding the ethos of African Americans and Caucasians is important when conducting a study that compares the two populations. Understanding gender differences is also important when considering the effectiveness of prayer. It is not clearly known if religious activities or prayer are effective in reducing depression in the elderly population. It was hoped that this study would fill the gap in the current literature by examining if prayer is effective in reducing depressive symptoms in this population while using the mixed ANOVA which measures differences between group means and their variation among and between groups.

Chapter 3: Research Method

The purpose of this quantitative study was to explore the effectiveness of prayer in reducing depressive symptoms in the elderly (adults ages 65 and older) after controlling for other variables such as gender, ethnicity, and time spent in prayer. Previous researchers have not examined all the above-mentioned variables together in the exclusive context of elderly individuals with depression. Examining the variables was important so that future researchers can better understand the factors that influence the effectiveness of prayer. Furthermore, previous research in this field has been primarily focused on the effectiveness of spiritual practices (prayer, meditation, and worship) in treating depression among numerous populations (Krause, 2012b; McCoubrie & Davies, 2006). In this study, I examined if Christian prayer was beneficial in reducing symptoms of depression while controlling for differences between ethnicity, gender, and the time spent in prayer of elderly adults. The study was based on a previously collected data set. This chapter includes the design and rationale of the study, the methodology, a review of the archival data, and the variables involved in the study.

Research Design and Rationale

A quantitative approach was used in this study. A quantitative methodology is used to demonstrate establish relationships between two or more variables. This method is often used when working with larger samples to reduce bias and apply the findings to the general population. In addition, during this quasi-experimental longitudinal study, I examined the effectiveness of prayer in reducing depressive symptoms after controlling for ethnicity, and gender, along with time spent in prayer. Repeated measures analysis of

covariance (mixed ANOVA) was used to analyze the differences between group means and their variation among and between groups. The repeated measure mixed ANOVA compares the averages (scores on the CESD) across one variable (prayer) that are based on repeated observations (Wave 1 and Wave 2) while controlling for confounding variables (gender, and ethnicity) and a continuous variable (frequency of prayer).

The purpose of this study was to determine whether prayer was effective in reducing depressive symptoms. I used a quantitative design, which was ideal because of the use of an existing data set. By using quantitative research, I examined numerical data compiled into categories of ethnicity, gender, and the amount of time spent in prayer. This type of design is often used in experimental research. The data set used in this study was most compatible with a repeated measures mixed ANOVA design. This design was used to measure change over time in the sample population by comparing the 2001 survey with the 2004 survey.

The dependent variable was the subject's perception related to well-being—depressive symptoms as measured by the CESD. I examined a data set to determine if prayer has a benefit in reducing depressive symptoms and if certain factors enhance or reduce the effectiveness of prayer. The overall research question was: After controlling for the effects of gender, ethnicity, and time spent in prayer does the use of (Christian) prayer reduce depressive symptoms?

The data set included data collected in two waves. The first wave occurred in 2001 and the second occurred in 2004. The purpose of the survey was to collect data on the various religious groups within the elderly population in the United States. The

survey included demographic variables such as age, ethnicity, gender, years of formal education, and yearly income. It also included the participants perception related to physical health. Mental health symptoms, particularly depressive symptoms were measured by utilizing eight items from the CESD.

The overall research question was: After controlling for gender, ethnicity, and time spent in prayer are there differences on depressive symptoms in the elderly by time (Wave 1 vs. Wave 2)?

$H_0$1: After controlling for ethnicity, prayer does not reduce depressive symptoms by time (Wave 1 vs. Wave 2).

$H_1$1: After controlling for ethnicity, prayer does reduce depressive symptoms by time (Wave 1 vs. Wave 2).

$H_0$2: After controlling for gender, prayer does not reduce depressive symptoms by time (Wave 1 vs. Wave 2).

$H_1$2: After controlling for gender, prayer does reduce depressive symptoms by time (Wave 1 vs. Wave 2).

$H_0$3: After controlling for frequency of prayer, prayer does not reduce depressive symptoms by time (Wave 1 vs. Wave 2).

$H_1$3: After controlling for frequency of prayer, prayer does reduce depressive symptoms by time (Wave 1 vs. Wave 2).

Methodology

This study was based on a quantitative longitudinal research study with one independent variable (prayer), three control variables (the amount of time spent in prayer,

gender, and ethnicity), and one dependent variable (depressive symptoms based on the eight items from the CESD). The main purpose of the study was to investigate how the independent variable affected the depressive symptoms among the elderly after controlling for the other variables.

Population

In this study, I used a data set. The data set was entitled "Religion, Aging, and Health Survey, 2001, 2004" (Krause, 2006). The samples were taken from Wave 1 and Wave 2 interviews. The sample consisted of 1,500 elderly adults living in the contingent U.S.

Sampling and Sampling Procedures

The data in this study were collected in two waves. The first wave was collected in 2001 and consisted of 1,500 interviews. The sampling frame consisted of all eligible persons contained in the Health Care Financing Administration Medicare Beneficiary Eligibility List. The list contains the name, address, sex, and race of essentially every person in the United States. According to the user guide, a 5-step process was used to draw the sample. First, researchers drew a 5% sample of names from their master file. These names were selected with a simple random sampling procedure to include individuals who were 65 years of age or older. In the second stage of the sampling procedure, the 5% file was split into two subfiles: one containing older Caucasians and one containing older African Americans. Each file was sorted by county, and then zip code within each county. Then, in the third stage, an nth interval was calculated for each subfile based on the total number of eligible records. Following a random start, 75 nth

selections were made in each subfile. In the fourth phase of the sampling strategy, primary sampling units (PSUs) were formed by selecting approximately 25 names above and 25 names below each case identified in step three. Finally, in the last step, sampled persons within each PSU were recruited for an interview with the goal of obtaining approximately 10 cases per PSU. The final sample consisted of 748 older Caucasians and 752 older African Americans (1,500 participants).

Wave 2 was collected in 2004. This wave consisted of re-interviews with 1,024 of the original participants. For the Wave 2 interview, 75 refused to participate, 112 could not be located, 70 were too ill to participate, 11 moved to a nursing home, and 208 were deceased, which resulted in 1,024 participants (63% female) in the United States. Their ages ranged from 67 to 98 (M = 77.3, SD = 6.1). The racial breakdown was as follows: 51% were Caucasian, 45% African American, 3% racially mixed, and the remaining 1% was some other race or ethnicity. Concerning marital status: 47% of the participants were currently married, 40% widowed, 8% divorced, 4% never married, and 1% separated. The religious identification of the participants was: 63% Protestant, 18% Catholic/Roman Catholic, 15% some other Christian faith, 1% some non-Christian faith, and 3% no religious preference.

The data in this study were derived by comparing both waves. The data included the religious practices, perceptions of religious practices, self-rated health, depression, and psychological well-being in a sample of older African Americans and Caucasians (65 years and older) within the United States. The sampling frame consists of individuals from the CMS beneficiary list. The questions addressed religious status and activities

among people who are currently active in the Christian faith, former Christians, and those who have never participated in religion.

Archival Data

I used the National Archive of Computerized Data on Aging (NACDA), the aging program within Interuniversity Consortium for Political and Social Research (ICPSR). The data were collected from an ongoing national probability sample survey—the Religion, Aging, and Health Survey. This survey was based on face-to-face interviews with older adults aged 65 and over living in the coterminous United States (residents of Alaska and Hawaii were excluded). The sampling frame consisted of individuals from the CMS beneficiary list, which contains "virtually every person in the United States" (Krause, 2006, p. 3). The information in this study was restricted to individuals who were currently practicing Christians, as the effectiveness of Christian prayer was the focus of this study. The sample consisted of 5% from the master file, including adults aged 65 years and older. The total was separated into subfiles: older Whites and older African Americans. Each file was sorted by county and zip code. Finally, the list of names was reduced using a systematic sampling procedure to achieve a manageable quantity. This data set included religion, self-rated health, depression, and psychological well-being. A limitation to using NACDA data is that it excluded those in jail, those active in the military, and homeless individuals.

The questions in the data set 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. The demographic variables included age, ethnicity, and gender. I obtained permission to use the data set by contacting ICPSR . A copy of the terms of use is in Appendix A.

Instrumentation and Operationalization of Constructs

The data used for this study originated from archival data that were created and are currently maintained and distributed by the National Archive of Computerized Data on Aging (NACDA), the aging program within ICPSR. NACDA is sponsored by the National Institute on Aging (NIA) at the National Institutes of Health (NIH). This data collection was originally funded by the United States Department of Health and Human Services (National Institutes of Health, National Institute on Aging). According to their website, NACDA's mission is to "advance research on aging by helping researchers to profit from the under-exploited potential of a broad range of data sets" (NACDA, 2016, paragraph 1). The data set utilized various instruments in the collection process such as the Center for Epidemiologic Studies Depression Scale-Revised (CESD-R; Eaton, et al, 2004), and a questionnaire designed to address the frequency, purpose, and perceived effectiveness of prayer and religious activities.

The Center for Epidemiologic Studies Depression Scale (CESD) was created in 1977 (Radloff, 1977). According to Carleton et al (2013): "Internal consistency was acceptable for the current undergraduate (Cronbach's α=.91), community (Cronbach's α=.94), rehabilitation (Cronbach's α=.92), clinical (Cronbach's α=.85), and National Health and Nutrition Examination Survey (NHANES; Cronbach's α=.85) samples" (p. 5). The average inter-item Pearson correlation with the reverse-scored items (i.e., positive

affect/anhedonia) was .34 for the undergraduate sample, .43 for the community sample, .38 for the rehabilitation sample, .23 for the clinical sample, and .26 for the NHANES sample (n=2,814; 56% women). The average inter-item Pearson correlation without the reverse-scored items (i.e., positive affect/anhedonia) was .37 for the undergraduate sample, .44 for the community sample, .40 for the rehabilitation sample, .25 for the clinical sample, and .33 for the NHANES sample (Carleton et al, 2013). Lewinsohn, Seeley, Roberts, and Allen (1997) examined the use of the CESD in the effectiveness of diagnosing depression in the elderly. The researchers noted that age did not have a significant negative effect on the psychometric properties or screening efficacy of the CESD. In sum, the CESD is effective in screening depressive symptoms in the elderly community residing adults.

Depressive symptoms were measured by selecting eight of the items from the CESD scale (Eaton, et al, 2004): “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”. The items were measured using a four-point Likert scale ranging from one (rarely or none of the time) to four (most or all of the time). The scores were then compiled into the composite score “depression”. Using these values to compute reliability estimates with a formula provided by DeShon (1998) yielded a reliability estimate of 0.88 indicating that this measure has good reliability.

In this questionnaire the frequency of prayer was quantified in the following way: "How often do you pray by yourself?" The answers were set in a Likert Scale as follows: "Several times a day", "Once a day", A Few times a week", "Once a week", "A few times a month", "Once a month", "Never", "No answer", "Not sure" and "Decline to answer". The next questions asked were: "When you pray by yourself, how long does the average prayer last?" The answer range was from 1-97 minutes or 1-97 hours.

Data Analysis Plan

The first undertaking was the selection of a set of independent variables to determine their effect on the dependent variable. The hypotheses of interest relate to the independent variable's (prayer yes/no) influence on the dependent variable (depressive symptoms) after controlling for the frequency of prayer, ethnicity, and gender. Using this type of analysis, I examined the effects of multiple independent variables on the dependent variable. This analysis utilized to determine the effectiveness of prayer in reducing depression in individuals from the data set.

SPSS 21.0 for Windows was used to analyze all data. Descriptive and inferential statistics was calculated for the sociodemographic data. Descriptive statistics was used to summarize and describe data. The nominal data (prayer yes/no, ethnicity, and gender) and categorical data (frequency of prayer) were compared to the average composite score of depressive symptoms as measured by the composite score obtained from the CESD as used in the questionnaire. Inferential statistics was used to make generalizations about the population from the sample. The information collected from this study was used to

draw conclusions related to the overall population of elderly Christian adults living in the United States.

A repeated measures design uses the same subjects across different periods of time (2001 to 2004). This design is used in a longitudinal study in which change over time is assessed. This method will be conducted to determine if there is a causal relationship between the variables of gender, ethnicity, and frequency of prayer with the levels of depression in elderly adults in the sample. P-values determine the cut-off and provide statistical significance. The standard p-value is <0.05, which means that there is a 5 out of 100 (1 in 20) chance that the influence was caused by accident. In this study, an allowable 5% of the scores may fall in this critical region while the null hypothesis is upheld (Gravetter & Wallnau, 2007). Confidence intervals will be used to assist in the interpretation of data by placing upper and lower bounds on the likely size of any true effect.

Threats to Validity

The validity of this study can cause an error due to outside factors or its study design. Validity consists of four distinct types: internal, external, construct, and statistical (Vogt, 2007). Validity accounts for the relevance of research. Common threats to validity include selection, and measurement bias. Threats to validity will be discussed below.

External Validity

External validity refers to the generalizability of the research findings to similar situations. This study contains the following threats to external validity:

1. Subject variability is the extent with the applicability or generalizability outside of the immediate research environment. The data was limited to structured interviews with elderly adults aged 66 and over living in living in the coterminous United States (residents of Alaska and Hawaii were excluded). The sampling frame consisted of individuals from the Centers for Medicare and Medicaid (CMS) beneficiary list. Therefore, the results may not be generalizable to the population.

2. The questionnaire used in the collection of this data was limited to the types and degrees of Christian religious activity. This study was narrow in scope. Therefore, the results may not be generalizable to other faiths or religious expression.

3. The data were limited to the subject's perception of depressive symptoms only. Therefore, any subjective benefits of prayer reported in this study are exclusively in relationship to depressive symptoms and not any other symptoms of mental illness.

4. The data were limited to Caucasians and African Americans only. Therefore, the effects of this study may be generalized to other races or people of other cultures.

Internal Validity

Internal validity refers to the structure of experiment is done. Internal validity seeks to avoid confounding. A research study that is high in internal validity has a greater degree of confidence than a study with low internal validity.

Several threats to internal validity exist concerning the archival data which may influence the results of the study.

1. The data were collected by other researchers. I was not involved in the data collection process. Therefore, the veracity of the data is contingent upon the integrity of those who collected the information. It is assumed that the researchers were compliant with the ethics of data collection in research. I had no ability to observe and verify the data collection process.

2. The data collection phase can be influenced by tendencies of the examiners when collecting the data. The interviewers who contacted the subjects and conducted the interviews were subjected to human error and bias.

3. The data collection phase can be influenced by bias of the examinees. In other words, examinees could have falsified results to distort depressive symptoms or the effects of religious activity on their lives.

4. The variables in the study were coded by the previous researchers and cannot be verified by. The coding process is subject to human error.

5. The degree of depressive symptoms was measured by using eight of the 20 items from the CESD scale. Eight items on depression may not exhaustively measure depression.

6. The questions related to prayer and other religious activities are not exhaustive. More recent measures encapsulate and quantify prayer and religious activities more adequately.

7. The examinee's perception of the effectiveness of prayer in treating depression is a threat to internal validity. The religious interventions may not have a significant positive influence on the effects of depression.

8. Selection bias is somewhat of a concern related to this study. The researchers who collected the data selected subjects who were from the Centers for Medicare and Medicaid (CMS) beneficiary list. This sample relates specifically to people who participate in the social pay source insurance programs.

9. The archival data is not subject to a control group. The lack of a control group means that any detected change over time cannot be attributable solely to effects of prayer on depressive activity.

Ethical Procedures

As mentioned previously, I utilized an archival data set in this study. It is expected the Walden University Institutional Review Board (IRB) would allow use of the data for the purposes of this study. A copy of the IRB proposal has been provided in the appendices of this discussion. Because the current study used archival data I did not have access to any confidential participant data to including name and address. I did not have access the consent forms that were used in the data collection process. Consistent with the principles of the APA Ethical Principles of Psychologists and Code of Conduct (American Psychological Association, 2002), participants in this archival study were protected by being allowed to give informed consent before voluntarily participating, and being able to withdraw at any time. Responses were not linked to individual respondents, assuring anonymity, results were only presented in the aggregate and the data were kept

confidential. No information disseminated from this study contained personally identifying information. The electronic data will be stored on a secure hard drive for at least seven years. After this time, the data will be destroyed unless it is needed for additional research applications. The data continue to be managed by the NACDA the aging program within ICPSR.

Summary

A quantitative study was used to explore the effectiveness of prayer in treating depression in elderly Christians (adults ages 65 and older). The variables included prayer (yes/no), gender, and ethnicity, and the frequency of prayer. The one dependent variable was depressive symptoms as measured by eight items from the CESD. The main purpose of the study was to investigate how the independent variables, both singly and in combination, might be related to the depressive symptoms among the elderly. A repeated measures analysis of covariance design examined the same subjects across time. This method was conducted to determine if the use of prayer reduced levels of depression in elderly adults after controlling for the gender, ethnicity, and frequency of prayer in the sample.

Chapter 4: Results

Introduction

The purpose of this study was to examine whether the use of Christian prayer decreases depressive symptoms in the elderly after controlling for gender, ethnicity, and frequency of prayer. This study was designed to address the following research question: After controlling for gender, ethnicity, and time spent in prayer are there differences on depressive symptoms in the elderly by time (Wave 1 vs. Wave 2)? The research hypotheses were:

$H_0$1: After controlling for ethnicity, prayer does not reduce depressive symptoms by time (Wave 1 vs. Wave 2).

$H_1$1: After controlling for ethnicity, prayer does reduce depressive symptoms by time (Wave 1 vs. Wave 2).

$H_0$2: After controlling for gender, prayer does not reduce depressive symptoms by time (Wave 1 vs. Wave 2).

$H_1$2: After controlling for gender, prayer does reduce depressive symptoms by time (Wave 1 vs. Wave 2).

$H_0$3: After controlling for frequency of prayer, prayer does not reduce depressive symptoms by time (Wave 1 vs. Wave 2).

$H_1$3: After controlling for frequency of prayer, prayer does reduce depressive symptoms by time (Wave 1 vs. Wave 2).

This chapter contains the findings of the statistical analyses conducted to address the research question and hypotheses. First, details about the data collection and

descriptive statistics of the sample are presented. Then the results of the analysis for each hypothesis will be described. This chapter concludes with a summary of the findings.

Data Collection

The archival data analyzed for this study was retrieved from the National Archive of Computerized Data on Aging website on August 14, 2017. The data set contained a total of 1,500 cases in Wave 1 and 1,024 in Wave 2. Descriptive statistics for the demographic variables of interest are presented in Table 1. A large majority of the participants in the data set reported their ethnicity as White (n = 847, 82.7%), and most of the participants in the data set were women (n = 645, 63.0%). The largest proportion of participants in the data set indicated that they prayed several times a day (n = 477, 46.6%) and 4.8% of participants (n = 49) indicated that they never prayed.

Table 1

Descriptive Statistics of Demographic Variables

Variable	Frequency	Percent
Ethnicity		
Caucasian	847	82.7
African-American	173	16.9
Asian or Pacific Islander	1	0.1
Other Race	3	0.3
Gender		
Male	379	37.0
Female	645	63.0
Marital Status		
Currently married	705	47.0
Widowed	600	40.0
Divorced	120	8.0
Never married	60	4.0
Separated	15	1.0

(table continues)

Variable	Frequency	Percent
Frequency of Prayer		
Decline to answer	3	0.3
Not sure	9	0.9
Several times a day	477	46.6
Once a day	315	30.8
A few times a week	84	8.2
Once a week	20	2.0
A few times a month	26	2.5
Once a month	12	1.2
Less than once a month	29	2.8
Never	49	4.8

Depression at both Wave 1 and Wave 2 was measured by eight items of the CESD scale. The responses to the eight items of the CESD were averaged at each period to create depression composite scores at Wave 1 and Wave 2 for each participant in the data set. Descriptive statistics of the composite scores are displayed in Table 2.

Table 2

Descriptive Statistics for Depression Scores

Variable	Mean	Std. Deviation
Depression (Wave 1)	1.52	0.59
Depression (Wave 2)	1.46	0.60

Study Results

To address the research question and hypotheses, a series of repeated-measures mixed ANOVAs were conducted. The between-subjects' independent variable in this analysis was use of prayer. Use of prayer (yes or no) was determined by the frequency of prayer variable; participants who indicated that they prayed with any frequency (i.e., answers ranging from less than once a month to several times a day) were coded as "yes" and participants who indicated that they never prayed were coded as "no." Participants who indicated "not sure" or who declined to answer the frequency of prayer question were not included in the analysis. The within-subjects' dependent variable in this analysis was depression (measured at Wave 1 and Wave 2). The covariates in this analysis were ethnicity, gender, and frequency of prayer. Ethnicity was coded such that White = 1, Black = 2, African-American = 3, Asian or Pacific Islander = 4, Native American or Alaskan native = 5, mixed racial background = 6, and other race = 7. Gender was coded such that male = 1 and female = 2. Frequency of prayer was coded such that "several times a day" = 1, "once a day" = 2, "a few times a week" = 3, "once a

week" = 4, "a few times a month" = 5, "once a month" = 6, "less than once a month" = 7, and "never" = 8. A separate mixed ANOVA was conducted for each covariate.

Hypothesis 1

Prior to interpreting the mixed ANOVA for ethnicity, the assumptions of normality, homogeneity of variance, and homogeneity of covariance were tested. Normality means that the dependent variables follow a normal distribution. This was tested using Shapiro-Wilk tests. The Shapiro-Wilks test for normality is designed to detect all departures from normality. The results of the test for depression at both Wave 1 and Wave 2 were significant (p-values < .001), indicating that the dependent variables were not normally distributed. However, the mixed ANOVA is considered robust against deviations from normality when the sample size is large (Stevens, 2009), so the analysis was continued. Homogeneity of variance and covariance means that the variance and covariance matrices between groups are similar. This was tested using Levene's test and Box's M test. Levene's test is used to check that variances are equal for all samples when the data come from a non-normal distribution. Box's M statistic is used to test for homogeneity of covariance matrices. The results of these tests were not significant (all p-values > .05), indicating that these assumptions were met.

The results of the mixed ANOVA for ethnicity are presented in Table 3. The main effect of use of prayer was not significant, $F(1, 1006) = 0.09$, $p = .769$, indicating that there was no overall difference in depression between people who prayed and people who did not pray after controlling for ethnicity. The main effect of ethnicity was not significant, $F(1, 1006) = 1.31$, $p = .252$, indicating that there was no overall difference in

depression across ethnicities. The main effect of time was not significant, $F(1, 1006) = 1.40$, $p = .237$, indicating that there was no overall change in depression from Wave 1 to Wave 2 after controlling for ethnicity. The interaction between use of prayer and time was not significant, $F(1, 1006) = 1.59$, $p = .208$, indicating that change in depression over time did not differ depending on use of prayer after controlling for ethnicity. The null hypothesis—stating that, after controlling for ethnicity, prayer does not reduce depressive symptoms by time—was not rejected.

Table 3

Mixed ANOVA with Ethnicity Covariate

Source	Type III Sum of Squares	*Df*	Mean Square	*F*	Sig.	Partial Eta Squared
Within-Subjects Effects						
Time	0.36	1	0.36	1.40	.237	0.00
Time x Use of Prayer	0.41	1	0.41	1.59	.208	0.00
Error	261.94	1006	0.26			
Between-Subjects Effects						
Use of Prayer	0.04	1	0.04	0.09	.769	0.00

Ethnicity	0.59	1	0.59	1.31	.252	0.00
Error	450.26	1006	0.45			

Hypothesis 2

Prior to interpreting the mixed ANOVA for gender, the assumptions of normality, homogeneity of variance, and homogeneity of covariance were tested. Normality was tested using Shapiro-Wilk tests. The results of the test for depression at both Wave 1 and Wave 2 were significant (p-values < .001), indicating that the dependent variables were not normally distributed. However, mixed ANOVA is considered robust against deviations from normality when the sample size is large (Stevens, 2009), so the analysis was continued. Homogeneity of variance and covariance was tested using Levene's test and Box's M test. The results of these tests were not significant (all p-values > .05), indicating that these assumptions were met.

The results of the mixed ANOVA for gender are presented in Table 4. The main effect of use of prayer was not significant, $F(1, 1006) = 0.15$, $p = .698$, indicating that there was no overall difference in depression between people who prayed and people who did not pray after controlling for gender. The main effect of gender was significant, $F(1, 1006) = 14.78$, $p < .001$, indicating that there was an overall difference in depression between genders. The main effect of time was not significant, $F(1, 1006) = 0.00$, $p = .98$, indicating that there was no overall change in depression from Wave 1 to Wave 2 after controlling for gender. The interaction between use of prayer and time was not

significant, $F(1, 1006) = 1.66$, $p = .199$, indicating that change in depression over time did not differ depending on use of prayer after controlling for gender. The null hypothesis—stating that, after controlling for gender, prayer does not reduce depressive symptoms by time—was not rejected.

Table 4

Mixed ANOVA for Gender Covariate

Source	Type III Sum of Squares	*df*	Mean Square	*F*	Sig.	Partial Eta Squared
Within-Subjects Effects						
Time	0.00	1	0.00	0.00	.978	0.00
Time x Use of Prayer	0.43	1	0.43	1.66	.199	0.00
Error	262.68	1006	0.26			
Between-Subjects Effects						
Use of Prayer	0.07	1	0.07	0.15	.698	0.00
Gender	6.53	1	6.53	14.78	< .001	0.01
Error	444.32	100	0.44			

Hypothesis 3

Prior to interpreting the mixed ANOVA for frequency of prayer, the assumptions of normality, homogeneity of variance, and homogeneity of covariance were tested. Normality was tested using Shapiro-Wilk tests. The results of the test for depression at both Wave 1 and Wave 2 were significant (p-values < .001), indicating that the dependent variables were not normally distributed. However, the mixed ANOVA is considered robust against deviations from normality when the sample size is large (Stevens, 2009), so the analysis was continued. Homogeneity of variance and covariance was tested using Levene's test and Box's M test. The results of these tests were not significant (all p-values > .05), indicating that these assumptions were met.

The results of the mixed ANOVA for frequency of prayer are presented in Table 5. The main effect of use of prayer was not significant, $F(1, 1006) = 0.15$, $p = .698$, indicating that there was no overall difference in depression between people who prayed and people who did not pray after controlling for frequency of prayer. The main effect of frequency of prayer was not significant, $F(1, 1006) = 0.67$, $p = .412$, indicating that there was no overall difference in depression by frequency of prayer. The main effect of time was not significant, $F(1, 1006) = 2.20$, $p = .138$, indicating that there was no overall change in depression from Wave 1 to Wave 2 after controlling for frequency of prayer. In sum, frequency of prayer (among people who prayed) did not have an impact on the treatment of depression. However, a closer comparison of Wave 1 and Wave 2 revealed

that the interaction between use of prayer and time was significant, $F(1, 1006) = 4.55$, $p = .033$, indicating that change in depression over time differed depending on use of prayer after controlling for frequency of prayer.

Pairwise comparisons were conducted to determine the nature of the interaction (see Table 6). The pairwise comparisons revealed that depression significantly decreased from Wave 1 ($M = 1.53$, $SE = 0.02$) to Wave 2 ($M = 1.46$, $SE = 0.02$) for people who prayed ($p = .002$), but not for people who did not pray ($p = .091$). The null hypothesis—stating that, after controlling for frequency of prayer, prayer does not reduce depressive symptoms by time—was rejected.

The key to understanding this result is knowing the difference between the main effects (which were not significant) and the interaction effects (which was significant). As stated previously, the three independent variables in this analysis are prayer (whether they prayed or not), time (Wave 1 vs. Wave 2), and frequency of prayer (covariate). As demonstrated, prayer and frequency of prayer (covariate) are two separate variables.

The main effects inform if an overall change occurred across one of the variables after controlling for frequency of prayer. The "main effect of time" indicates that in a comparison of depression at Wave 1 and Wave 2, without regard for whether people prayed or not, there is no difference. In other words, overall levels of depression were about the same at Wave 1 and Wave 2.

However, the interaction between prayer and time was significant. This means that there are differences in depression over time depending on whether people prayed or not. The pairwise comparisons demonstrate what those differences are. In this case,

considering only people who prayed, there is a difference in depression between Waves 1 and 2. On the other hand, when considering the people who did not pray, there is no difference in depression between Waves 1 and 2.

Table 5

Mixed ANOVA with Frequency of Prayer Covariate

Source	Type III Sum of Squares	*df*	Mean Square	*F*	Sig.	Partial Eta Squared
Within-Subjects Effects						
Time	0.57	1	0.57	2.20	.138	0.00
Time x Use of Prayer	1.19	1	1.19	4.55	.033	0.01
Error	261.92	1006	0.26			
Between-Subjects Effects						
Use of Prayer	0.07	1	0.07	0.15	.698	0.00
Frequency of Prayer	0.30	1	0.30	0.67	.412	0.00
Error	450.54	1006	0.45			

Table 6

Pairwise Comparisons for Interactions Between Use of Prayer and Time

Use of Prayer	Mean Difference in Depression (Wave 1 – Wave 2)	*SE*	Sig.	95% CI Difference
No	-0.24	0.14	.091	[-0.52, 0.04]
Yes	0.08	0.02	.002	[0.03, 0.12]

Note. Covariate was frequency of prayer.

Summary

Three mixed ANOVAs were conducted to address the research question and hypotheses. I stated in the first null hypothesis that after controlling for ethnicity, prayer does not reduce depressive symptoms by time. The mixed ANOVA controlling for ethnicity did not produce any significant main effects or interactions, suggesting that use of prayer did not influence depression after controlling for ethnicity. Therefore, the first null hypothesis was not rejected. I stated in the second null hypothesis that after controlling for gender, prayer does not reduce depressive symptoms by time. The mixed ANOVA controlling for gender did not produce any significant main effects or interactions, suggesting that use of prayer did not influence depression after controlling for gender. Therefore, the second null hypothesis was not rejected. I stated in the third null hypothesis that after controlling for frequency of prayer, prayer does not reduce depressive symptoms by time. The mixed ANOVA controlling for frequency of prayer

produced a significant interaction, suggesting that change in depression over time differed depending on use of prayer after controlling for frequency of prayer. Specifically, depression decreased over time for people who prayed, but not for people who did not pray. Therefore, the third null hypothesis was rejected. Chapter 5 will contain a discussion of these findings in the context of previous literature and the theoretical framework of the study. Implications and directions for future research will also be discussed.

Chapter 5: Discussion, Conclusions, and Recommendations

In this study, I examined whether Christian prayer was beneficial in reducing symptoms of depression among elderly adults while controlling for amount of time spent in prayer, gender, and ethnicity. The study was based on a previously collected data set that included 1,500 participants in the first wave (2001) and 1,024 in the second wave (2004). The study was conducted to address the concern of depression among the elderly population (adults over 65 years old).

Interpretation of Findings

I examined the effects of prayer in reducing depressive symptoms. The findings of this study build on the work of some of the researchers reviewed in Chapter 2. Previous research in this field has been primarily focused on the effectiveness of spiritual practices (prayer, meditation, and worship) in treating depression among various populations (Chatters et al.; Galek & Porter, 2010; Koenig, 2007; Wachholtz & Sambamoorthi, 2011). It has been demonstrated that prayer is a common coping strategy and is widely used to "address health concerns by individuals with a wide array of physical and mental health diagnoses" (Dein & Pargament, 2012, p. 242). The use of community religious practice and spirituality have been shown to improve quality of life because it has been linked to greater mental and physical health (Krause, 2011; Weisman de Mamani et al., 2010). Spirituality and spiritual well-being also reduce the incidence of depression and mitigate the effects of depression (McClain, Rosenfeld, & Breitbart, 2003; Sternthall et al., 2012). In this study, I confirmed the results of previous studies that depression decreased over time for people who prayed.

An absence of spiritual practices such as prayer may have an adverse effect on people as well. Ballew et al. (2012) noted that low levels of spirituality "may be detrimental to psychological well-being" (p. 1393). Ballew et al. also noted that more depressive symptoms exist in conditions where chronic illness and low spirituality are present.

In this study, I found that depression decreased over time for people who prayed but not for people who did not pray. By utilizing the pairwise comparison method, I was able to demonstrate a difference in depression between Waves 1 and 2 for people who prayed. Furthermore, when focusing on people who prayed there was a notable decrease in depressive symptoms between Wave 1 and Wave 2. On the other hand, when considering the people who did not pray, there was no difference in depression between Waves 1 and 2. These findings are in accord with previous research. For example, previous researchers have demonstrated that prayer is effective in treating depression (Maciejewski et al., 2012). Ladd and Spilka (2002) also suggested that prayer is associated with lower levels of distress and greater well-being.

In contrast, in this study the variables of ethnicity and gender did not influence the effectiveness of prayer in reducing depressive symptoms. The use of prayer was not significant in reducing depression between people who prayed and people who did not pray after controlling for ethnicity, as there were no notable differences between ethnic groups related to the effectiveness of prayer over time. However, contrary to the conclusions of this research, Sternthal et al. (2012) found that African Americans seemed

to benefit more from religious involvement (prayer, corporate worship, etc.) than Whites, as evidenced by subjective assessment of reduced depressive symptoms.

Previous researchers have demonstrated that religion and spirituality have been shown to improve quality of life as it has been linked to greater mental and physical health (Taylor et al., 2007). Religious attendance has been shown to reduce the risk of suicide in the elderly (Robins & Fiske, 2009), and religious practice can increase life satisfaction, lower depression, and anxiety across adulthood (Hackney & Sanders, 2003). Furthermore, having an active religious life seems to be effective in reducing depressive symptoms (Sun et al., 2012).

The research design used in this study is unique because it is not typically used to explore theses effects. To my knowledge, this is the first study where comparisons were made between group means (scores on the CESD) and their variation among and between groups across time while controlling for gender, ethnicity, and frequency of prayer. The research gap addressed in this study was not the effect of prayer on depression, which has been concluded in previous studies. The gap in this research was to discover the effectiveness of prayer in the elderly population when controlling for ethnicity, and gender over time. I did not find evidence of the effects of gender, ethnicity, or frequency of prayer on depressive symptoms over time among the elderly.

The results of this research confirm previous findings and serve to supplement the notion that prayer is negatively correlated with decreases in depressive symptoms over time. Taylor et al. (2007) demonstrated that older adults who engage in prayer have lower levels of depression than adults who do not. It has been previously established that

practicing religion and spirituality has been shown to benefit mental health in the elderly and in the overall population (Krause, 2011; Tabak, 2014; Weisman de Mamani et al., 2010). Marche (2006) also demonstrated that prayer has a positive effect on the physical, mental, and emotional health of the elderly. The results of this study support the conclusions of previous studies.

Prayer, as a coping technique, empowers the individual to make sense of and manage the stressors of life. As I concluded, prayer can have positive benefits in reducing depressive symptoms. Sun et al. (2012) suggested that a possible treatment for depression could be patient-centered interventions that increase intrinsic religiosity. This patient-centered intervention could use prayer and be reinforced by the SOC theory.

SOC theory involves three core concepts (Cilliers, 2011; Gassmann, Christ, Lampert, & Berger, 2013; Vossler, 2012). First, the world, despite the disorder and randomness, can be understood even in moments of personal pain. This is called *comprehensibility*. Second, a person can cope with the stress of life the help of self and others, which is called *manageability*. Stress can be managed and controlled. Third, the demands of life can be thought of as a test rather than a problem, which is called *meaningfulness*. The most difficult conditions of life can have a purpose and a meaning. For many, prayer, the intercourse with God, allows some to understand, cope with, and discover meaning in the pain of life.

Prayer generally occurs within a coherent religious or metaphysical framework. Bonelli, Dew, Koenig, Rosmarin, and Vasegh (2012) demonstrated the importance of religious and spiritual beliefs as a coping mechanism in stressful situations. This

metaphysical or religious framework provides not only an understanding of suffering but a way out in terms of emotional relief. In this study, I demonstrated prayer to be more effective in reducing depression over time when compared to the depressive symptoms of individuals who did not pray.

The effectiveness of SOC principles is not contingent upon ethnicity or gender. Likewise, the effectiveness of prayer in reducing depressive symptoms was not influenced by ethnicity or gender. The effectiveness of prayer appears to be related to its persistent use over time. In other words, depression significantly decreased over time for people who prayed. The act of prayer, like SOC, provides a sense of manageability over depressive symptoms. This indicates that prayer may have some psychological benefits that is not related to ethnicity or gender.

Limitations of the Study

As with any study there are limitations that prevent it from being perfect. First, I should stress that the study was conducted with elders in the United States. The findings of this study may not be generalizable to other populations such as those outside the United States, or those under the age of 65.

Second, the findings of my study are limited to a relatively narrow intervention of Christian prayer. Therefore, the assumption of effectiveness of prayer over time may not be demonstrated among other faith traditions. Furthermore, given the diversity of Christian traditions, the findings of this study do not address traditions outside of the mainstream of Christian practices and beliefs.

Third, the effectiveness of prayer appears to be in its persistent use and application. However, the findings of my study do not imply conclusively that prayer alone was the cause for the reduction in depressive symptoms. While those who engaged in prayer had a decrease in depression it may be that the same group engaged in and received the benefits of the social connectedness that may come with corporate worship, which are common among those who routinely practice their faith (Krause, 2012a; Yanez et al., 2009).

Fourth, the means of quantifying the severity of depression was based on only using eight of the 20 items from the CESD scale. Eight items on depression may not exhaustively measure depression. It can be argued that a more exhaustive measure should be used to quantify depressive symptoms.

Fifth, the findings may not be generalizable to other ethnic groups as the focus of this study was exclusively on African Americans and Caucasians within the United States. Other ethnic groups may have a greater or lesser degree of responsiveness to Christian prayer. The data set did not include other ethnic groups.

Sixth, when considering the effects of prayer on the treatment of depression in the elderly the use of this statistic is weak. The purpose of this design is to determine the relationship between an independent variable and a dependent variable. While this type of research is effective in establishing relationships between variables it has limitations. For example, I had no control over other variables and thereby cannot manipulate them. In the end, I cannot be certain that the independent variable caused the changes in the dependent variable.

Seventh, there are limits to any archival study. Archival research relies on examining data sets to look for patterns or relationships. This type of research has some notable disadvantages. For example, the data could be unreliable due to error in the collection process. In other words, I had little or no control over what data had been collected, and how. Also, I cannot definitively conclude causal relations from this archival research because I did not control and manipulate all variables that may have played a role. As noted, using archival data provides little or no control over the study population, design, or measurements. As a result, important confounding variables may not have been measured or recorded. In addition, archival data may not reflect the current trends, habits, behaviors or attitudes of a culture. Furthermore, the published data set in this study was not compiled to address the research questions that were outlined for this study.

Finally, this analysis was focused on the participants who were selected from the CMS beneficiary list which relates specifically to people who participate in the social pay source insurance programs and may not adequately sample elderly adults in the upper socioeconomic classes.

Recommendations

Future research into the effectiveness of prayer in reducing depressive symptoms might be usefully focused on subdividing the elderly into young-old (65 to 74), middle-old (75 to 84), and oldest-old (85+). The subgroups could be compared to each other and compared to themselves over time. This may be an effective way of determining the

effectiveness of prayer among the subgroups of elderly. If differences exist, then treatment interventions could be tailor made to suit the subgroups.

A future researcher could interview another population of elderly adults from different ethnic groups in order to examine any differences between ethnic groups on the people's perceptions about prayer determine the effectiveness of prayer. The researcher could draw conclusions about the relationship between perceptions of prayer and the effectiveness of prayer between ethnic categories. For example: "Do Caucasians who strongly believe that prayer can reduce depressive symptoms experience a greater decrease in depressive symptoms than Caucasians who do not?" Furthermore, the following question could be addressed: "Do African Americans who do not strongly believe in the effectiveness of prayer report fewer symptoms of depression over time compared to Caucasians who strongly believe that prayer can reduce depressive symptoms?"

Future researchers could examine the effects of "Organizational Religiousness" (Sunday school attendance, participation in prayer groups, and religious service attendance) on the effectiveness of prayer in reducing depressive symptoms by interviewing a new sample of participants. Those from the survey who rated high in "Organizational Religiousness" could be examined across time in determining the effectiveness of prayer among this subgroup.

Future research projects could utilize the complete CESD-R instead of only eight out of 20 questions. The scale was revised in 2004- the same year that the second wave of data was collected. The data collection for future research could be expanded from

those on the CMS beneficiary list to the upper socioeconomic class- those who are not identified by this group.

Moving forward in this field other researchers could examine the effects of prayer across a different degree of time intervals. Rather than three years, the data could be collected more frequently such as annually or twice annually. This would better explore seasonal patterns of depression.

Researchers interested in this topic could compare the effects of prayer across religious groups of elderly adults within the US. For example, Protestant Christians could be compared to Roman Catholics and adherents to Judaism could be compared to those who ascribed to the tenets of Islam. Various faith traditions within and between religious groups could be compared to determine the effectiveness of prayer in reducing depressive symptoms.

Additional research could also be focused on the effects of prayer in treating depression between the elderly in various regions of the United States. For example, those living in the South Region could be compared to those living in the Mid-West or the Southwest regions. This may provide some insight into the effectiveness of spiritual practices in maintaining the mental health of the elderly in these locations.

Others interested in this topic could examine the variable of culture within the United States in relationship to effectiveness of using Christian prayer in treating depression. Those in various ethnic cultures (e.g., Cuban immigrants of South Florida, Irish immigrants in New York, first generation Asian descendants living California, etc.)

could be compared to determine if this variable influences the relationship between prayer and depressive symptoms.

Implications

Researchers have long known the social impact of religion on mental health. Because of this study, I reinforced the link between spiritual well-being and positive mental health outcomes. My findings indicate that the function of prayer (a direct intercourse with God) has benefit in reducing depressive symptoms among the elderly. This discovery could result in the further promotion of prayer as a supplemental form of treatment in the battle against depression among the elderly. Implementing prayer as a supplemental form of treatment for depression may alter the way that some clinicians and providers conduct mental health treatment.

The reduction of depression might increase the quality of physical health, happiness and well-being of elderly adults. Li et al. (2011) noted that physical health and life satisfaction related directly to quality of life. In addition, declining health in the elderly can lead to depression (Pronk et al., 2013). George (2011) stated that older adults who are depressed have twice as many hospitalizations for medical reasons as those who are not depressed, and they have higher morbidity rates and slower recovery after surgery. Bell, et. al. (2016) noted that most senior adults referred to skilled nursing facilities met criteria for three or more coexisting syndromes correlating with depression such as falls, incontinence, loss of appetite, and weight loss. The reduction of depression would be expected to increase the overall well-being of elderly adults. This may prolong

both the duration and quality of life for those who are aging. Having such an impact is the goal of both those who suffer from and those who treat depression.

A decrease in depressive symptoms might also reduce the emotional burden on families who are often the caretakers of the elderly. If depressive symptoms are substantially elevated in the elderly, then this may result in increased demand on the caregiver. This increased demand on the caregiver may result in time away from work. However, if depressive symptoms decrease, then the time away from work by caregivers may also decrease. This would result in the reduction of time lost due to caring for the mental health needs of the elderly.

If used effectively, then prayer could be a cost-effective method of reducing depressive symptoms. This could have an impact on the cost of treating depression and as a result could to some degree lower the financial burden of mental health treatment among the elderly. Prayer as a supplemental form of treatment could be prescribed by the treating clinician.

The benefits of prayer should be discussed without proselytizing clients. For those elderly who are religious the benefits of prayer could be honestly and openly discussed. The religious–minded person seeking treatment could be encouraged to use prayer as one of many interventions (along with psychotropic medication and psychotherapies).

Conclusions

As the population ages in the United States depression in the elderly population is a growing concern. A decrease in depression in the elderly could lead to greater quality

of life and reduced cost of healthcare services. Practicing religion and spirituality has been shown to benefit mental health in the overall population. This researcher examined the effectiveness of Christian prayer in reducing depressive symptoms when controlling for such variables as amount of time spent in prayer, gender, and ethnicity. The SOC theory provided the framework for the study. SOC theorist's purport that events in the universe are ordered, structured, and make sense. People who pray often believe that a transcendent God can make sense of the universe and that the use of prayer can offer a framework for understanding the apparent capriciousness of the universe. The events of life can often appear chaotic and frightening. Prayer is a means people often use to cope with stressful life events. Prayer allows a sense of "control" over the unpredictable elements of life such as cancer, the death of a loved one, or the loss of employment. Prayer, like SOC theory, provides the framework for providing meaning in the universe. Another concept in SOC theory is meaningfulness. Meaningfulness is a concept that refers to how people understand and create value to the challenges of life. The search for meaning is a universal pursuit. The act of prayer may result in finding meaning in life. As one prays he or she may reach the conviction, as many already have, that life is given meaning by trusting in the wisdom and decree of an all-knowing God regardless of the outcome of the prayer. In other words, during the search for meaning one may conclude that God benevolently charts the course of history.

I examined the effects of prayer in decreasing depressive symptoms in the elderly after controlling for time spent in prayer, gender, and ethnicity. I concluded that people from the sample who prayed over this 3-year period experienced a decrease in depressive

symptoms while those who did not pray did not experience a decrease in depressive symptoms. This indicates that prayer has a positive impact on the treatment of depression.

Based on this research, future researchers may develop faith-based interventions designed to maximize treatments for depression among the elderly. Specifically, the mental health professional treating depression could encourage prayer as a supplement to other treatments.

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Appendix A: CESD-R scale

Depressive symptoms were measured by selecting all eight of the items from the CESD-R scale (Eaton, et al, 2004): “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”. The items were measured using a four-point Likert scale ranging from one (rarely or none of the time) to four (most or all of the time). The scores were then compiled into the composite score “depression”.

Appendix B: Organizational Religiousness

The questions addressing this section are as follows:

1. "How often do you attend adult 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?"

The above questions were set on a Likert scale with the following answer options: Several times a week, Once a week, A few times a month, Once a month, Less than once a month, Never, No answer, Not sure, and Decline to answer. The survey questions under the "Organizational Religiousness" section will be compiled into a composite score titled "spiritual activities". This composite score will be used to assess the examinees' frequency of "spiritual activities" related to the effectiveness of prayer in treating depressive symptoms.

Appendix C: “Religious Activities”

“Religious activities” was comprised with the following questions: “How often do you listen to religious music outside church - like when you are home or driving in your car?”, “When you are at home, how often do you read the Bible?”, and “When you are at home, how often do you read religious literature other than the Bible? I’m thinking here about things like Bible study guides, inspirational readings, or books containing daily prayers or devotionals”. The possible answers ranged from “Several times a day” to “Never”. The three scores in the questionnaire create the composite score “spiritual activities”. The possible answers ranged from “Several times a day” to “Never”. These scores in the questionnaire form the composite score “spiritual activities”.

Appendix D: "Perceptions About Prayer"

"Perceptions about prayer" was assessed using the following questions: "How often are your prayers answered?", "How much do you agree or disagree with the following statements?", "My prayers are usually answered quickly", "Learning to wait for God's answer to my prayers is an important part of my faith", "When I pray, I usually get exactly what I ask for", and "When I pray, God does not always give me what I ask for because only He knows what is best". The available answers were: "Strongly Agree", "Agree", "Disagree", "Strongly Disagree", "No Answer", "Not Sure", and "Decline to Answer". In addition, the questionnaire include the following: "I look to God for strength in a crisis", "I look to God for guidance when difficult times arise", "When I'm faced with a difficult experience, I try to think about the good things God has given me", "I try to realize that God never gives us more than we can handle", "When hard times arise, I try to realize that it's just God's way of testing my faith", "I think about how stressful situations are God's way of punishing me for the things I have done wrong", "When problems arise in my life, I wonder whether God has abandoned me", "When I'm faced with stressful situations, I question the power of God", "I realize the devil makes hard times happen", and "When problems arise in my life, I question whether God really exists". The answers were set on a Likert scale (valued from 1 to 9) as mentioned previously.