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The Relationship Between Depressive Symptoms and Levels of Lifestyle Activity Among Community-Dwelling Older Adults

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Walden University
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Abstract

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MSW, Grambling State University, 2007

BS, Northwestern State University, 2004

Dissertation Submitted in Partial Fulfillment

of the Requirements for the Degree of

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Abstract

Identifying depressive symptoms in community-dwelling elders has been problematic, due to a lack of resources and training for health clinicians. Previous researchers have indicated that older adults who engage in physical activities can prevent, or mitigate depression, but no model has included this variable in conjunction with factors such as lifestyle or sociodemographic characteristics. In this study, a predictive design was used with a regression analysis. The purpose of this quantitative study was to investigate the relationship between depressive symptoms and the different factors identified in the literature as significant contributors to its prevalence among older community-dwelling adults. Erikson's theory of psychosocial development, Beck's cognitive model of depression, and the learned helplessness model were used as the theoretical foundations to determine whether lifestyle activities, perceived social support, sociodemographic variables, and comorbidities can predict depressive symptoms. The sample consisted of 156 older adults who were 60 years of age and older and living in Northern Louisiana. Pearson correlation analysis and multiple regression analyses were used to investigate whether (a) daily lifestyle activities, (b) community setting (rural or urban), (c) gender, (d) perceived social support, (e) marital status, and (f) comorbidities can predict depressive symptoms. The 2 primary predictors of depression among older adults were low activity levels and low perceived social support. Positive social implications include improving counselors' and mental health practitioners' knowledge of the ways to lessen the depressive symptoms experienced by the elderly population.

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Dedication

This dissertation is dedicated to all of the individuals who have sacrificed and believed in me but are no longer here with me today but live in my heart forever.
Love always, Dr. Michael D. Gatson “Doobie.”

My father Willie L. Singleton “Clem,” who taught me always to remain humble at whatever level of success I obtain throughout life. Expressed to me on a regular basis “Bud, we have spoiled you, so make sure you get all the education you can so you can always hire people to do things for you.” It has been 11 years since you left this world, but I hope I am continuing to make you proud by completing this terminal degree.

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Chapter 1: Introduction

As of December 2015, 45-million people in the United States were 65 years of age or older and accounted for 13% of the total U.S. population (U.S. Census Bureau, 2010). This age group was larger in 2015 than in any other decennial census, up from 34,991,753 in 2000, 40,267,984 in 2010, and 43,145,000 in 2012 (U.S. Census Bureau, 2010). Ortman, Velkoff, and Hogan (2014) projected that the size of this older adult population will grow by 55 million in the year 2020 and 72 million in the year 2030, when the Baby Boomer generation reaches the age of 65 and enters its elderly years. Depression is a public health concern, with more than 18 million people in the United States diagnosed with the condition, which affects an individual's thoughts, moods, feelings, behavior, and even physical health (National Institutes of Health, National Institute of Mental Health [NIMH], 2015). In the U.S. context, the elderly population is especially susceptible to depression, with 70 million adults above the age of 65 suffering from the illness (U.S. Census Bureau, 2010).

Depression is the most common mental illness among people over the age of 60 in the United States (American Psychiatric Association, 2013; National Center for Health Statistics, 2015). Although researchers have established a susceptibility to depression among the elderly, this population is usually underdiagnosed for the illness (Stefanatou, Kouris, & Lekakis, 2010). Having a mood, anxiety, or combined mood-anxiety disorder generally decreases with age (Byers, Yaffe, Covinsky, Friedman, & Bruce, 2010). However, anxiety and mood disorders later in life remain common, especially in women (Byers et al., 2010). Depression is common among older adults who have stopped

working and remaining in the home (Beard & Petitot, 2011). Given that older people may have more time to engage in new activities but choose to remain in the home, physical and mental inactivity can occur.

There is limited research as to whether lack of engagement in physical activities can predict depression in older adults. It may be possible to close this gap in the knowledge base by determining whether lifestyle activities are predictive of depressive symptoms among community-dwelling older adults. Variables, such as (a) daily lifestyle activities, (b) community setting (rural or urban), (c) gender, (d) perceived social support, (e) marital status, and (f) comorbidities were researched to determine which are likely to predict depressive symptoms in community-dwelling older adults in Northern Louisiana.

The remainder of Chapter 1 includes the theoretical underpinnings of the study, including Erikson's (1968) theory of psychosocial development, which emphasizes human growth as a never-ending process, marked by stages that revolve around particular issues. Additionally, Beck's (2005) cognitive model of depression and the learned helplessness model were used as theoretical frameworks for this research. Research questions for this quantitative study are presented with the relevant sets of hypotheses, which were used gather the data needed to directly respond to the research questions. Moreover, nature of the study is discussed, and the terms which will be used throughout the research are defined for the readers to comprehend the study along with the assumptions thoroughly. These assumptions were made to carry out the process of acquiring data from older adults. Before proceeding towards findings, the scope of the

study and its delimitations and limitations with social implications are analyzed. Lastly, a summary of the chapter is presented.

Background

The average life expectancy of U.S. residents has increased. Aging is a time for rest, reflection, and doing things delayed during a person's prime years (Hauerwas, 2013). With age comes the increased risk of decline in health and likelihood of depression (Win, Parakh, Gottdiener, Kop, & Ziegelsten, 2011), leading to the realization of old age as something other than idyllic. The risks for physical, mental, and emotional decline make older adults a vulnerable population. Age-related, irreversible decreases in functional capacity and psychosocial difficulties may lead to depression (Lokk & Delbari, 2010).

Depression among older adults may go undetected for several reasons, including (a) health care professionals' lack of knowledge and confidence in recognizing depression, (b) depressive symptoms attributed to the normal ageing process, and (c) presenting with a physical illness (Aakhus et al., 2014). Eggermont, Penninx, Jones, and Leveille (2012) found that depressive symptoms are associated with risk of falling and with the chronic pain that older adults experience. Several risk factors contribute to depressive symptoms in older adults, including social isolation, marital status, lower socioeconomic status, uncontrolled pain, insomnia, functional impairment, cognitive impairments, living alone, medical morbidity, functional limitations, loneliness, and social isolation. Physical activity and maintaining family connections are directly

associated with the subjective well-being of older adults, and researchers have perceived that poorer health is associated with an increase in depression (Dai, Zhang, & Li, 2012).

Depression decreases when activities are increased (Carek, Laibstain, & Carek, 2011; Mata et al., 2011). There is an inverse relationship between the two variables. Teixeira, Vasconcelos-Raposo, Fernandes, and Brustad (2013) found physical activity has positive effects on depression in older adults and may aid in coping with emotional problems. Since the mid-1990s, little progress has been made to document the efficacy of exercise on reducing depression (Mura & Carta, 2013). Research involving management of depression in late life is needed to establish the effectiveness of exercise on depressive symptoms in elderly adults (Mura & Carta, 2013). Mura and Carta (2013) noted some findings on physical activity combined with antidepressants in treatment-resistant, late-life depression.

Individuals who do not participate in social activities tend to have higher levels of depression than those individuals who participate in social activities (Merema, 2014). Individuals who engage in physical activities can prevent or at least mitigate depression (Dai et al., 2012). Dai et al. (2012) and Carek et al. (2011) found that older adults who are already suffering from depression should engage in light activities, such as taking the stairs, doing housework, or enjoying a short walk, due to the correlation between physical activities and depression.

Although researchers have presented findings on how lifestyle activities affect the levels of depression in older populations, future researchers should focus on the trend of depression and its association with physical activities in older adults (Dai et al., 2012;

Merema, 2014). There is a gap in the literature regarding the relationships between lifestyle activities on depressive symptoms among community-dwelling older adults. The present study was designed to determine whether lifestyle activities are associated with depression among community-dwelling older adults, especially those living in urban and rural settings in Northern Louisiana.

Physical activity impacts depression in older adults (Dai et al., 2012; Smith, Robinson, & Segal, 2014). Regular physical activity is associated with a significantly decreased prevalence of major depression and anxiety disorders (Pasco et al., 2011). In rural areas, older adults typically engage in physical activities, such as household chores and routine yard work. The atmosphere in the country promotes quiet walks in the evening, but the fast-paced lifestyles common in urban areas mean urban-dwelling older adults tend to be more physically active than are their rural counterparts. Dai et al. (2012) found that physical resources in a community and the activities prepared for older adults have a significant effect on the subjective well-being of older adults, which may be attributed to the availability of resources already used by these adults.

Gender plays a part in depression; older adult men are more likely to engage in physical activity than are older women (Smith et al., 2014). The cause of the higher prevalence rate of depression among elderly women remains unclear; however, depression may be attributable, in some part, to organic changes and vascular disease in the elderly brain (Rasquinha, 2013). Zhang and Li (2011) posited that the differences found in depressive symptoms between married and widowed elderly people may be explained by the inverse of the level of family support for the elderly adults. Although

perceptions of friends' support had different effects on the depressive symptoms of elderly adults with different marital statuses, Zhang and Li found no relationship between gender and depressive symptoms.

Another factor studied in this research was perceived social support, including family relations. More than economic and health factors, the role of family relations plays a part in older adults' well-being. The family provides support to elderly adults diagnosed with depression or depressed moods. That support provides encouragement to the older adults to seek health and medical services for treatment. Hawton et al. (2011) opined that social isolation may have an impact on the health and well-being of older people and actions to address social isolation may yield positive results.

According to Zhang and Li (2011), inferences drawn from different studies linking depression with gender have not been conclusive. Furthermore, according to Mura and Carta (2013), there is a consistent lack of quality in studies of depression among the elderly. Academics have encountered difficulties in establishing the relationships between depression and the different factors hypothesized as influencing its existence. Scholars have pointed to a significant gap in the literature because there are no studies using all of the variables together (daily lifestyle activities; perceived social support; and sociodemographic variables of gender, community setting, marital status, and comorbidities).

Depression is a significant predictor of attempted and completed suicide (Campos & Besser, 2014). Older adults have the highest risk of suicide in the United States (Cukrowicz, Cheavens, Van Orden, Ragain, & Cook, 2011; Wiese, 2011). Improved

understanding of the factors that lead to increased risk of suicide in older adults will inform society to prevent suicide in this high risk group (Cukrowicz et al., 2011). Innovative strategies might improve positive aging and resilience among older adults, enabling them to engage with family and community gatekeepers (Lapierre et al., 2011). Depressive symptoms in older adults may go undetected by health care practitioners because their age usually leads health care professionals to focus on other factors of illness (Stefanatou et al., 2010). Older adults living in the urban areas in the United States are highly educated and have high levels of net worth, but low levels of daily activities, which contribute to daily living impairments, cognitive impairment, and depressive symptoms (Zivin et al., 2010).

Problem Statement

There is a relationship between depressive symptoms and the different factors identified in literature as significant contributors to its prevalence on the population of community-dwelling adults, 60 years of age and older, living in Northern Louisiana. These factors include daily lifestyle activities; perceived social support; and sociodemographic variables of gender, community setting, marital status, and comorbidities. Mura and Carta (2013) emphasized that although academic researchers have established the importance of these factors in the occurrence of depression, the designs and methodologies of these research endeavors have prevented conclusive findings regarding the actual relationship between these factors and depressive symptoms.

In the past five years, several factors have been established as considerations when studying depression. Physical activity is inversely related with the incidence of depression (Teixeira et al., 2013). Physical activity might have significant effects on depression (Dai et al., 2012; Smith et al., 2014). Another factor that affects the depressed elderly is the type of community, with rural areas providing more opportunities to lower the likelihood of depression (Dai et al., 2012). Perceived social support is inversely related to depression (Hawton et al., 2011). Rasquinha (2013) established gender and depression as significantly correlated, with more depressed women than depressed men did. However, researchers have not studied the combination of the variables of physical activity, community, perceived social support, and gender.

The factors involved in the current research have been viewed as predictors or correlates of depressive symptoms among the elderly. Providing a measurement of their influence and relationship with depressive symptoms augmented the information available regarding these factors. The information on these factors can be applied more effectively in the study or treatment of depressive symptoms among the elderly.

According to Zhang and Li (2011), the exact reasons why these relationships arise are unclear. The first three factors, although correlated with depressive symptoms, have not been studied conclusively. According to Mura and Carta (2013), there is a consistent lack of quality in studies regarding depressive symptoms among the elderly, which is the reason results remain inconclusive regarding the relationship of the elderly individuals and depressive symptoms. There was a significant gap in literature, given the prevalence of depression among the at-risk population of elderly people in the United States. They

are considered as at risk for depression because of their condition of having depressive symptoms. By quantitatively establishing the correlation of these factors to the incidence of depressive symptoms among the elderly, this problem may be addressed.

Purpose of the Study

For this study, a quantitative, predictive research design was used with a regression analysis in order to measure the relationships between the independent and dependent variables. Through this design, assertions of earlier studies were verified regarding the significant effects of certain factors on the incidence of depressive symptoms. The purpose of this quantitative study was to determine whether daily lifestyle activities; perceived social support; and sociodemographic variables of gender, community setting, marital status, and comorbidities predict depressive symptoms among community-dwelling older adults. Researchers have been unable to establish the relationships between factors that may contribute to depressive symptoms (Mura & Carta, 2013). These factors include daily lifestyle activities; perceived social support; and sociodemographic variables of gender, community setting, marital status, and comorbidities. Hence, there was a need for new studies to establish with greater certainty the existence or nonexistence of the relationships between these factors and depressive symptoms, along with the measurement of these relations. Identifying which factors may be correlated with depressive symptoms in community-dwelling older adults can improve the welfare of these individuals. Friends and families of these older adults may benefit from the results of this study, as their loved ones and themselves will be better equipped

to recognize the predictive factors and seek treatment for depression sooner rather than later.

The independent variables of the present study were daily lifestyle activities; perceived social support; and sociodemographic variables of gender, community setting, marital status, and comorbidities. Active lifestyles and high levels of engagement in activities of daily living seemingly has a positive effect on depression, with higher levels of activity being associated with lower levels of depression (Teixeira et al., 2013). Similarly, rural areas and high levels of perceived social support have been linked to decreased depression (Dai et al., 2012; Hawton et al., 2012). With respect to gender, Rasquinha (2013) noted that women have been more likely to suffer from depressive symptoms than men.

The dependent variable in the present study was depressive symptoms–a psychological occurrence manifested in deflated moods, the inability to feel pleasure, and sometimes even by the occurrence of suicidal thoughts and behaviors (NIMH, 2015). Despite this prevalence, and with respect to depression, the elderly remains underdiagnosed (Stefanatou et al., 2010). The proper identification and quantification of factors associated with depressive symptoms could help to better diagnose and identify elderly individuals suffering from the illness.

Research Questions and Hypotheses

Depression is a common and challenging mental health problem among older adults (Greenberg, 2012). Older adults with mental health disorders have greater disabilities than do those with physical sickness alone, as well as poorer health outcomes,

higher rates of hospitalization, and increased emergency department visits than do older adults without these illnesses (Bartels & Naslund, 2013). Physicians generally attribute symptoms of depression to medical problems linked to aging and not clinical depression (Hasche, Morrow-Howell, & Proctor, 2010). To assist older adults with depressive symptoms, the relationships among the independent variables of daily activities, perceived social support, gender, community setting, and the dependent variable of depressive symptoms were explored. Statistical tests including Pearson's correlation and multiple linear regressions were used to measure this relationship and to address the following research questions, the null and alternative hypotheses:

RQ1: Is engagement in daily lifestyle activities related to depressive symptoms among community-dwelling older adults?

$H1_0$: Engagement in daily lifestyle activities will not be related to depressive symptoms among community-dwelling older adults in Northern Louisiana.

$H1_A$: Engagement in daily lifestyle activities will be negatively related to depressive symptoms among community-dwelling older adults in Northern Louisiana.

RQ2: Is community setting related to depressive symptoms among community-dwelling older adults?

$H2_0$: Community setting will not be related to depressive symptoms among community-dwelling older adults.

$H2_A$: Community setting will be related to depressive symptoms among community-dwelling older adults.

RQ3: Is gender related to depressive symptoms among community-dwelling older adults?

$H3_0$: Gender will not be related to depressive symptoms among community-dwelling older adults.

$H3_A$: Gender will be related to depressive symptoms among community-dwelling older adults.

RQ4: Is perceived social support related to depressive symptoms among community-dwelling older adults?

$H4_0$: Perceived social support will not be negatively related to depressive symptoms among community-dwelling older adults.

$H4_A$: Perceived social support will be negatively related to depressive symptoms among community-dwelling older adults.

RQ5: Is the marital status related to depressive symptoms among community-dwelling older adults?

$H5_0$: The marital status will not be related to depressive symptoms among community-dwelling older adults.

$H5_A$: The marital status will be related to depressive symptoms among community-dwelling older adults.

RQ6: Is comorbidity related to depressive symptoms among community-dwelling older adults?

$H6_0$: Comorbidity will not be related to depressive symptoms among community-dwelling older adults.

$H6_A$: Comorbidity will be positively related to depressive symptoms among community-dwelling older adults.

RQ7: Do combinations of the variables of daily lifestyle activities, community setting, and gender, comorbidities, perceived social support, marital status, and comorbidities significantly predict depressive symptoms among community-dwelling older adults in Northern Louisiana?

$H7_0$: Combinations of daily lifestyle activities, community setting, gender, comorbidities, perceived social support, marital status, and comorbidities will not significantly predict depressive symptoms among community-dwelling older adults in Northern Louisiana.

$H7_A$: Combinations of daily lifestyle activities, community setting, gender, comorbidities, perceived social support, marital status, and comorbidities will significantly predict depressive symptoms among community-dwelling older adults in Northern Louisiana.

Theoretical Framework for the Study

In the current study, theoretical frameworks were incorporated from existing academic literature. Chief among these are three seminal psychological frameworks. The first was Erikson's (1968) theory of psychosocial development. The second was Beck's (2005) cognitive model of depression, while the third was Seligman's (1972) learned helplessness model.

Erikson's Theory of Psychosocial Development

Erikson's (1968) original developmental theory and the enhanced developmental theory of Erikson, Erikson, and Kivnick (1986) served as framework for the present study in terms of identifying depressive symptoms among community-dwelling elders. According to Erikson, human development is a never-ending process that involves the resolution of eight psychosocial stages ranging from birth to death. Psychosocial crises must be resolved in stages. The last stage described in developmental theory focuses on older adults and the end stages of life. Erikson's theory for the last stage of development, integrity versus despair, involves the latter portion of a person's life. During this stage, Erikson recommended that the individual should continue to grow. In the final stage of psychosocial development, people look back over their lifetime and sometimes try to resolve their final identity crisis. Some older adults feel a sense of fulfillment in old age, while others stagnate. Without growth, older adults can experience a lack of final identity and purpose in living, which often leads to depression.

The older adult who fails to discover or struggles to discover the meaning of his or her life can experience disgust and despair, which may lead to depression. These stages, as theorized by Erikson (1968), are of relevance to the present study as they highlight the struggles and possible sources of conflict for individuals at different stages in their lives. Erikson posited that the elderly might develop depression because of the crises they experience at their particular life stage. I used this portion of Erikson's theory to guide the study by emphasizing the psychosocial development of the elderly population, given that they have struggles and concerns. Furthermore, Erikson identified

susceptibilities to depression that are reflected in some of the variables in the current study. The theory will be discussed in greater detail in in Chapter 2.

Beck's (2005) Cognitive Model of Depression

The cognitive model of depression has two central components: cognitive triad and the negative information processing bias (Beck, 2005). The cognitive triad refers to the perceptions of people regarding their world, their future, and themselves. Beck (1991) proposed that people with depression see their world in a negative light. They perceive their world as filled with obstacles and ongoing losses. They interpret neutral events as unfavorable to them (Beck, 1991). People with depression see a bleak and hopeless future with no end to their negative emotions, and they tend to feel helpless about their own lives. This negative outlook extends to their perception of themselves. They perceive themselves as failures, inadequate, and unlikable. They believe that these negative experiences were caused by their own innate flaws (Young, Rygh, Weinberger, & Beck, 2008). People with depression lack self-compassion, the positive perceptions of which offer meaning and usefulness to life (Pauley & McPherson, 2010). Beck's (2008) theory revolves around the perceptions of depressed individuals. The importance placed on perceptions was embodied in the hypothesis of the current study regarding the effects of perceived social support on depression.

Beck (2008) claimed that depression has various sources and contributing factors. The theory itself incorporates affective, cognitive, behavioral, and physical concerns as being possible sources of depression. Hence, this study was based upon the implications made by Beck, with research questions focusing on various aspects of the experiences of

the elderly that may lead to depression. The results of this study may help provide further validity to Beck's theory, if the various sources of depression implied in the theory are found to contribute to the experiences of the elderly suffering from depression. The intricacies of Beck's theory will be further discussed in Chapter 2.

Seligman's (1972) Learned Helplessness Model

According to the learned helplessness model, depression is more likely to be developed by people who think that their uncontrollable negative experiences are due to chronic and insidious internal characteristics (Seligman, Abramson, Semmel, & von Baeyer, 1979). This model is different from Beck's (1991) model because Beck focused on human beings with autonomous characteristics. In the learned helplessness model, people are believed to attribute the causes of occurrences (both good and bad) in their lives to three different continuums– global versus specific, stable versus unstable, and internal versus external attributes (Abramson, Seligman, & Teasdale, 1978). People who use a negative explanatory style attribute their negative experiences to global, stable, and internal characteristics.

Seligman's learned (1972) helplessness theory, which will be discussed further in Chapter 2, helped guide the present study in identifying a population suffering from depression that was in need of further investigation. According to Seligman's theory, depression may be caused by the belief that aversive circumstances and experiences cannot be controlled. The elderly, experiencing declining physical and cognitive functioning, may lack control or self-efficacy over their surroundings and the experiences they undergo, making them susceptible to decreases in moods and engagement that lead

to depression (van Beek, Frijters, Wagner, Groenewegen, & Ribbe, 2011). These assertions of Seligman's theory are embodied in the hypotheses of the present study regarding how the elderly adults developed depressive symptoms.

In Erikson's (1968) theory, at every life stage, an individual experiences challenges and problems that, when not overcome, may lead to complications in a person's mental and even physical health. Seligman (1979) added that when individuals lack a sense of control over their experiences, they might experience learned helplessness—a contributing factor to depression. Finally, Beck (1991) noted that there are various sources of depression, from the physical to the cognitive, behavioral, and affective. The population in this study was selected based on the theory of Erikson regarding the needs of the elderly that must be met, qualified by Seligman as leading to learned helplessness and depression. The various factors that might contribute to the depression of the elderly were investigated in this study according to Beck's theory.

Nature of the Study

The objectives of this study included understanding the relationship between the independent variables (daily lifestyle activities; perceived social support; and sociodemographic variables such as gender, community setting, marital status, and comorbidities) and the dependent variable of depressive symptoms. Since the goal of this study was to associate these variables with one another, and to measure these associations, a quantitative design was appropriate to establish statistical relationships between the aforementioned variables (Creswell, 2013). A predictive design using a regression analysis was used because it provided a means to determine whether the

independent variables relate to the dependent variable, the level of depressive symptoms among the sampled individuals (Creswell, 2013).

The independent variables of the study included daily lifestyle activities; perceived social support; and sociodemographic variables such as gender, community setting, marital status, and comorbidities. These variables have been established in literature as relevant determinants of the depression suffered by individuals; although, scholars have failed to quantify the correlations of these factors to depression satisfactorily (Mura & Carta, 2013). The dependent variable for this study was the level of depressive symptoms experienced by elderly individuals in the community, which includes both elderly settings and community-dwelling elderly. Older individuals are particularly susceptible to depression, but are often incorrectly diagnosed (Stefanatou et al., 2010).

A quantitative predictive research method was used to measure the variables with respect to one another in order to establish relationships. In order to gather the necessary data required for correlation, community-dwelling, elderly adults, aged 60 years or older, who lived in Northern Louisiana, were recruited from various senior centers. The participants were recruited based on their interest; only those who expressed interest were given questionnaires. In these questionnaires, the participants provided information on the different variables and experiences pertinent to this study. Finally, Pearson's coefficient regression analyses were conducted to identify and measure relationships between variables. These two methods of data analyses allow investigators using quantitative predictive research methods to measure variables with respect to one

another and to identify whether statistically significant relationships exist between them or not, and if so, in what way.

Definitions

Terms used throughout this study are defined as follows.

Active lifestyle: Any activity that older adults participate in outside of their daily lifestyle activities (i.e., walking, jogging, and reading).

Cognitive triad: Mediation of the associations between inference styles, as described in the hopelessness model (Pössel & Thomas, 2010).

Comorbidities: The co-occurrence of two or more mental health problems.

Community setting: Whether the elderly is in a rural or urban setting.

Daily lifestyle activities: Comprising those activities or tasks that people undertake routinely in their everyday life. In this study, the focus was on physical activities.

Depressed moods: A state of low mood and aversion to activity that can have a negative effect on a person's thoughts, behavior, feelings, worldview, and physical well-being (Clasen, Wells, Ellis, & Beevers, 2012).

Developmental theory: A theory that explains the organization of life into eight stages that span from birth to death (Erikson et al., 1986). For the purpose of this study, developmental theory was the theory in accordance with the theory advanced by Erikson et al. (1986).

Health service professional: Individuals such as physicians, nurses, and other assistants engaged in providing health care to people suffering from physical and mental illness (Mannion, 2014).

Major depression: A psychological illness involving a state of low mood and aversion to activity that can affect a person's thoughts, behavior, emotions, and physical well-being (Bromet et al., 2011).

Older adults: Individuals 60 years of age or older who may have experienced health risk factors (Kokkinos & Myers, 2010).

Perceived social support: The quality of emotional support provided by others including families, friends, and significant others (Yap & Devilly, 2004).

Physical activity: Exercise in the form of moderate labor to attain physical fitness and health (Kokkinos & Myers, 2010).

Socioeconomic status: An individual's membership in various social categorization and groups, including age groups, gender groups, ethnicity groups, economic groups, and educational achievement categories (Verma, Lin, Chakravarthy, Barua, & Kar, 2014).

Assumptions

Several assumptions were made for the current study. The first assumption was that the community-dwelling older adult participants were mentally and physically fit enough to respond to the questionnaire used for this study. It was assumed that both physical and mental fitness were demonstrated by participants' capability to recognize and communicate their perceptions. The second assumption was that participants would

understand the questions posed and provide accurate and honest responses to questions on the questionnaires. I assumed that facts related to a growing concern regarding depression among older adults in the United States (Win et al., 2011) would be accurate.

Scope and Delimitations

The purpose of this study was to determine the relationship between daily lifestyle activities and the level of depressive symptoms among community-dwelling older adults living in Northern Louisiana. The focus of the study was on elderly individuals, specifically, community-dwelling older adults, because according to Erikson's (1986) theory, they are subject to specific and significant challenges and problems that deserve attention and understanding. The samples of elderly individuals, community-dwelling older adults, were an understudied population. To contain the quantity of data to a manageable volume, delimitation was introduced wherein only older adults ages 60 years of age and older, residing in Northern Louisiana were included. This delimitation posed a threat to the generalizability of the results. The geographic location of the targeted population was also considered a limitation of the study. The findings of the study were only generalizable to community-dwelling older adults ages 60 years of age and older residing in Northern Louisiana. However, in a quantitative study such as this, threats to generalizability can be mitigated against with the proper sample size. The sample obtained for this study included a representative sample drawn from the target population of community-dwelling older adults ages 60 years of age and older residing in northern Louisiana.

Limitations

Data were limited to the study population. Due to the study population being limited to a geographic location, different conclusions might have been reached if populations in a different geographic location were studied. The findings of this study may not be generalizable to the larger target population. Using the quantitative method of predictive design using a regression analysis allowed for the determination of the predictive ability of the different independent variables to the dependent variable of the study. Furthermore, using a large sample size improved the generalizability of the findings of the study within the targeted population (Creswell, 2013).

As participants' self-report comprised the gathered data, bias may have been encountered in the form of untruthfulness on the part of the participants. I ensured that all participants were aware of their rights to confidentiality and anonymity to ensure that they may not be tempted to misrepresent facts. Despite such measures, however, self-report data are susceptible to errors in the memory of participants. To mitigate this, a large sample size was employed that would evenly distribute and take into account possible errors and threats to the validity of the data and analyses.

Possible confounding effects of family-related issues, such as conflicts, might have had an impact on the depressive symptoms of the elderly population. This was considered a limitation of the study because this was not considered in the analysis. In terms of social desirability bias, some of the participants may have over reported the good practices that they did or under report the bad practices. This was considered a limitation of the study.

Significance

This study was significant in that a gap in the literature was addressed. Few researchers have established and quantified the relationships between sociodemographic variables, physical activities, and depressive symptoms experienced by community-dwelling elderly individuals. The findings of the study might help establish new trends, or validate ones that have been mentioned sparingly in academic literature. A predictive relationship was identified between daily lifestyle activities and depressive symptoms. The results of this study may be significant to many groups, including older adults, friends and family of older adults, and health care providers because they could help them identify and develop activities for older adults in their respective areas. Insights gained from this research may heighten the awareness of health practitioners regarding the influence of daily physical activities in reducing depressive symptoms among older adults in rural and urban communities. This study was significant to the population of older adults living with depressive symptoms in Northern Louisiana, and to the families, health care providers, and friends of these older adults. The data from this study may provide information into the association between lifestyle activities, gender, location, family relations, and depressive symptoms.

This study was also significant to the general public in that it may serve as a framework for future studies on the impact of various factors on depressive symptoms in older adults. Those with depressive symptoms might find the results significant for the proactive steps available to older adults to combat or prevent depressive symptoms. Communities might use the findings to provide and promote access to adequate physical

activity centers and treatment services that are essential to older adults' well-being. Through lessons learned from this study, professionals can educate health care professionals and communities and aid in the development of programs to contribute to older adults' positive physical, mental, and social well-being because addressing depression will allow older adults to focus on other areas of life. The current study may be relevant in the context of informing and providing information to health care professionals that might also assist in developing community health programs for older adults. The findings of the study may lead to older adults leading a more secure and joyful quality of life.

By being informed of the results of this study, children of older adults might take proactive measures to ensure that their parents engage in appropriate activities to avoid depression. Communities might unite to add value to the lives of older adults through activity centers within their communities. Finally, this study may be significant to the knowledge base by providing insights into the relationship among variables such as aging, depressive symptoms, activity, residential setting, gender, and social support. The findings of this study might guide mental health practitioners in the design of appropriate strategies to treat older adult patients and prevent the occurrence of major depressive symptoms.

The results of the study may have social implications. Based on Erikson's (1986) theory, the elderly have needs and concerns that need attention. However, as Miese (2011) suggested, researchers and practitioners lack an understanding of these needs and attribute problems to the aging process. Through this study, the representation

of the elderly in academic literature was increased, and the body of knowledge of understanding their needs was supplemented. Perhaps with the findings and implications of this study, more people will realize the importance of understanding the challenges faced by the elderly.

Social Change Implications

This study had social implications. The results of this study can increase the representation of the elderly in academic literature, added to a body of knowledge of understanding their needs. Using the findings of this study, more people may realize the importance of understanding the challenges faced by the elderly. Professionals may better provide the elderly population with depressive symptoms an improved way of life by gaining insights on ways to lessen the depressive symptoms experienced by the sample of elderly population in this study. Identifying the factors that contribute to depressive symptoms can be used as insights in treating the depressive symptoms. This can be accomplished by considering factors that affect depressive symptoms of the elderly patients.

A positive social change implication from this research includes adding another professional perspective to the body of knowledge on causes of depressive symptoms among the elderly population. Additional social change implications include providing information that may improve the treatment plan on depressive symptoms of the elderly population, which involve the recommendations about the required daily lifestyle activities and perceived social support of the elderly population, and the vulnerability in terms of the depressive symptoms of the elderly population by the different categories of

sociodemographic. A positive social change implication in the improvement of treatment plan will result in the elderly population with depressive symptoms having better a condition. By providing an opportunity to further understand the cause of depressive symptoms of the elderly population, there may be a reduction in the number of elderly individuals with depressive symptoms. Improving the treatment plans of depressive symptoms will result in improved treatment outcomes for the elderly population.

Summary

Based on Erikson's (1986) theory, the elderly face challenges that need understanding. According to Seligman's (1972) theory; Kilic et al. (2014); Onat, Delialioglu, and Ucar (2014); and Yaka, Keskinoglu, Ucku, Yenner, and Tunca (2014), older individuals are more susceptible to developing depression. The factors that contribute to their depression need to be understood.

As pointed out by Beck (1991), however, the development of depression among older adults can be attributed to many factors. These factors can be categorized according to family, physical, and mental health, sociodemographic status, and social support (Dai et al., 2012). According to Mura and Carta (2013), the correlations of certain factors to depression are difficult to establish because of the lack of quality in existing studies. Hence, this study was designed to focus on examining the predictive relationships of daily lifestyle activities, perceived social support, and sociodemographic variables of gender, community setting, marital status, and comorbidities with depressive symptoms in community-dwelling older adults. Narrowing the focus to a target population in Northern Louisiana contained the volume of data and facilitated analysis,

although this limited the study's generalizability. Insights gained from this study might be used to help community-dwelling older adults to lessen the development of depression in their later years.

Chapter 2 includes a discussion on the existing literature regarding the variables pertinent to this study. The different implications of past studies upon this one shall be identified and discussed. These pieces of information will guide the construction and conduction of the present study.

Chapter 2: Literature Review

Introduction

Depression is a public health threat, with more than 18 million residents of the United States demonstrating symptoms of the condition, which affects an individual's thoughts, moods, feelings, behavior, and physical health (American Psychiatric Association, 2013; NIMH, 2015). The present study was designed to determine whether lifestyle activities were associated with depression among community-dwelling, older adults in Northern Louisiana. The number of people over the age of 65 has tripled during the 20th century in the United States. (U.S. Census Bureau, 2010). In a single year in the United States, 7% of the population will experience depression (Holtzheimer, 2010). Furthermore, older adults in the United States suffer from the illness, with an estimated 6.6% experiencing an episode of depression within a single year (Akincigil et al., 2012). As emphasized by Kilic et al. (2014), Onat et al. (2014), and Yaka et al. (2014), older adults are at a greater risk of developing depression. Among the elderly living in private settings, depression occurs at a rate between 0.9% and 9.4% (Apil, Hoencamp, Haffmans, & Spinhoven, 2012; Melendez-Moral, Charco-Ruiz, Mayordomo-Rodriguez, & Sales-Galan, 2013). However, when the elderly are institutionalized, they are prone to depression at an increased rate of 1% to 16% (Apil et al., 2012). Some researchers have claimed that depression among institutionalized elders can occur at a rate of 45% (Melendez-Moral et al., 2013).

Identifying depressive symptoms in community-dwelling elders is a problem due to lack of resources and training to diagnose and identify depression in this population

(Mura & Carta, 2013). Diagnosing depression may be difficult because instability of emotions is not tantamount to depression. Criteria must be met before a person should be characterized as having depression. Once depression is established, other factors that may have an impact on the characteristics of depression can be evaluated. There was a need to investigate the relationship between lifestyle activities and depressive symptoms among community-dwelling older adults to allow health care providers to become involved and change the patterns of physical activities. Health care providers can be involved by voluntary request by older adults or, in some cases, the family or care providers of older adults.

This chapter includes a review of the research on the relationship between lifestyle activities and depressive symptoms in older adults. I outlined how daily activities and lifestyles of older adults might affect their depressive symptoms. A review of how depression is defined is offered, as well as how depressive symptoms among the older population, are identified. I presented the identification of the factors that contribute to depression among older adults. Studies related to depression among older adults in rural and urban communities, physical activities common to this population, sociodemographic factors associated with this population, and studies related to depressive symptoms among the target population are presented. The research methodologies used in these studies of depression are described.

Literature Search Strategy

Searches were conducted in databases such as Pub Med, PsycINFO, MEDLINE, PsycARTICLES, Current Contents, ProQuest Dissertations and Theses, and EBSCOhost.

Apart from online databases, search engines such as Google, Google Scholar, and that of Walden University's Library were also used for the search of relevant literature. Physical searches were also conducted in accessible libraries. The initial keywords, terms, and phrases were *depression, elderly, later-life depression,* and *lifestyle factors,* particularly *lifestyle activities,* and *rural and urban communities.* These keywords were combined to limit the number of retrieved articles. Further searches were conducted in brick-and-mortar libraries by reviewing relevant journals regarding *depression, later-life depression*, and *lifestyle factors*, particularly lifestyle activities in rural and urban communities. Other independent variables such as *age, gender*, *lifestyle activities,* and *sociodemographic factors* were also researched. As a part of the search, reference lists and bibliographies were reviewed from prior searches, and a Google search of databases and other relevant websites was conducted. Primarily, the search for relevant literature included searches for academic articles published in peer-reviewed journals. However, to acquire a vast scope of information, additional materials from textbooks and government published articles were also searched for. Apart from seminal works, all other materials used for the present study were published between 2010 and 2014. In instances where there was a scarcity of resources on a topic, the scope of the search was widened. In such instances, searches for theses and dissertations, as well as information published on university websites, were included. From these, articles cited that could be used for the present study were also attempted in this research.

Depression in the Elderly

Although many of the elderly people in the United States enjoy better health than in years past, some still experience age-related physical and mental health problems as they age. This may contribute to the development of depressive disorders. Older people have a myriad of factors that might contribute to the incidence of depression. Kilic et al. (2014) and Kleisiaris et al. (2013) reported that the elderly frequently experience social isolation and exclusion in ways that contribute to a higher incidence of depression.

The elderly are frequently unwilling or unable to share their feelings concerning sadness, hopelessness, loss of interest in normally pleasurable activities, or prolonged grief following a personal loss (Stefanatou et al., 2010). According to Barua, Ghosh, Kar, and Basilio (2011), many elderly experience depression, with the prevalence for any type of depressive disorder estimated between 10% and 20%. Bock et al. (2014) noted that among the elderly already suffering from chronic disorders, depression occurred at a rate of 10.7%. Depression and depressive symptoms are among the most serious and prevalent psychological problems among older adults, with estimates of 1% to 12% of community-dwelling older adults experiencing diagnosable minor or major depression (American Association of Geriatric Psychiatry, 2011; Kleisiaris et al., 2013; Majdi, Mobarhan, Salek, Taghi, & Mokhber, 2011).

There is a higher risk of relapse of depression in the elderly (Wilkinson & Izmeth, 2012). Apil et al. (2012) and Wilkinson and Izmeth (2012) noted that the elderly are also more difficult to treat for depression than are younger people, particularly elderly

who have a history of one or more previous depressive episodes in their lives. Wilkinson and Izmeth emphasized that prior depression among the elderly might affect their chances of relapsing. Duhameau et al. (2010) revealed diminished global and regional cerebral perfusion and glucose metabolism, especially in the anterior cingulate cortex and prefrontal cortex. However, the long-term effects of these conditions on the prevalence of depression among the elderly have been mixed (Apil et al., 2012; Wilkinson & Izmeth, 2012). Wilkinson and Izmeth concluded that even if the presence of a prior depressive episode plays a role in relapse and recurrence in elderly depression, the pathophysiological mechanisms are not understood.

Although the elderly living at home are at risk of developing depression, their counterparts who reside in long-term care facilities are at even greater risk (Apil et al., 2012). Apil et al. (2012) noted that the rate of depression among elderly individuals residing in private homes, though high, was lower compared to the rate of depression among their institutionalized counterparts. For the former, the rate of depression was between 0.9% and 9.4%, while for the latter, the rate of depression ranged from 14% to 42% (Apil et al., 2012).

Depression is a recurrent cause of emotional distress in later life and reduces the quality of life in older adults (Bock et al., 2014; Bromet et al. 2011). Depression consists of feelings of dejection or hopelessness and suicidal tendencies, loss of interest or pleasure, feelings of guilt or low self-worth, changes in appetite, altered sleep patterns, sadness, low energy, and poor concentration (NIMH, 2015). According to Bromet et al. (2011), almost half of the global population is susceptible to depression. Bromet et al.

discovered that half of their participants noted experiencing certain symptoms of depression. The illness has been ranked as the fourth most prevalent source of disability in the world (NIMH, 2015). Some of the precipitants of depression include the development of chronic pain or illness, the death of a spouse, and the loss of independence or mobility, leading to an inability to perform the same activities that were once satisfying sources of gratification (Umberson & Montez, 2011). Beard and Petitot (2011) stated that depression is common in older adults, especially those who have stopped working and stay at home. Physical activities are directly linked to the levels of depression. The symptoms of depression may present in various forms, including lack of energy, appetite, and lack of interest at work and or any hobbies in which the individual had participated.

Most cases of depression in older adults are overlooked. Ignoring the consequences of depression may lead to adverse effects that further undermine health. Beard and Petitot (2011) found that older adults tend to justify their condition as a normal phenomenon. Thus, older adults' isolation from social interaction has become one of the factors that hinder the recognition of depression. In addition, the perception of the natural physical effects of old age makes detection of depression more difficult. Most of these older adults fail to discuss their feelings because of the vulnerability associated with depression. This failure to communicate leads to suffering needlessly in silence (Beard & Petitot, 2011).

People are living longer and healthier lives than ever before, and the elderly segment of the population is growing. The U.S. Census Bureau (2010) indicated that the

number of elderly in the United States would double by the mid-21st century. Despite advances in health care that have made longer life possible, many older adults will experience age-related disorders. In some cases, these disorders can contribute to the incidence of depression in the elderly. Depression among the elderly is difficult to manage because potential adverse outcomes are involved. Although everyone experiences some degree of depression during their lifetimes, most people fully recover from these depressive episodes with no ill lasting ill (Beard & Petitot, 2011). In other cases, though, depression can result in a range of adverse outcomes, including suicide.

Although the causes of depression differ among individuals, stressful episodes are known to cause depression, along with physical illnesses (Kleisiaris et al., 2013). However, the perceptions of individuals regarding why depression occurs varies, with most people pointing to psychosocial stressors and problems, and others pointing to acts of God, or even spontaneity (Essau, Olaya, Pasha, Pauli, & Bray, 2013; Read, Cartwright, Gibson, Shiels, & Haslam, 2014). Most people experience more than one depressive episode in their lives, although it is possible for depression to never occur, or only occur one time during an individual's lifetime (Dolberg, Lonn, & Kvist, 2014; Duhameau et al., 2010; Holtzheimer, 2010). For some people, depression reaches chronic levels that require a lifetime a treatment (Holtzheimer, 2010).

A number of adverse health-related outcomes of concern to the elderly are associated with depression, including a four-fold increase in the risk of developing coronary artery disease; likewise, people with depression may experience more severe problems with diabetes, and the condition can diminish the effectiveness of the insulin

therapy used to treat diabetes (Silver, 2010). Boyer et al. (2012) noted that depression is a factor for the development of coronary artery disease and other complications arising from cardiovascular diseases.

Depression has been shown to cause an increased risk of developing bone density loss, and individuals diagnosed with cancer, Alzheimer's disease, or Parkinson's disease tend to experience more negative outcomes than do those individuals who do not also have depression (Chao, Atkinson, & Taylor, 2012). Depression has been found to contribute to a higher incidence of suicide, with most of the people who commit suicide having a mental disorder, which is most commonly depression (Fong, Shah, & Maniam, 2012). There are several different types of depression.

Identifying Depressive Symptoms

Depression is a public health threat, with around 10% of older adult residents currently experiencing the condition, which affects an individual's thoughts, moods, feelings, behavior, and physical health (Greenberg, 2012). According to Erikson (1968), a person experiences eight psychosocial stages throughout life; development is an evolving process (Erikson et al., 1986).

Psychosocial crises may be encountered at any stage in life and must be addressed before the individual can progress to the stage in life. According to Erikson (1968), at the end stage of life, a person struggles with integrity versus despair. For most people, the end stage of life is reached at an old age, and people who reach old age often struggle to define purpose in their lives. These feelings, when not resolved, can lead to depression (Melendez-Moral et al., 2013).

Major depression is typically diagnosed by observing specific behaviors or asking the patient if he or she has experienced any of the major symptoms of depression (Hidaka, 2012). Symptoms that last for at least 2 weeks and are expected to appear with other symptoms include a diminishing ability to make decisions, increase or decrease in appetite, psychomotor retardation, and either insomnia or hypersomnia. Major depressive disorder consists of symptoms that the individual experiences for 2 weeks or more, for most of the time almost every day that obstruct the individual's ability to eat, sleep, study, work, enjoy leisure activities, and stop the individual to perform normally. The condition may arise once, or recur occasionally, or persist throughout the person's life. Dysthymic disorder is characterized by long-term depressive symptoms that prevent the individual from functioning normally over a minimum of 2 years (NIMH, 2015). The symptoms of dysthymic disorder are milder than those of major depressive disorder, but typically last much longer than an episode of major depression. People with dysthymic disorder may experience one or more episodes of major depression in their lifetime (NIMH, 2015).

Individuals with dysthymic disorder demonstrate a lack of enjoyment and pleasures in life; this disorder commonly affects the older population. It is often difficult to be distinguished from major depression in its partially remitted state because loss of interest or apathy tends to prevail both in dysthymia and remitted depression (Cristancho, Kocis, & Thase, 2012). It has been estimated that 4% to 6% of older adults have dysthymic disorder, and 2% have adjustment disorder (AD) with depressed moods (Casey & Bailey, 2011; Ishizaki & Mimura, 2011). When an individual has AD, the

individual feels depressed starting within 3 months after the event, and get better in 6 months or less.

Many older people with depression do not have severe enough symptoms to meet the full clinical criteria for major depressive disorder or dysthymic disorder, especially when these symptoms are viewed as parts of the normal aging process (Miese, 2011). Adjustment disorder is a common diagnosis in psychiatric settings and carries a significant rate of morbidity among older adults (Patra & Sarkar, 2013). Depression can go unnoticed and unrecognized among older adults because of (a) lack of knowledge and confidence of many health care professionals in recognizing depression, (b) belief that depressive symptoms may be attributed to the normal aging process, and (c) difficulty of recognizing depression when physical illnesses are present (Miese, 2011; NIMH, 2015). Several risk factors contribute to depressive symptoms, including demographics, social isolation, lower socioeconomic status, uncontrolled pain, functional and or cognitive impairments, loneliness, and medical morbidity (Miese, 2011). Sociodemographic factors include living in either rural or urban areas. These factors may deprive older adults of the necessary medical interventions to reduce depression because of limited access to health and medical interventions.

Depression and suicidal ideation are considered mental health issues in the older adult population (Barua et al., 2011; Majdi et al., 2011; Segal, Marty, Meyer, & Coolidge; 2012). Depression and the negative impact associated with depression are threats to the welfare and well-being of older adults. The effect of depression on older adults ranges from decreased enjoyment and quality of life to increased morbidity and mortality and to

suicide (Miese, 2011). Many older adults have depressive symptoms that are undetected; despite frequent visits to their physicians (Stefanatou et al., 2010).

Theoretical Foundation

In the study, theoretical frameworks from existing academic literature were incorporated. Chief among these were three seminal psychological frameworks. The first was Erikson's (1968) theory of psychosocial development. The second was Beck's (2005) cognitive model of depression, while the third was Seligman's (1972) learned helplessness model.

Erikson's Theory of Psychosocial Development

Erikson's (1968) theory of psychosocial development served as the framework for conceptualization of the study in identifying depressive symptoms among community-dwelling elders. According to Erikson, human development is a never-ending process that involves the resolution of eight specific psychosocial stages ranging from birth to death. Psychosocial crises must be resolved in stages. Stage 1 involves the development of trust versus mistrust (birth to 2 years). Erikson defined basic trust as a foundation of trustfulness of others and a sense of one's own trustworthiness. Stage 2 involves development of autonomy versus doubt. During stage 2, children struggle to do things for themselves (2 to 4 years). Parents who allow their children to explore freely, do things for themselves, and guide them help build a sense of autonomy (Erikson, 1968). Stage 3 is the development of initiative versus guilt (4 to 5 years), a stage through which children's developed motor and language skills allow them to be progressively more curious and vigorous to explore their social and physical environment.

A child must find out what kind of person he or she may become after realizing he or she is a person. This process is stage 4 and is centered upon the development of industry versus inferiority for children from five to 12 years of age. In stage 5, a person must discover who he or she is as an individual, separate from the family of origin, and as members of a wider society. This process presents the development of identity versus role confusion for adolescents from 13 to 19 years of age. In stage 6, the initial stage of adulthood, a person begins to seek companionship and love. This process includes the development of intimacy and solidarity versus isolation in young adults from 19 to 35 years of age (Erikson, 1968). In stage 7, a person must find some way to satisfy and support the next generation, as part of the realization about the self. This process involved the development of generativity versus stagnation of middle-aged adults from 40 to 65 years of age (Erikson, 1968).

The last stage described in developmental theory focuses on older adults and the end stages of life. Erikson's (1968) theory for the last stage of development, integrity versus despair, involves the latter portion of one's life. Generativity is, "the interest in establishing and guiding the next generation" (Erikson, 1968, p. 103). During this stage, Erikson recommended that the individual should continue to grow. In the final stage of psychosocial development, people look back over their lifetime and sometimes try to resolve their final identity crisis. Some older adults feel a sense of fulfillment in old age, while others stagnate. Without growth, older adults can experience a lack of final identity and purpose in living, which often leads to depression. In most cases, when an older adult has discovered his or her meaning in life, the individual has then developed

integrity. The older adult achieves this stage when he or she understands the meaning of his or her life.

The older adult who fails to discover or struggles to discover the meaning of his or her life can experience disgust and despair, which can lead to depression. These stages, as theorized by Erikson, are of particular relevance to this study as they highlight the struggles and possible sources of conflict for individuals at different stages in their lives. Erikson posited how the elderly may develop depression because of the crises they experience at their particular life stage. This portion of Erikson's theory guided the current study by emphasizing the need to understand the elderly population, given that they have specific struggles and concerns. Furthermore, Erikson notes that failure to overcome these struggles can lead to complications in the functioning of the elderly. Thus, in conducting the present study, it may be seen that struggles in this stage of Erikson's theory may contribute to or help avoid depression among the elderly. A more comprehensive discussion of the complexities of the theory will be included in the succeeding chapter of this study.

Beck's (2005) Cognitive Model of Depression

Beck's (2005) cognitive model of depression was designed in the 1960s to provide a conceptualization of depression that could then be used to develop treatments. These conceptualizations could be ascribed to psychopathology as a whole without specifically differentiating depression (Iddon & Grant, 2013). Beck (2005) wanted a model that had empirical support for construction of psychopathology and its efficacy in therapeutic strategies.

The cognitive model of depression has two central components: cognitive triad and the negative information processing bias (Beck, 2005). The cognitive triad refers to the perception of people with depression regarding their world, their future, and themselves. Beck (1991) proposed that people with depression see their world in a negative light. They perceive their world as filled with obstacles and ongoing losses. They interpret neutral events as unfavorable to them (Beck, 1991). People with depression see a bleak and hopeless future with no end to their negative emotions. People with depression tend to feel helpless about their own lives. This negative outlook extends to their perception of themselves. They perceive themselves as failures, inadequate and unlikable. They believe these negative experiences were caused by their own innate flaws (Iddon & Grant, 2013). People with depression lack self-compassion, the positive perceptions of which offer meaning and usefulness to life (Pauley & McPherson, 2010).

One of the strengths of Beck's (1991) model of depression is its categorization of the symptoms of depression (i.e., affective, behavioral, cognitive, and physical). Affective and behavioral symptoms of depression are affected by depressive thoughts. Iddon and Grant (2013) found that a person with depression who has had negative experiences or failures in life could withdraw and become disinterested as a means of protecting himself or herself from further negative experience and failure. Therefore, the basis of cognitive therapy for depression is these distorted thoughts. The affective, behavioral, and physical symptoms of depression could be alleviated if these distorted cognitions were challenged and altered. In cases of biological depression, other solutions

are needed because these situations go beyond negative experiences and cognitive failures.

The second central component of Beck's (1991) model is that people with depression have a negative information bias. Grafton and McLeod (2014) defined negative information bias as a spontaneous bias wherein people with depression attend more readily to negative information than they do to positive or neutral information. Some of the common cognitive distortions of individuals with depression are caused by this negative information processing bias. These distortions include ignoring positive information or experiences or attributing these positives to luck, perceiving things in absolutes of black and white, and jumping to unconstructive and cynical conclusions.

Beck (1991) found that different precipitating factors, symptoms, and views of negative events, as well as different core beliefs, would not affect people in the same manner. Therefore, he developed the personality concepts of autonomous style and sociotropic style. The autonomous personality profile is characterized by independence and personal success while social networks and valuing the approval of others characterize the sociotropic style (Beck, 1991). These behaviors are related to depression because people who demonstrate the autonomous personality profile are more confident and have less of a tendency to become depressed.

In his theory, Beck (2005) strongly implied that depression has various sources and contributing factors. The theory itself incorporates affective, cognitive, behavioral, and physical concerns as being possible sources of depression. Hence, this study was based upon these implications made by Beck, with research questions focusing on

various aspects of the experiences of the elderly that may lead to depression., If the various sources of depression implied in the theory are found to actually contribute to the experiences of the elderly suffering from depression, the results of this study may help provide further validity to Beck's theory. Beck's (2005) cognitive model is an empirically based framework for identifying and understanding factors that maintain an episode of depression. According to Beck's cognitive model of depression, biased acquisition and processing of information has a primary role in the development and maintenance of depression. Beck (2005) claimed that depression was a consequence of unconscious anger directed against the self. Specifically, that depression was not a product of unconscious drives and defenses but, rather, the consequence of unduly negative beliefs and biased information processing.

Seligman's (1972) Learned Helplessness Model

Seligman (1972) developed the learned helplessness model by studying the responses of dogs to various interventions. Dogs tried to escape the unavoidable shocks but soon realized that escape was impossible and accepted the shocks without attempting to escape. Seligman generalized these results to depression in people by proposing that people who go through uncontrollable stressors and punishing situations eventually do not attempt to find solutions to their problems (Purandare, 2010). Similar to the dogs giving up and accepting the shocks, people with depression resign themselves to their ongoing negative experiences.

Seligman et al. (1979) developed the learned helplessness model by proposing the attributional style model. According to the learned helplessness model, depression is

more likely to be developed by people who think that their uncontrollable negative experiences are due to chronic and insidious internal characteristics (Seligman et al., 1979). This model is different from Beck's (1991) model, which is focused on human beings with autonomous characteristics. In the learned helplessness model, people are believed to attribute the causes of occurrences (both good and bad) in their lives to three different continuums – global versus specific, stable versus unstable, and internal versus external attributes (Abramson et al., 1978). People who use a negative explanatory style attribute their negative experiences to global, stable, and internal characteristics.

Seligman's learned helplessness theory helped guide this study in identifying a population suffering from depression. According to Seligman, depression may be caused by the belief that aversive circumstances and experiences cannot be controlled. The elderly, experiencing declining physical and cognitive functioning, may often a lack of control or self-efficacy over their surroundings and the experiences they undergo, thus making them susceptible to decreases in moods and engagement, which ultimately lead to depression (Hoy, Wagner, & Hall, 2010).

Erikson emphasized that at every life stage, an individual will experience specific challenges and problems, which, when not overcome, may lead to complications in a person's mental and even physical health. Seligman added that when individuals lack a sense of control over their experiences, they might experience learned helplessness – a contributing factor to depression. Finally, Beck noted that there are various sources of depression, from the physical to the cognitive, behavioral, and affective. The population in question for this research was selected based on the need to conduct a study about

depression in the elderly population. The various factors that might contribute to the depression of the elderly investigated in this study were chosen based on the influence of Erikson's (1968) theory, Beck's (2005) theory, and Seligman's (1972) theory.

Literature Review Related to Key Variables

In this section, the discussion will be about the key variables to the research problem.

Biological Models of Depression

Neurotransmitters/monoamine hypothesis. Depression is associated with three main neurotransmitters: (a) serotonin, (b) dopamine, and (c) norepinephrine, which are all monoamines. These three major monoamine neurotransmitters are modulated by exercise (Lin & Kuo, 2013). Monoamine neurotransmitters are essential to the efficient running of the limbic system, which is related to drives, emotions, and some aspects of memory (Mulinari, 2012). The monoamine hypothesis of depression was developed in response to drug trials that took place in the 1950s. Monoamines were of great interest in the biological causes of depression when researchers found that reducing the reuptake of monoamines was effective in treating depression (Lee, Jeong, Kwak, & Park, 2010).

The thesis of the monoamine hypothesis was that depression was caused by a lack of monoamines (predominantly norepinephrine and serotonin). Researchers found flaws in the hypothesis after analyzing data from studies (Lee et al., 2010). However, because the data are inconclusive they omitted the fact that not everyone responds to these medications (Lee et al., 2010). Another flaw in the hypothesis is that an increased level of monoamine precursor chemicals cannot treat depression, and reduction in

monoamine does not cause depression (Andrews, Kornstein, Halberstadt, Gardner, & Neale, 2011). Furthermore, some antidepressant medications do not involve monoamine systems. Finally, while antidepressant medications affect the availability of neurotransmitters within hours of administration, these are still subject to various other interactions within an individual's nervous system (Andrews et al., 2011). It is possible that monoamines could have an indirect effect on the symptoms of depression whereby the monoamines work by increasing neurogenesis in parts of the brain such as the hippocampus (Andrews et al., 2011). This increase in neurogenesis could explain the delay in efficacy of antidepressants and their effects on the symptoms of depression. While monoamine systems may not be a separate cause of depression, it is apparent that these systems are associated with depression.

Neuroendocrine system. Although the systems activated in the face of danger to focus attention and increase physiological activation and responsiveness are sometimes life-saving, prolonged activation can have a negative impact on human physiology, and may be associated with the development of depression (Bosch, Seifritz, & Wetter, 2012). Gerritsen et al. (2011) noted that the hyperactivity of the hypothalamic-pituitary-adrenal (HPA) axis is instrumental to understanding the maintenance of depression. The hypothalamus releases corticotrophin-releasing hormones, triggering the release of adrenocorticotropic hormone (ACTH) from the pituitary during times of stress. The release of ACTH increases the levels of cortisol and other glucocorticoid hormones from the adrenal glands. This hormonal response aids individuals ~~us~~ in actively responding to external stressors (Foilb, Lui, & Romeo, 2011). The HPA stress response is maintained at

normal levels through a negative feedback loop that regulates the levels of ACTH and cortisol in the blood.

Different levels of cortisol are associated with depression, and this increase is related to poor prognosis and likelihood of relapse in various contexts and among different groups of individuals (Geoffroy, Hertzman, Li, & Powers, 2013; Gex-Fabrey et al., 2011). For example, according to Geoffroy et al., for women, higher levels of cortisol are predictive of subsequent bouts of depression in later life. Conversely, lower levels of cortisol have been linked to depression among men. For individuals previously suffering from depression, lower levels of cortisol were associated with faster relapse. On the other hand, females who had not previously suffered from depression were found to relapse faster when they exhibited higher levels of cortisol.

Stress-diathesis models. According to the stress-diathesis model, negative life events have an effect on the biological and cognitive models of depression etiology, but not all depressed people have experienced stressors and not all people who experience stressors become depressed (Patten, 2013). Some people have a pathophysiological vulnerability, such as a genetic or neurobiological predisposition, which raises their risk of becoming depressed. The occurrence of a stressful event then triggers these vulnerabilities, resulting in depression. Patten (2013) opined that each person has different predisposing vulnerabilities and that people with greater vulnerabilities are more prone to get depressed from smaller stressors.

The stress-diathesis model is about a proposal of the development of brain structure and stressors in early life, a hypothesis that might explain why the HPA axis

feedback loop is decreased in some people, can alter function. People with depression and a history of childhood trauma may have higher levels of cortisol for longer periods of time than might people without depression or trauma (Hinkelmann et al., 2013). Hinkelmann et al. underscored that the likelihood of depression in response to stressors as an adult is increased by a history of childhood trauma. In such cases, environmental stressors in childhood raise the vulnerability level and likelihood of developing depression in response to stressors as an adult. This model is somewhat different from the theory of learned helplessness because depression as a response can be combated when the stressors are eliminated.

Comorbidity. Comorbid mental and physical issues can complicate assessment and diagnosis of depression in the elderly because their symptoms of depression are frequently obscured by physical problems (Miese, 2011). Poorer perceived health is associated with an increase in depression among the older population. Most elderly who experience depression fail to receive treatment for the condition because of a longstanding misperception that depression is simply part of the normal aging process and that the elderly are unable to benefit from psychotherapy. The diminished cognitive abilities of the elderly with depression may also adversely affect their ability to benefit from psychotherapeutic interventions that could be effective with younger patients (Lokk & Delbari, 2010).

One of the harsh realities of growing old is loss. As people grow older, they lose loved ones, previous vocational interests, and occupational pursuits that may have sustained them earlier in life. As people age, they also tend to experience physical and

mental impairments that contribute to their increasingly frail and dependent condition. It is not surprising, then, that some elders develop depressive disorders in response to these fundamental changes in their lives.

As a result of age-related comorbidities and diminished cognitive abilities, the elderly have a particularly high risk for developing depression. There is an inextricable relationship between these age-related comorbidities and depression that is mutually reinforcing; one condition exacerbates the other, defying or complicating treatment. Researchers indicates that although the elderly who reside at home are at higher risk of developing depression than are the general population, the elderly who reside in some type of institutional settings are at even greater risk (Apil et al., 2012).

Due to the difficulty in diagnosing and treating elderly with depression, many elderly patients in both home care and long-term care facilities who have depression remain undiagnosed and untreated for the condition, reinforcing the need for clinically useful and validated assessment and diagnostic instruments for this population (Choulagai, Sharma, & Choulagai, 2013). Although careful assessment of elderly patients for depression is an important step in determining the extent and nature of a depressive condition, there also remains a paucity of relevant and timely information concerning the validity of standardized screens.

Personality traits in the elderly have been linked with a wide range of factors, including neuropsychological functioning, participation in psychotherapy, suicidal ideation, attending to individual healthcare needs, and mortality that have the potential to influence treatment regimens and clinical outcomes (Thomas, 2013). Once again, few

studies have been conducted on the effect of personality type on the incidence of depression among the elderly. Additional studies of this nature are needed to formulate effective treatment interventions (Koorevaar et al., 2013).

Geriatric Depression in Community-Dwelling Elderly

Several factors are associated to the causes of depression. Numerous researchers focused on socioeconomic variables such as advanced age, incomplete education, poor economic status, manual occupation, and current living situation as reasons for depression, and these researchers showed that a relationship exists between these variables and depression (Bartley, 2010; Wee et al., 2014). Jokela and Keltikangas-Jarvinen (2011) found there was a significant relationship between low socioeconomic status and depression after adjusting for personality and temperament factors.

Socioeconomic Factors

Ling (2013) conducted a study of community-dwelling elderly people to examine the relationship between depressive mood and physical and socio-environmental variables, with the objective of determining which variables could predict depression. They used a research model for elderly with depression based on literature regarding the factors that cause depression. According to the researcher, depression and its successful treatment are affected by the patient's socioeconomic status. Hence, interventions must aim to address not just depression but also other problems caused by an elderly individual's social and economic background. Although Ling (2013) examined the relationship between socioeconomic factors and depression, he did so in a very specific context – that of elderly individuals living in Singapore. In a study conducted by Leone,

Coast, Narayanan, and De-Graft Aikins (2012), it was noted that the relationship between depression among elderly adults and socioeconomic factors has been infrequently studied and represented in academic literature. However, this was not the case as many studies were found that explored socioeconomic status and depression in the elderly.

Fernandez-Nino, Espinoza, Bojorquez-Chapela, and Rodriguez (2014) confirmed that socioeconomic deprivation at the locality and municipal levels correlated significantly with the presence of depressive symptoms, while income inequality did not. Almeida and Almeida (1999) asserted that depression is more prevalent amongst socioeconomically disadvantaged older adults. The authors included a population of 21,417 older adults. This is consistent with the study of Johnson-Lawrence, Kaplan, and Galea (2015), who noted that decreasing income patterns over the life course were associated with depressive symptoms in older adults.

Back and Lee (2011) investigated the relationship between socioeconomic status and depressive symptoms in older adults with a sample of 4,165 persons aged 65 and older. The socioeconomic indicators included education, household income, and net worth. The author noted differences in the relationship between socioeconomic status and depressive symptoms between male and female elderly. Wealth was associated with depressive symptoms in men while education and income was associated with depressive symptoms in women. The authors recommended gender-sensitive investments in health and social services for the elderly population.

Perceived Health Status

An indicator of multidimensional health that has been increasingly recognized is perceived health status (Lee et al., 2010). Yilmazel and Balci (2014) found that depression has a negative relationship with perceived health status for community-dwelling elderly. This means that with a more positive perceived health status, the elderly was less likely to suffer from depression. On clinical trial showed that functional decline, Activities of Daily Living (ADL) impairment, and mortality are positively correlated with depression (Hoppe et al., 2013). Lee et al. (2010) found that the steep decline in strength is positively correlated with depression.

Perceived health status and handgrip strength were negatively correlated with depression, while the number of diseases was positively associated with depression. The predictors for depression were perceived health status, competence and performance of ADL, handgrip strength, and social activities. Perceived health status was found to be the most influential predictor of elderly depression.

An interesting finding regarding the demographic characteristics of the participants in the study of Kim, Choe, and Chae (2009) was that Korean elderly women had a higher prevalence of depression in general (66.1%) and severe cases of depression (23.4%) when compared with Korean elderly men (47.3% for general depression and 16.5% for severe cases). The researchers explained that women, who are much more likely to be depressed and more deeply depressed than men, may not engage in many outdoor activities.

Depression and Gender

While depression affects both men and women, more women are diagnosed with depression than are men (Sachs-Ericsson et al., 2013). There are several reasons why women may feel sad or depressed. While some older women regain their emotional balance after a period of adjustment, some women do not recover from these circumstances and eventually develop depression. Menopausal women have worse symptoms of depression than do those who are post-menopausal (Minuzzi, Frey, & Soares, 2012). Due to the fact that older adults may have less obvious symptoms of depression, the indicators in older women who experience depression may go unnoticed (Miese, 2011). Moreover, women live longer than men, which could be a reason why they experience many losses.

Lifestyle Factors and Later-Life Depression

Godin, Elbejjani, and Kaufman (2012) and Walsh (2011) noted that physical health practices and health status (number of hours slept at night, engagement in physical activity, regular meals, smoking, and alcohol consumption) were related to depression in the elderly. The researchers found that healthy eating habits, engaging in regular exercise, sleeping seven to eight hours per night, not smoking, and restrained alcohol consumption were associated with healthier individuals.

Lifestyle Leisure

Poelke et al. (2016) researched leisure activities and depressive symptoms in older adults with cognitive complaints. They claimed that depressive symptoms are associated with increased risk of cognitive impairment among older adults. They conducted an

experiment where inactive older adults with cognitive complaints were enrolled in a Mental Activity and Exercise (MAX) Trial for the duration of 12 weeks. The results of their experiment indicated a significant decrease in depressive symptoms after increasing the total hours per week engaged in leisure activities. As a conclusion, they claimed that increasing the amount of leisure activity level might help lower depressive symptoms for older adults especially those that are inactive.

Physical Activities

Ramkumar (2011) used the term, *play behaviors* to define the lifestyle activities in which older adults in rural and urban communities engage as they approach their retirement. Ramkumar found that older adults tend to return to a play-dominated lifestyle as leisure activities. These activities tend to be familiar ones that provide additional opportunities for physical activity, learning, and social interaction through exposure to an enriched environment. Leisure activities are additional opportunities for interest beyond the mere performance of household activities. Depression has been clearly associated with low levels of physical activity (Mata et al., 2012).

Other factors can influence depression in the elderly. Das et al. (2014) found that economic support is an important strategy for diminishing geriatric depression. In their study, Das et al. found that individuals with lower income are more depressed. Furthermore, the researchers discovered that individuals with lower household incomes were 2.57 times more likely to suffer from depression. Participating in social leisure activities can provide companionship and can lead to positive appraisal of social support,

which can assist people in coping with difficult events, such as isolation, role loss, medical illnesses, and depressive symptoms, more easily (Ramkumar, 2011).

The antidepressing effect of physical activity has been shown in various studies conducted among with older adults (Ramkumar, 2011; Smith et al., 2014). Poorer perceived health is associated with an increase in depression among the older population (Yilmazel & Balci, 2014). Physical activity has a positive impact to alleviating depression.

Li et al. (2010) studied the influences of leisure-time physical activity and occupational physical activity on depression in individuals above the age of 65. The total leisure-time activity and percentage of time spent in heavy-intensity activity were assessed from using self-report instruments. The researchers found that participation in leisure activities not only mitigated against depression but also improved the quality of life of the elderly.

Exercise

Danielsson, Noras, Waern, and Carlsson (2013) studied the benefits of aerobic exercise for patients with major depression. The researchers also investigated the interaction of this intervention with the administration of antidepressants. The results were positive. Danielsson et al. found that aerobic exercise can produce substantial improvement in mood in patients with major depressive disorders. Furthermore, the effects of the administration of antidepressants were significantly improved with the introduction of aerobic exercise to patients with major depression. The relationship between exercise and improved physical and psychological health is well established in

both healthy populations and in people with long-term conditions, and active lifestyles are generally promoted in all populations where physical activity can be safely undertaken (Zschucke, Gaudlitz, & Ströhle, 2013).

Public health interventions have been established for routine modification in response to lifestyle diseases. Carek et al. (2011) found that among the elderly, physical exercise helps improve physiologic responses to stress, self-perceptions of control and mastery, and self-efficacy. Di Benedetto et al. (2014) stated that exercise and diet might result in better physical health. Physical exercise programs yielded clinically relevant outcomes in the treatment of depressive symptoms in depressed people over the age of 60 years (Lee, Lee, Brar, Rush, & Jolley, 2014). These studies were about programs that encourage physical activity for the elderly such as daily exercise and healthy diet.

Researchers have shown the impact of physical activities on depression among the older population (Blake, 2012; Lee et al., 2014). In a study among community-dwelling elderly adults, Lee et al. (2014) found that depression was inversely related to physical exercise. The researchers found that lower levels of physical activity were associated with depression. Physical activities were examined, specifically the level of physical activity and its association to the individual's disposition and depression. These variables were gender, age, socioeconomic status, social relations, disability, chronic conditions, body mass index, smoking, and alcohol consumption. After controlling for these variables, it was found that physical activity is a predictive factor of depression.

Perceived Social Support

Another factor studied in this research was perceived social support, which includes family relations. More than economic and health factors, the role of family relations plays an important part in older adults' well-being. Family relations are important because the family provides support to elderly adults who are diagnosed with depression or depressed moods. That support provides encouragement to the older adults to seek health and medical services for treatment. Hawton et al. (2011) opined that social isolation may have an impact on the health and well-being of older people and actions to address social isolation may yield positive results. Hawton et al. (2011) implied that perceived social support is inversely related to depression as well. Similarly, rural areas and high levels of perceived social support have been known to be linked to lower the likelihood of depression (Dai et al., 2012; Hawton et al., 2012).

Depression and Disability

The relationship between depression and physical functioning has been documented in both cross-sectional and longitudinal studies (Song, Meade, Akobundu, & Sahyoun, 2014). Depression was found to affect the physical function of older adults (Song et al., 2014).

Disability Comorbidity

Disability can be a factor of depression in older adults. Verhaak, Dekker, De Waal, Van Marwijk, and Comijs (2014) found an increased risk of incident self-reported depression among the elderly who were suffering from somatic illnesses and disability among 502 individuals older than 60. The researchers also noted that the elderly were

more likely to suffer from depression because of disability, as compared to somatic illness. However, they noted that somatic illnesses usually led to these disabilities. Population-specific preventive care programs that consider physical, cognitive, and social aspects are needed not only to maximize active life expectancy, but also to improve quality of life relative to disability, especially in old women (Li et al., 2010).

Depressive symptoms may predict functional decline when there are changes in physical health condition (Song et al., 2014). Studies have shown functional decline to be more prevalent in women, specifically among African Americans, which can be related to biological conditions such as the postmenopausal stage (Schneider & Lichtenberg, 2011). Functional decline has been associated with fewer years of education and older age (Williams & Kemper, 2010).

Environmental, social, psychological, lifestyle, genetic, and physiological factors can cause dysregulation in the physiological functions of older adult (Hidaka, 2012; Leonard & Maes, 2012). Three such influences are critical in the etiology, progression, and treatment of depression: diet, sleep and exercise. The relationship between these mediators and depression could likely be bidirectional.

Exercise and Depression

Depression and low levels of physical activity have been found to be associated. A constant relationship between physical activity and depression exists across a number of populations (Vallance et al., 2011). In adults, a reduction in depressive symptoms was found to be associated with an active lifestyle, independent of education and physical health status (Vallance et al., 2011). Vallance et al. (2011) found a negative correlation

between the levels of moderate to vigorous physical activity and the risk of depression for overweight and/ or obese adults. Song, Lee, Baek, and Miller (2012) conducted another study of more than 4,000 men and women, aged 20 years or older, and found that depressed adults spend significantly less time doing light or moderate physical activity than do adults who are not depressed. Azevedo, Da Silva et al. (2012) conducted a longitudinal study of more than 9,000 people and found that reduced risk of depressive symptoms at follow-up was correlated with regular physical activity.

Conn (2010) conducted a meta-analysis on supervised and unsupervised physical activity of healthy adults and found a moderate, inhibitory effect of physical activity interventions on depressive symptoms in adults with and without clinical depression (mean effect size of 0.37 for supervised and 0.52 for unsupervised physical activity studies). This finding means that the effect of depression is moderated when one person has several interventions of physical activities. Rimer et al. (2012) found similar antidepressant effects for exercise in people with a diagnosis of depression when compared with no treatment or control intervention; however, since analyses of methodologically robust trials show a much smaller effect in favor of exercise, some caution is required in interpreting these results. Krogh, Nordentoft, Sterne, and Lawlor (2011) expressed concern that there is still a scarcity of research to show the long-term benefits of exercise on clinical depression, despite the positive findings from several studies because there is still no long-term study of exercise. Song's (2009) study included 3,785,145 community-dwelling older adults (65 years or older) who participated in the Canadian Community Health Survey. Results revealed that older adults with

depression were less likely to participate in leisure-time physical activities because they were not open to trying new things to lessen their depression. Similar results were observed between chronic physical conditions and participation in leisure-time physical activities (Song, 2009). These results provide evidence that people with depression or physical illness may have the limited interest to participate in leisure activities, thus programs that encourage physical activities may not work.

Effect of exercise on neurotransmitters. Exercise may have an effect on neurotransmitters, which could be significant to the level of depression among older adults. The effects of exercise on serotonin enhancement have been demonstrated in human trials. Wipfli, Landers, Nagoshi, and Ringenbach (2011) found increases in serum serotonin levels were achieved by untrained participants who were randomly assigned to an aerobic exercise group, as compared to those in a control-stretching group. Melancon, Lorrain, and Dionne (2012) found that acute exercises increase tryptophan availability, which is a precursor of serotonin.

Researchers have further found that exercise is also capable of modifying dopamine and noradrenogenic transmission, as evidenced by higher tyrosine hydroxylase expression (Kim, Shin, Yoon, & Stewart, 2002), elevated striatal dopamine D2 receptor expression (Vucckovic et al., 2010), and in rats subjected to constant exercise. The effects may be different among depressed people and the levels of dopamine and noradrenergic may be different among older adults.

Effect of exercise on the Hypothalamic-Pituitary-Adrenal (HPA) axis. Exercise may also have an effect on the HPA axis. Campeau et al., 2010 have agreed that

the connection between HPA activity and exercise is multifaceted as it is affected by duration, type, intensity, and chronicity of exercise, characteristics of stressors used, and characteristics of the population studied. Liu, Ho, and Mak (2012) found that rats that experienced prenatal exposure to high levels of glucocorticoids and were subjected to 4 weeks of swimming exercise demonstrated lower levels of serum corticosterone and depressive symptoms. Campeau et al. (2010) found that rats that were subjected to intermittent voluntary wheel running had lower HPA axis response to lower intensity stressors than did rats following exposure to more intense stressors.

The effects of acute activity on measures such as cortisol and adrenocorticotropic hormone (ACTH) were the focus of investigations by researchers regarding the relationship between exercise and HPA activity. Rudolph and McAuley (2010) found that, in general, cortisol levels are elevated by acute exercise, although this phenomenon also occurs following moderate- to severe-intensity activity. Female adolescents with mild to moderate depression involved in an 8-week exercise regimen were found to have improved depressive symptoms; this improvement was linked with lower 24-hour urinary cortisol levels. Although several of these studies did not involve older adults or individuals with depression, they demonstrate a link between exercise and improvement of mood.

Effect of exercise on neuroprogression. Neuroprogression is related to how a patient is able to cope with depression. Exercise is proven to have significant effects to neuroprogression. Three reviews provide support for the beneficial effects of exercise on brain function (Brandt, Maass, Kempermann, & Storch, 2010; Ding, Vaynman, Akhavan,

Ying, & Gomez-Pinilla, 2006; Vivar, Potter, & van Praag, 2012). Researchers also found that exercise stimulated neural progenitor populations, increased the number of new neurons, and promoted the survival of these new cells in both young and old animals (Brandt et al., 2010). Brain-derived neurotropic factor (BDNF) was found at increased levels in several brain regions because of exercise, and there was increased insulin-like growth factor-1 gene expression and peripheral circulating levels of the insulin-like growth factor-1 (Ding et al., 2006).

Knaepen, Goekint, Heyman, and Meeusen (2010) conducted a review of the effects of exercise on peripheral BDNF in human subjects and found that exercise temporarily increased basal BDNF and possibly up-regulated BDNF cellular processing. There have been no reported findings of the long-term effects of exercise or training on BDNF responses. Laske et al. (2010) found that elderly women with remitted major depression found increased BDNF levels associated with exercise.

Depression and Community Setting

There may be significant differences in the levels of depression experienced by older adults who live in rural areas than those who live in urban areas. Older adults who reside in rural communities may experience depressive symptoms due to limited access to services and other forms of social and economic support (Fukunaga et al., 2012). Fukunaga et al. found that the prevalence of depressive symptoms associated with adults who live alone was due to dissatisfaction with distance of family or friends, and housing. Young adults may abandon rural areas and move to urbanized areas, leaving their old parents behind, because of the lack of occupational and educational opportunities in rural

areas. Parents whose children leave the area become lonely and may be unable to fend for themselves. This difficulty, coupled with loneliness, can result in detrimental effects on parents.

Older adults in rural and urban communities differ in the amount of facilities available and support they receive (Fukunaga et al., 2012). In a rural community, older adults have access to support from the neighborhood. However, older adults in urban communities may experience difficulty in accessing facilities and supports due to changing neighbors and proximity of residential locales. Similarly, older adults in rural areas may have difficulty in accessing medical facilities that are available in the urban areas. Song (2009) examined the relationship between depression and leisure-time physical activity among community-dwelling Canadian adults (65 years and older).

Nishihara, Imui, Kato, Tomizawa, and Hayakawa (2011) claimed that urban-dwelling older parents might be at a lower risk of developing depression due to the presence of their children. The authors investigated whether the observed association between these traits is mainly a result of genetic or environmental influences and claimed that older parents in urban settings are more likely to receive adequate care and company, making them more comfortable and happy. However, in the case of older persons residing in rural areas, the presence of children may not ensure adequate care and attention. In urban areas, the children may not have as much free time to care for their parents, as compared to those living in rural areas. Nishihara et al. (2011) claimed that children's inability to provide care for their elderly might lead to elders' deteriorating

health conditions, including depression. This scenario can apply in both rural and urban areas.

Rural older adults' social networks may vary in structure and support from those of urban-dwelling older adults (Kaufman, Kosberg, Leeper & Tang, 2010) because there is less social interaction and less in-depth interaction among those dwelling in urban areas. Socialization allows for people to maintain the interpersonal relationships in the community, which entails the various interactions and activities (Kaufman et al. 2010). This function includes visiting and conversing with old friends, an activity that is important in preventing depression. The older person who loses the ability to function socially risks development of depression because loneliness and the lack of the physical function lead to deterioration of the older adult's physical and emotional health.

Gray (2011) investigated the prevalence of mental disorders and depression in rural communities and urban communities, and found that adults living in urban areas are 17% more likely to suffer from psychological disorders. However, the researcher noted that individuals in rural areas suffered from poorer access to mental health facilities and services compared to individuals in urban areas. McDonald, Curtis-Schaeffer, Theiler echoed this finding, and Howard (2014), who noted that anxiety was more prevalent in urban areas. However, the researchers noted that substance abuse and its related disorders were more prevalent in frontier rural areas. St. John, Blandford, and Strain (2009) conducted another study comparing adults, aged 65 years or older, living in rural areas and their urban counterparts. The aim was to determine if older adults living in rural areas without symptoms of depression have a lower likelihood of experiencing

depression, as compared to their urban counterparts. St. John et al. sought to determine the different factors that predict the progression of symptoms of depression in older adults in urban and rural areas. Their findings indicated that 13.3% of adults 65 years or older living in urban areas developed depressive symptoms, compared with only 8.9% of those living in rural regions. One reason for this finding could be that their study was set in the Canadian province of Manitoba amongst a community-dwelling population of older adults who were cognitively intact. Furthermore, residing in a rural setting was not linked with the development of depressive symptoms through multivariate analysis. Despite not being linked with the development of depressive symptoms, other researchers found that coping with depressive symptoms was easier in rural areas (St. John et al., 2009). Female gender and poor self-rated health at the time of the first interview were found to be significant factors that predicted depressive symptoms in rural areas (St. John et al., 2009).

Depression, when recognized, can be treated or reversed to improve an individual's quality of life and reduce demands on relatives and health services (Li et al., 2010). Untreated and undertreated depression among older adults can have adverse health effects and may increase the likelihood or presence of cognitive and functional impairments or vice versa, which could result in higher rates of health care services, early institutionalization, and mortality (Miese, 2011).

Summary and Conclusion

Depressive symptoms can contribute substantial personal, social, and economic burden on those afflicted older adults and their families**.** As emphasized in studies

conducted by Kilic et al. (2014), Onat et al. (2014), and Yaka et al. (2014), depressive symptoms among older adults reflect a serious health problem. However, these symptoms of depression are often unnoticed and disregarded by mental health professionals and physicians, and remain understudied by health researchers (Miese, 2011). The neglect of older adults' depression is becoming a public health issue. The scarcity of empirical studies that provide an understanding of depression among older adults in rural and urban communities compounds the problem.

Lower perceived health was associated with an increase in depression among older adults (Fukunaga et al., 2012). While older adults in rural and urban communities approach retirement and may have more time for activities, their capability to engage in physical activities is decreased, as compared to younger adults (Fukunaga et al., 2012). A review of research findings showed that high levels of depression are inversely associated with levels of physical activity in older adults (Blake, 2012).

The theoretical foundation of the study was based on three seminal psychological frameworks, which are Erikson's (1968) theory of psychosocial development, Beck's cognitive model of depression, and Seligman's learned helplessness model. Erikson's (1968) theory of psychosocial development served as the framework in identifying depressive symptoms among community-dwelling elders. According to Erikson, human development is a never-ending process that involves the resolution of eight specific psychosocial stages ranging from birth to death. Erikson's theory guided the current study by emphasizing the need to understand the elderly population, given that they have specific struggles and concerns. Beck's (2005) cognitive model of depression claimed

that there are various sources of depression, from the physical to the cognitive, behavioral, and affective. Seligman' (1972) learned helplessness model claimed that depression in people by proposing that people who go through uncontrollable stressors and punishing situations eventually do not attempt to find solutions to their problems. It was known that depression might be caused by the belief that aversive circumstances and experiences cannot be controlled.

A scarcity of literature exists on ADL and depressed moods among older adults dwelling in rural and urban communities. Those few studies found through an extensive search revealed the authors had failed to include the demographic factors, support group and socio-demographic of older adults in their analyses of the levels of depressive symptoms. The methodology to address this shortcoming through the present study is described in Chapter 3.

Chapter 3: Methodology

Introduction

The focus of the study was to examine whether independent variables such as (a) daily lifestyle activities, (b) community setting (rural or urban), (c) gender, (d) perceived social support, (e) marital status, and (f) comorbidities significantly predict depressive symptoms among community-dwelling older adults living in Northern Louisiana. A quantitative, predictive research with a regression analysis design was followed to examine the relationship of depressive symptoms, the dependent variable, with the independent variables of daily lifestyle activities; perceived social support; and sociodemographic variables such as gender, community setting, marital status, and comorbidities. The sample population included community-dwelling adults living in Northern Louisiana. A self-administered survey questionnaire was used to collect the data in this study. Data analyses consisting of a correlation test to address Research Questions 1 to 6 and a hierarchical multiple linear regression analysis to address Research Question 7 were discussed.

Research Design and Rationale

A quantitative method was chosen for this study to determine the predictive nature of the following independent variables: (a) daily lifestyle activities, (b) community setting (rural or urban), (c) gender, (d) perceived social support, (e) marital status, and (f) comorbidities on the dependent variable of depressive symptoms as experienced by community-dwelling older adults. A quantitative method was chosen because an association of relationships between the variables can be more readily recognized with

quantitative rather than qualitative results. Using a quantitative method allowed a relationship to be determined by assigning numerical values to the variables (Caruth, 2013). Assigning numerical values to the variables in the study allowed the results to be quantified by using different statistical procedures. Quantitative studies are used to determine the association between one or more numeric variables (Creswell, 2013), to contrast these variables, and evaluate the statistical relationships between the variables (Creswell, 2013).

The qualitative method was considered, but not chosen for the study because qualitative methods are used to obtain information regarding the experiences of the participants and their perceptions. A qualitative researcher is interested in addressing the, "how" and, "why" questions related to the research, while considering a deeper understanding of the experiences of participants (Creswell, 2013). To satisfy the objectives of the present study, a qualitative study would not have been appropriate because the objective was not to describe the experiences of an individual or teams to relate to their performance. Moreover, qualitative analysis does not allow for the use of statistical tests to analyze relationships between variables.

An observational or descriptive study design was considered but rejected because the direct impact or relationship between the level of depressed moods and the daily lifestyles activities of the home dwelling older adults was not the aim of this study. The purpose of an observational or descriptive design is to observe and record information about the participants that describe the characteristics rather than determine an association between the information that is collected. The intention of the present study

was to determine the relationship of older adults' depressive symptoms with the variables daily lifestyle activities; perceived social support; and sociodemographic variables, such as gender, community setting, marital status, and comorbidities. As such, the quantitative predictive design with a regression analysis was considered the most appropriate for the study.

Methodology

The purpose of the study was to determine whether lifestyle activities, gender, social support, and dwelling place were associated with depressive symptoms among community-dwelling older adults. Based on the study objectives, the focus was to associate a variable from one to the other. The quantitative method was appropriate to identify depressive symptoms in community-dwelling elders through establishing statistical relationships between the variables considered in this study. This quantitative research enabled the comparison of the variables to determine whether there were significant statistical relationships between them (Creswell, 2013). A predictive design was used with a regression analysis because it provided a means to determine whether the independent variables of daily lifestyle activities, community setting, gender, perceived social support, marital status, and comorbidities older adults related to the dependent variable, their level of depressive symptoms.

Survey instruments were used to determine whether depressive symptoms were significantly predicted by daily lifestyle activities, community setting (urban versus rural), gender, perceived social support, marital status, and comorbidities. A questionnaire was used to capture sociodemographic variables, such as gender, age,

education level, monthly income, marital status, religious affiliation, and comorbidities. The Geriatric Depression Scale -15 (GDS-15; Greenberg, 2012) was administered to measure level of depressive symptoms, the Stanford Brief Activity Survey (SBAS; Ainsworth et al., 2012) to capture information on the daily lifestyle activities of the participants, and the Multidimensional Scale of Perceived Support (MSPSS) (Stewart, Umar, Tomenson, & Creed, 2014) to determine the participants' perceived social support.

Population

The participants for this research study were community-dwelling adults, 60 years of age and older, living in Northern Louisiana. In the study, men and women from diverse ethnic backgrounds (e.g., Hispanic, Native American, Asian, African, Caucasian, and others) were recruited from the Northern Louisiana Council on Aging, as well as senior centers in Caddo Parish, Bossier Parish, Lincoln Parish, and Union Parish. Before contacting the individuals and distribution of flyers, administrators were contacted through a formal letter (see Appendix A) to introduce the study and its purpose and to request permission to include individuals from the center as participants in the study. A signed letter of cooperation was obtained from administrators who agreed to be included in the study. After which, approval from the Walden Institutional Review Board (IRB) was sought.

Senior center administrators who granted permission to allow recruitment from among the populations who frequent their centers were asked to distribute the flyers within the facilities. A flyer (see Appendix C) was posted at each of the respective centers to provide details as to when I would visit the facility to administer the data

collection instruments. The initial screening process was also explained to the administrators. The target population was composed of 85,371 older adults (U.S. Census Bureau, 2011). All of the individuals who attended activities offered by the agency and centers were asked to participate in the initial screening. Participants were recruited through announced schedule of distribution of flyers within the facilities. The administrators were tasked to announce the schedule for flyers distribution to ensure that potential participants were aware of this activity.

Sampling and Sampling Procedures

When calculating the sample size for a study, three factors are taken into consideration. The first factor is the power of the test. The power of the test measures the probability of rejecting a false null hypothesis (Creswell, 2013). Using a low statistical power can lead to a poor chance of detecting a significant effect (Cohen, 1992). Using a high statistical power can result in a large sample size that may be impractical for a researcher, resource-wise (Cohen, 1992). Therefore, Cohen (1992) suggested that a statistical power of 0.8 be used. In addition, in a similar study on the efficacy of exercise in reducing depressive symptoms, Rethorst, Landers, Nagoshi, and Ross (2012) used a power of 0.8 to compute the sample size. Therefore, for the purpose of this study, a power of 0.8 was selected.

The second factor is the effect size, which measures the strength of the relationship between the variables in the study (Cohen, 1992). Cohen (1992) defined the effect size for different tests into three different categories: small effect, moderate effect, and large effect. A smaller effect size means that the strength of the relationship is small,

which will require a larger sample size. Cohen (1992) proposed a medium effect size of 0.15 to be desirable because the value may be able to approximate the average size of observed effects in various fields. Driscoll and Wierzbicki's (2012) study of causes of depression in the elderly had a medium effect size of 0.15. Therefore, for the purpose of this study, a medium effect size of 0.15 was selected.

The final factor considered was the level of significance. The level of significance is the probability of rejecting a true null hypothesis and is usually defined as being equal to 5% (Rethorst et al., 2012). For the purpose of this study, two types of statistical tests were employed: Pearson correlation test and multiple linear regression tests. Pearson correlation analysis requires a minimum sample size of 84 participants. For a multiple linear regression test using eight predictor variables, a sample size of 102 would be required to have a medium effect size (Cohen, 1992). Therefore, the ideal sample size would include at least 102 participants.

Procedures for Recruitment, Participation, and Data Collection

Flyers were sent out to senior centers, as well as posted to inform potential participants as to when the survey would be administered in the center. The flyer contained the objectives of the study and the procedures to participate. Informed consent was requested and obtained from all elderly adults who wished to participate in the study (see Appendix D). The informed consent form is a document that provides details of the study's purpose, the procedures the study participants would undergo when participating in the study, the voluntary nature of the study, risk and benefits of being in the study, compensation that would be received when participating in the study, and the methods

conducted in the research to maintain confidentiality. My contact information was included in the informed consent form so study participants could contact me whenever they had questions. Each of the study participants agreed and signed the informed consent for them to be allowed to undergo the study's data collection procedure.

The informed consent form (see Appendix D) included the purpose of the study, possible discomforts, and potential risks. The informed consent also provided written assurance (a) that participants would remain anonymous, (b) that they could withdraw at any time, and (c) participants who experienced any emotional discomfort from involvement in the study would be provided with a referral list of mental health providers in his or her area (see Appendix E). Potential participants were given the opportunity to review the informed consent form and ask questions. Each potential participant was required to sign the informed consent form, cosigned by me. A copy of the signed form was provided for the participant's personal records.

After obtaining informed consent, each potential participant was administered the Mini Mental State Examination (MMSE; Folstein, Folstein, & McHugh, 1975; see Appendix E), an instrument used to determine if an individual has cognitive dysfunction. The MMSE is a 30-point questionnaire that can be completed in 10 minutes. Participants who scored 25 points or higher on the MMSE were considered eligible for the study. The reliability of the questionnaire was determined at .82, while the validity was measured through the correlation of .93 between items Folstein, 1975). The initial screening was conducted to ensure that patients with cognitive dysfunction that might affect their

abilities to complete the questionnaires were excluded from the study. Individuals were eligible for this study if they were at least 60-years-old and resided in the community.

After a potential participant's MMSE was completed and scored, eligible participants were administered the SBAS (Ainsworth et al., 2012), GDS-15 (Greenberg, 2012), MSPSS (Stewart et al., 2014), and the demographics questionnaire. Participants were asked to complete the questionnaires in the presence of the reviewer to ensure that they were completed correctly.

Instrumentation and Operationalization of Constructs

Participants identified their gender, community setting (e.g., rural or urban), age, education level, monthly income, marital status, family status, and comorbidities (see Appendix F). Gender, community setting, marital status, and comorbidities were the independent variables used to describe the participants in this study. Other measurement instruments used in this study included the GDS-15 (see Appendix G) to measure depressive symptoms, the SBAS (see Appendix H) to measure levels of DLA, and the MSPSS (see Appendix I) to measure perceived social support.

The GDS-15 is a measure of depressive symptoms in elderly patients (Sheikh & Yesavage, 1986). This instrument was administered to measure the dependent variable of depressive symptoms. The instrument was designed to discriminate the pattern of depressive symptoms from the general characteristics of the elderly population. There are two versions of the GDS. The first version consists of 30 questions that are answerable by, "yes" or, "no". The second version consists of 15 questions that are also answerable by, "yes" or, "no" (Sheikh & Yesavage, 1986). In both versions, a, "yes"

response is coded as 1 while a, "no" response is coded as 0. In this study, the GDS-15 was used. Possible scores range from 0 to 15; higher scores indicate higher levels of depressive symptoms. The GDS-15 is also reliable (Greenberg, 2012) and valid based on criterion validity. With regard to reliability of the GDS-15, the Cronbach's alpha is 0.72 (Mui, 1996) and 0.81 (Almeida & Almeida, 1999).

The SBAS (Ainsworth et al., 2012) was administered to measure the independent variable of participants' level of intensity and type of the daily lifestyle activities. The SBAS is scored as shown in Appendix H. The SBAS is a brief questionnaire containing two subscales that measure occupational and leisure time physical activity levels. A 5-point Likert-type scale is used to classify participants' activities into the following categories: *inactive, light intensity, moderate intensity, high intensity,* and v*ery high intensity* (rated as 1 through 5, respectively). The Cronbach's alpha reliability score is .75 (Ainsworth et al., 2012). The test-retest reliability is .61, while the validity, as determined through correlation analysis between items, is .38 (Ainsworth et al., 2012). The low correlation between items is because of the uniqueness of each lifestyle activity. The SBAS is considered as a reliable and valid measure of the participants' level of intensity and type of the daily lifestyle activities.

The MSPSS (Stewart et al., 2014) was administered to collect data regarding the dependent variable of participants' perceived social support. This instrument was designed to provide assessment of three sources of support: family, friends, and significant other. The MSPSS includes 12 items reported on a 7-point Likert-type scale ranging from 1 (*strongly disagree*) to 7 (*strongly agree*). The scale has an overall internal

reliability of .93. Although the MSPSS measures three subscales of perceived social support, the overall score was considered for the statistical analysis to test the hypotheses in this study. Possible scores for the MSPSS range from 12 to 84, with higher scores indicating higher perceived social support. The operational constructs of the instruments are presented in Table 1.

Table 1

Operationalization of Constructs

Variable name	Variable type	Type of measure	Possible values	Instrument
Daily lifestyle activities	Independent variable	Categorical	1–5 (see scoring chart)	SBAS
Type of community setting	Independent/ control variable	Dichotomous	Rural (1) or urban (2)	Demographic sheet
Gender	Independent/ control variable	Dichotomous	Male (1), female (2)	Demographic sheet
Perceived social support	Independent variable	Continuous	12–84 (Summed scores of all questions)	MPSS
Depressive symptoms	Dependent variable	Continuous	0–15 (Summed scores of all questions)	GDS-15
Marital Status	Independent/ control variable	Dichotomous	Single (1) Married (2)	Demographic sheet
Comorbidities	Independent/ control variable	Dichotomous	Yes (1) No (0)	Demographic sheet
Comorbidities	Independent/ control variable	Continuous	Number of Mental Illness	Demographic sheet

Data Analysis Plan

Pearson correlation and multiple linear regressions were performed in this study to address the following research questions and hypotheses:

RQ1: Is engagement in daily lifestyle activities related to depressive symptoms among community-dwelling older adults?

$H1_0$: Engagement in daily lifestyle activities will not be related to depressive symptoms among community-dwelling older adults in northern Louisiana.

$H1_A$: Engagement in daily lifestyle activities will be negatively related to depressive symptoms among community-dwelling older adults in northern Louisiana.

RQ2: Is community setting related to depressive symptoms among community-dwelling older adults?

$H2_0$: Community setting will not be related to depressive symptoms among community-dwelling older adults.

$H2_A$: Community setting will be related to depressive symptoms among community-dwelling older adults.

RQ3: Is gender related to depressive symptoms among community-dwelling older adults?

$H3_0$: Gender will not be related to depressive symptoms among community-dwelling older adults.

$H3_A$: Gender will be related to depressive symptoms among community-dwelling older adults.

RQ4: Is perceived social support related to depressive symptoms among community-dwelling older adults?

$H4_0$: Perceived social support will not be negatively related to depressive symptoms among community-dwelling older adults.

$H4_A$: Perceived social support will be negatively related to depressive symptoms among community-dwelling older adults.

RQ5: Is the marital status related to depressive symptoms among community-dwelling older adults?

$H5_0$: The marital status will not be related to depressive symptoms among community-dwelling older adults.

$H5_A$: The marital status will be related to depressive symptoms among community-dwelling older adults.

RQ6: Is comorbidity related to depressive symptoms among community-dwelling older adults?

$H6_0$: Comorbidity will not be related to depressive symptoms among community-dwelling older adults.

$H6_A$: Comorbidity will be positively related to depressive symptoms among community-dwelling older adults.

RQ7: Do combinations of the variables of daily lifestyle activities, community setting, and gender, comorbidities, perceived social support, marital status, and comorbidities significantly predict depressive symptoms among community-dwelling older adults in northern Louisiana?

$H7_0$: Combinations of daily lifestyle activities, community setting, gender, comorbidities, perceived social support, marital status, and comorbidities will not significantly predict depressive symptoms among community-dwelling older adults in northern Louisiana.

$H7_A$: Combinations of daily lifestyle activities, community setting, gender, comorbidities, perceived social support, marital status, and comorbidities will significantly predict depressive symptoms among community-dwelling older adults in northern Louisiana.

Before statistical analyses were performed, the dataset was cleaned of errors and missing responses. Outlier data were removed to avoid them having a significant effect on the results of the analysis. Missing data were filled using the mean of all responses to that particular question or item. Using the mean as a substitute allowed the computed mean value to not be significantly different.

Pearson correlation and multiple linear regressions are parametric tests that require the following assumptions: (a) data are normally distributed, (b) there is a linear relationship between two variables, (c) outliers are kept to minimum, and (d) homoscedasticity of data. If these assumptions were not met, nonparametric counterparts of the statistical tests were performed. To test whether the data followed a normal distribution, a Kolmogorov-Smirnov test was performed. To test whether two variables form a linear relationship, a scatter plot was generated for the two variables and was visually inspected. Outliers were identified from the scatter plot. The means and standard deviation of the data with or without outliers were used to determine whether or

not the data were skewed. If an outlier resulted in skewed data, that outlier would be removed from the analysis.

To check for homoscedasticity, which determines whether equal variances can be assumed, a visual inspection of a plot of the standardized residuals by the regression standardized predicted value was performed. Ideally, the residuals should be randomly scattered around the zero or horizontal line for homoscedasticity. If the data meet these assumptions, then parametric statistical tests can be performed. If the data violated any of these assumptions, nonparametric alternatives (Spearman correlation test, Mann-Whitney U test, Kruskal-Wallis test) would be performed instead.

To quantify participants' categorical responses, each possible response was assigned a numerical value. For instance, the item answerable by, "yes" had an assigned number of 1 and, "no" had an assigned value of 0. Categorical variables with more than two levels, such as education, and marital status, were scored numerically using ordinal values of 1, 2, 3, and so on. Scores from participants' responses to items with continuous variables were summed to determine an overall measure for level of depressed moods and the perceived social support. There was a particular scoring scheme for the daily lifestyle activity measure following the SBAS instrument.

Data were analyzed using Statistical Package for Social Sciences (SPSS) Version 22.0. Using a 95% confidence level, the statistical tests required a significance value of less than 0.05 for the results to be deemed significant. Socio-demographic variables, such as gender, age, education level, monthly income, marital status, community setting (e.g., rural or urban), and comorbidities were reported through frequency and percentage

summary to describe the sample population. Gender, marital status, comorbidities, and community setting served as predictor variables. Daily lifestyle activities were summarized using frequency and percentage, while perceived social support and depressive symptoms were summarized using the central tendency measures of mean and standard deviation.

The focus of the first seven research questions was to determine whether engaging in daily lifestyle activities, community setting (rural or urban), gender, perceived social support, marital status, and comorbidities significantly related to depressive symptoms in older adults. A Pearson or a Spearman correlation test was performed to determine whether the dependent variable of depressive symptoms was significantly related to the independent variables in this study. Pearson correlation was performed to test continuous independent variables, while Spearman correlation was conducted for categorical independent variables. The *p* value was analyzed first to determine whether the correlation was significant or not. A *p* value that was equal to or less than the level of significance (0.05) was indicative of a significant correlation between variables. After analyzing for *p*, the *r* coefficients of correlation were analyzed to determine the strength of the correlation and the direction of the correlation (positive or negative).

To answer RQ7, a hierarchical multiple regression analysis was conducted to determine if any of the independent variables (daily lifestyle activities, community setting, gender, perceived social support, marital status, and comorbidities) significantly predict depressive symptoms. Step 1 regressed the demographic information of gender, age, marital status, and type of community setting on depressive symptoms because the

variables of participants cannot be changed. Thus, these variables were treated as control variables. In Step 2, daily lifestyle activities, perceived social support, and comorbidities were included. If the regressions were significant, then each variable was examined to determine if that variable significantly predicted depressive symptoms. A level of significance of 0.05 was used in the regression analysis. If at least one of the beta coefficients was significant at 0.05, meaning the *p* value was less than or equal to the level of significance value, then the null hypothesis for RQ7 would be rejected, which would imply that there was a statistically significant impact of at least one of the independent variables on the dependent variable. The beta coefficient represents how strongly the independent variable influences the dependent variable. The sign of the beta coefficient was used to determine whether daily lifestyle activities, type of community setting, age, gender, perceived social support, marital status, and comorbidities had positive or negative effect on depressive symptoms among community-dwelling older adults.

Threats to Validity

The reliability of the survey instrument was established to ensure the credibility of the results of the analysis. Validity and reliability of surveys are used to confirm the instruments accurately measure what they are intended to measure. The survey instruments of MPSS, SBAS, and GDS-15 were used in previous studies and have proven validity and reliability. Reliabilities of the survey instruments of MPSS, SBAS, and GDS-15 were tested for this study. It was tested by calculating the Cronbach's Alpha statistics, which tests the internal consistencies of the survey responses in each of the

question items. The Cronbach's alpha value should exceed the minimum acceptable value of 0.70 to show acceptable reliability.

One possible threat of validity in a study is the researcher's bias (Creswell, 2013). However, this threat was not an issue in the current study, because the outcomes were objectively based on the results of the statistical analysis and not from subjective analytical procedures. One way to increase external validity is to use real-life settings. Participants were sought within their community and asked to provide real-life answers to survey questions. Another threat of validity was that the participants might not provide honest responses to the survey items and questions. To eliminate this threat, the survey respondents were constantly reminded that their responses would be anonymous and there would be no potential identifier information asked from them in the survey questions. The survey only sought to measure the participants' depressive symptoms levels, perceived social support, and DLA.

Ethical Procedures

When conducting a study that includes human subjects, a number of ethical concerns must be considered (Creswell, 2013). The initial priority was to obtain ethical approval from the Walden University Institutional Review Board to conduct this study. Once approval to conduct the study was obtained, distribution of information about the study to senior centers in Northern Louisiana initiated. Each prospective participant was provided an informed consent form (see Appendix C). The consent form was written to illustrate the main components of the study.

Informed consent was needed to participate in this study, and was acknowledged by the prospective participants. As part of the informed consent process, the study and its purpose were described, and potential participants were made aware of how long it would take to complete the entire survey, as well as any other information necessary for the study. The rights of participants to withdraw from the study at any time without consequence were explained, as well as that, participants had the option to refuse to complete the survey instruments if they felt uncomfortable or ill at ease with completing them. Confidentiality and anonymity were assured, and a list of therapists was provided to participants in case they experienced emotional distress while responding to the survey instruments.

Participation in the study was voluntary, and only those who agreed to sign the informed consent form were allowed to participate. Raw data from the survey instruments were tabulated and saved in a password-protected computer file. A backup of the data was created and stored on a password-protected portable drive. After the data have been stored and verified, the surveys themselves were shredded and appropriately discarded. The responses provided to each of the questions on the questionnaires were imported into a dataset on SPSS 22.0.

Each participant was assigned a unique control number for the surveys. This control number was used to maintain the confidentiality of the participants as well as to specify which responses corresponded to particular participants in the study. Paper copies of the data are now stored in a locked filing cabinet to which only the researcher has access. These actions and precautions will ensure the confidentiality of each

participant is maintained and no personal information will be accessible. Electronic data will be stored in the current researcher's personal files for a period of 3 years after completion of the research study, after which it will be destroyed and deleted from the hard drive. Three years after completion of the study, paper-based information will be destroyed using paper shredders. The elderly population is considered a vulnerable population. They were treated very carefully throughout the entire study. They were protected by not adding burden to their depressive symptoms. In case that they experienced depressive symptoms in the duration of the study, they were brought to a psychologist to protect their welfare.

Summary

In this chapter, the research methodology for the present study was presented. A quantitative research design was chosen as the most appropriate method for the current study. A predictive design was used to examine whether independent variables (gender, marital status, comorbidities, community setting, daily life style activities, and perceived social support) significantly predict the dependent variable of depressive symptoms among older adults in Northern Louisiana. A quantitative research design was more appropriate for the current study than a qualitative design because a qualitative design would not allow the assessment of a direct relationship between two variables using statistical tests (Creswell, 2013). The general population for the current study was rural and urban community-dwelling adults in Northern Louisiana. The research study was promoted through the use of flyers distributed within centers and agencies frequented by the target population. The participants voluntarily completed the survey instruments in

person. The data for this study were collected via survey instruments distributed to prospective participants. After obtaining informed consent, each potential participant was administered the different instruments of SBAS, GDS-15, MSPSS, and the demographics questionnaire. Participants were asked to complete the questionnaires in the presence of the reviewer to ensure that questionnaires were correctly completed by the participant.

In this chapter, the discussion of a description of the data collection process and the statistical analyses procedures to be conducted on the data, which include Pearson and Spearman correlations and hierarchical multiple linear regression, was conducted. Correlation testing was conducted to address Research Questions 1 to 6 and a hierarchical multiple linear regression analysis to address Research Question 7. Pearson and Spearman correlations were conducted to determine whether significant relationships existed between levels of depressive symptoms, daily lifestyle activities, perceived social support, and socio-demographic variables such as gender, community setting, marital status, and comorbidities of the participants. Hierarchical multiple linear regression analysis was used to determine whether independent variables significantly predicted the dependent variable of depressive symptoms in this sample.

Chapter 4: Results and Analysis

Introduction

In this study, the goal was to examine the factors that predict depressive symptoms among community-dwelling older adults. More specifically, daily lifestyle activities, comorbidity, and perceived social support, as well as a number of demographic variables, were examined to determine whether they could predict symptoms of depression in community-dwelling older adults. A cross-sectional, observational regression was used to determine whether there were associations between the variables of interest. Seven research questions were examined in this study. These were as follows:

RQ1: Is engagement in daily lifestyle activities related to depressive symptoms among community-dwelling older adults?

$H1_0$: Engagement in daily lifestyle activities will not be related to depressive symptoms among community-dwelling older adults in northern Louisiana.

$H1_A$: Engagement in daily lifestyle activities will be negatively related to depressive symptoms among community-dwelling older adults in northern Louisiana.

RQ2: Is community setting related to depressive symptoms among community-dwelling older adults?

$H2_0$: Community setting will not be related to depressive symptoms among community-dwelling older adults.

$H2_A$: Community setting will be related to depressive symptoms among community-dwelling older adults.

RQ3: Is gender related to depressive symptoms among community-dwelling older adults?

$H3_0$: Gender will not be related to depressive symptoms among community-dwelling older adults.

$H3_A$: Gender will be related to depressive symptoms among community-dwelling older adults.

RQ4: Is perceived social support related to depressive symptoms among community-dwelling older adults?

$H4_0$: Perceived social support will not be negatively related to depressive symptoms among community-dwelling older adults.

$H4_A$: Perceived social support will be negatively related to depressive symptoms among community-dwelling older adults.

RQ5: Is the marital status related to depressive symptoms among community-dwelling older adults?

$H5_0$: The marital status will not be related to depressive symptoms among community-dwelling older adults.

$H5_A$: The marital status will be related to depressive symptoms among community-dwelling older adults.

RQ6: Is comorbidity related to depressive symptoms among community-dwelling older adults?

$H6_0$: Comorbidity will not be related to depressive symptoms among community-dwelling older adults.

$H6_A$: Comorbidity will be positively related to depressive symptoms among community-dwelling older adults.

RQ7: Do combinations of the variables of daily lifestyle activities, community setting, and gender, comorbidities, perceived social support, marital status, and comorbidities significantly predict depressive symptoms among community-dwelling older adults in northern Louisiana?

$H7_0$: Combinations of daily lifestyle activities, community setting, gender, comorbidities, perceived social support, marital status, and comorbidities will not significantly predict depressive symptoms among community-dwelling older adults in northern Louisiana.

$H7_A$: Combinations of daily lifestyle activities, community setting, gender, comorbidities, perceived social support, marital status, and comorbidities will significantly predict depressive symptoms among community-dwelling older adults in northern Louisiana.

This chapter provides the results of a series of correlation and regression analyses to examine the research questions of interest. Before presenting the results of each test, the descriptive statistics for all major study variables are presented, and the assumptions of correlation and multiple regressions are tested.

Data Collection

This section provides descriptive statistics for all participants included in the study. Data collection started on April 26, 2016 and ended on May 13, 2016. All data collection procedures outlined in Chapter 3 was followed without discrepancy. The

sample consisted of 156 older adults from Northern Louisiana. With regards to gender, the majority, 66.7%, of participants (n = 104) were female. Participants reported whether they had any physical illnesses, and this variable was used to create the comorbidity variable. Participants who reported a health problem were assigned a 1, and participants who reported no health problems were assigned a 0. All but one participant had complete data for this variable (n = 155). Of those with complete data, 52.9% (n = 82) of participants reported that they did not have any health problems, whereas 47.1% (n = 73) of participants reported that they had a health problem or multiple health problems. With regards to marital status, participants were considered single if they were never married, divorced, or widowed. In the study, 57.1% of participants (n = 89) were single, while 42.9% (n = 67) were married. Finally, with regards to setting, 40.4% (n = 63) of participants lived in a rural setting, while 59.6% (n = 93) of participants lived in an urban setting. A nonprobability sampling method called purposive sampling was used for this study. A purposive sampling strategy was chosen for the study because participants needed to meet a set of inclusion criteria to be eligible to be able to participate in the study (Yang & Banamah, 2014). The sample included community-dwelling adults living in Northern Louisiana. The sample was not representative to all populations of community-dwelling adults, but only in the targeted population. The *gender of participants* is presented in Figure 1.

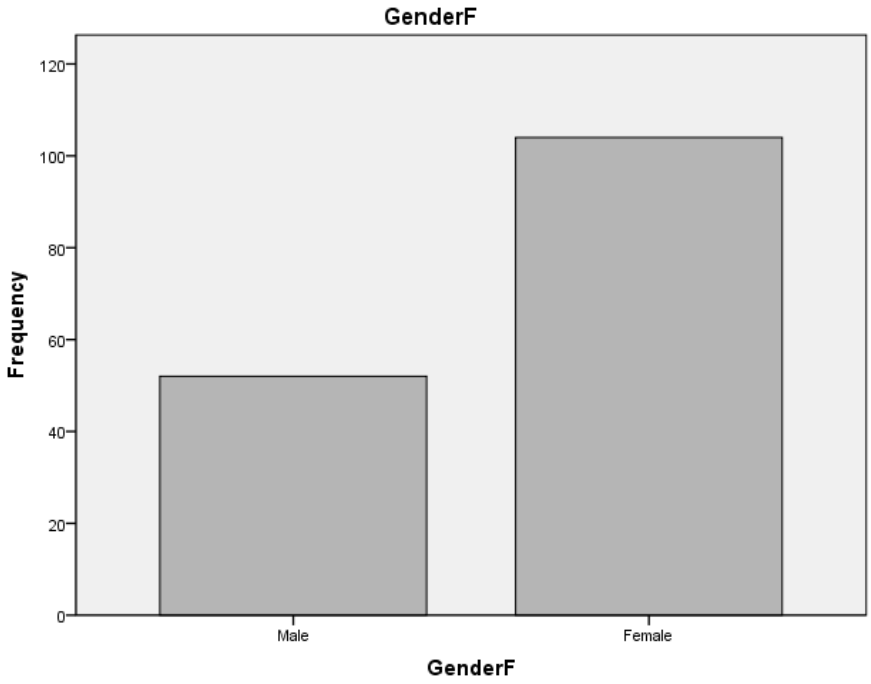

Figure 1. Bar chart indicating the gender of participants included in the study.

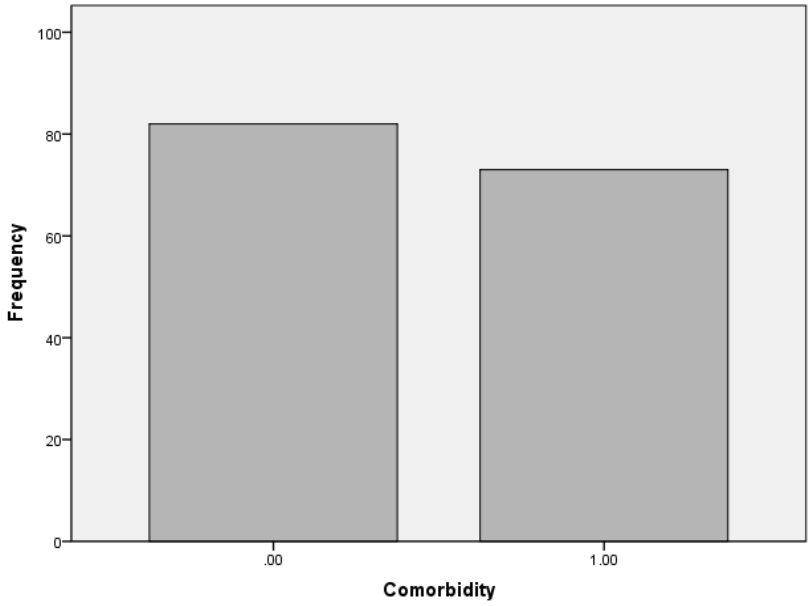

Figure 2. Bar chart of the comorbidity of participants included in the study.

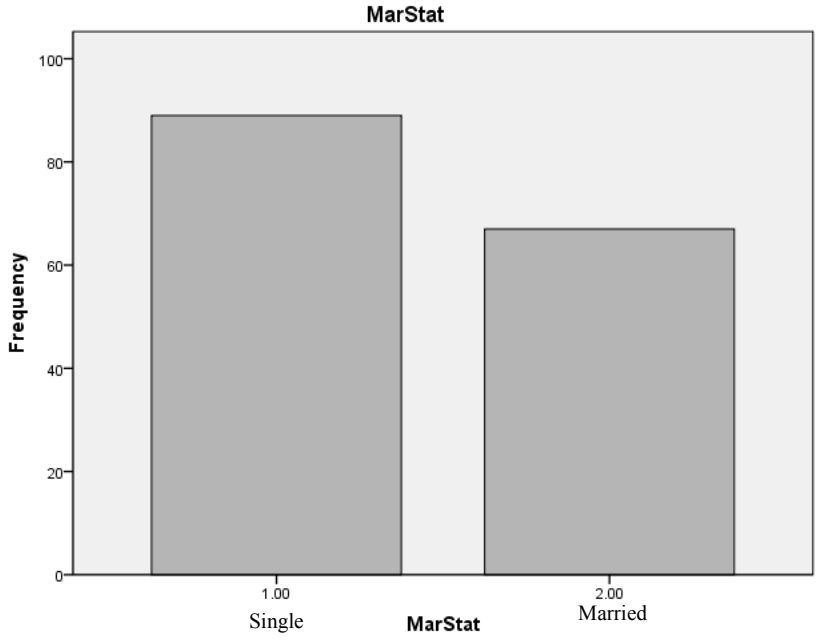

Figure 3. Bar chart of the marital status of participants.

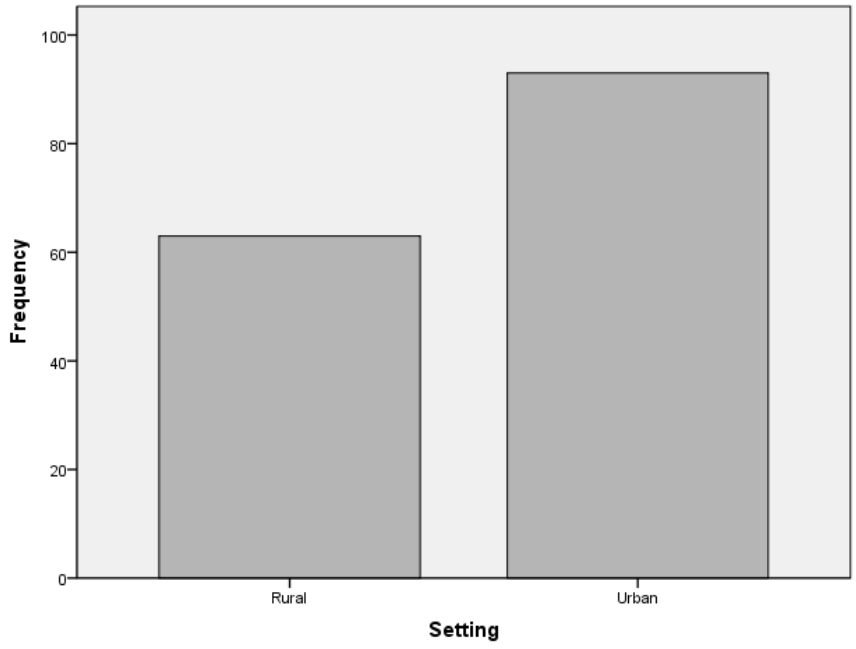

Figure 4. Bar chart of the type of community setting in which participants lived.

Results

Descriptive Statistics of Study Variables

Depressive symptoms. Depressive symptoms were assessed using the Geriatric Depression Rating Scale – Short Form. All participants (n = 156) had complete data on this variable. Scores ranged from 0 to 15, with an average of 5.92 (SD = 1.78).

Perceived social support. Perceived social support was assessed using the MPSS. Scores ranged from 12 to 84, with an average of 70.02 (SD = 17.10). One participant was missing data on this variable, so the mean was imputed for this participant. After mean imputation, the standard deviation for this variable was 17.05.

Daily lifestyle activity level. Daily lifestyle activities were assessed using the SBAS. All participants (n = 156) had complete data on this measure. Scores ranged from 1 to 5, with an average of 2.08 (SD = 1.04).

Data Analysis Overview

To address the research questions of interest, data analyses were conducted in two steps. To address Research Questions 1-6, a series of correlations were conducted to determine whether each of the variables of interest were associated with the outcome variable of depressive symptoms. To assess Research Question 7, a hierarchical multiple regression was conducted to examine the combined influence of each of the predictor variables on the depressive symptoms of community-dwelling older adults in northern Louisiana. Demographic variables were entered into the first step of this regression, followed by the daily lifestyle activities, perceived social support, and comorbidities in the second step.

Reliability Testing

The reliabilities of the measure of depressive symptoms, perceived social support, and daily lifestyle activity level were investigated. Cronbach's alphas were estimated to assess internal consistency reliability of the three instruments of GDS-15, MPSS, and SBAS. The Cronbach's Alpha values are summarized in Table 2.

The Cronbach's alpha value of GDS-15 for the measure of depressive symptoms was only 0.22, which was less than the minimum acceptable value of 0.70. The measure of depressive symptoms did not have acceptable internal consistency reliability. The reliability of the GDS-15 in the original study was 0.72, which showed acceptable internal consistency reliability. Comparisons of the reliabilities of the GDS-15 in this current study and in the original study were not similar.

The Cronbach's alpha value of MPSS for the measure of perceived social support was 0.95, which was greater than the minimum acceptable value of 0.70. The measure of perceived social support had acceptable internal consistency reliability. In fact, the Cronbach's alpha value was high, indicating that the measure of perceived social support had excellent internal consistency reliability. The reliability of the MPSS in the original study was 0.93, which also showed acceptable internal consistency reliability. Comparisons of the reliabilities of the MPSS in this current study and in the original study were similar.

The Cronbach's alpha value of SBAS for the measure of daily lifestyle activities was only 0.08, which was much less than the minimum acceptable value of 0.70. The measure of daily lifestyle activities did not have acceptable internal consistency

reliability. The reliability of the SBAS in the original study was 0.75, which showed acceptable internal consistency reliability. Comparisons of the reliabilities of the SBAS in this current study and in the original study were not similar.

Table 2

Cronbach's Alpha Measure of Measure of Depressive Symptoms, Perceived Social Support, and Daily Lifestyle Activities

	Cronbach's Alpha	N of Items
GDS	0.22	15
MPSS	0.95	12
SBAS	0.08	2

Assumptions Testing

Before conducting any analyses, the assumptions of correlation and multiple regressions were tested. All variables were checked for outliers by standardizing the variables and examining whether any standardized values were extreme. If any standardized values exceeded ± 3.29, they were removed from subsequent analyses (Field, 2013). Only one variable had outliers: four cases on the assessment of perceived social support had standardized scores of -3.40, suggesting that these values were extreme. These cases were, therefore, removed from subsequent analyses. All other variables did not have any standardized values that exceeded ± 3.29.

Pearson's correlation depends on two main assumptions: linearity and normality. Multiple regressions require testing for linearity, multicollinearity, influential cases, normality of residuals, and independent errors. To test for linearity, scatter plots of each of the predictor variables were examined with depressive symptoms to ensure the data

conformed to the assumption of linearity. Based on the scatter plots, the association between each of the predictors and the outcome variable all appeared to be linear. As such, the assumption of linearity was met.

To assess normality, Kolmogorov-Smirnov tests were conducted. The Kolmogorov-Smirnov test was statistically significant for all predictor variables and the outcome variable ($p < .001$ for all tests), indicating that the data did not conform to the assumption of normality. Due to the statistically significant Kolmogorov-Smirnov tests, skewness and kurtosis statistics were also examined for each variable. Field (2013) argued that *z*-scores for skewness and kurtosis statistics could be used as an indicator of univariate nonnormality. When *z*-scores exceed 3.29 for skewness or kurtosis, it indicates a potential problem for subsequent data analysis. Many variables exceeded the 3.29 threshold, including perceived social support (for both skewness and kurtosis), depressive symptoms (for skewness only), and daily lifestyle activity levels (for skewness only).

Through the results of assumption checking, it was found that the data do not conform to the assumption of normality, which is required for both Pearson's correlation and standard multiple regression. As such, Spearman's correlation coefficient was utilized to test Research Questions 1-6. This is a non-parametric statistic that does not require the data to be normal in order to compute accurate estimates (Field, 2013). To conduct the multiple regressions, bootstrapping was utilized. Bootstrapping analyses do not make distributional assumptions about the data, and are therefore useful in situations where the data are non-normal (Fox, 2015). Since both these analyses make few assumptions about the nature of the data, further assumption checking was not necessary.

Moreover, given that these statistics were used, the three participants who were outliers on the perceived social support variable in all analyses were included, because they did not pose a threat to the accuracy of the Spearman's correlations or bootstrapped multiple regressions.

Results of Spearman Correlation Analysis

The results from Spearman's correlations conducted between all predictor variables and depressive symptoms are presented in Table 3. Gender, type of community setting (rural vs. urban), perceived social support, and daily lifestyle activities were all not significantly associated with depressive symptoms. Comorbidity (presence of a health problem) was significantly positive associated with depressive symptoms, such that having comorbidities were associated with greater symptoms of depression.

Table 3

Spearman's Correlations of Major Study Variables

	Depressive Symptoms
Gender	0.14
Comorbidity	0.18*
Type of Community Setting	0.12
Perceived Social Support	-0.05
Daily Lifestyle Activity	-0.03

Note. * $p < .05$ ** $p < .01$

Results of Hierarchical Multiple Regression Analysis

A bootstrapped hierarchical multiple regression analysis was conducted to examine Research Question 7. Step 1 of this analysis included gender, type of community setting, age, and marital status, and Step 2 included the rest of the predictor

variables of daily lifestyle activities, perceived social support, and comorbidities. Table 4 provides results of this analysis.

The first model, which included only the demographic covariates of gender, age, marital status, and type of community setting, predicted approximately 9% of the variance in depressive symptoms (R^2 = .09). When examining the individual coefficients, only gender and marital status statistically significantly predicted depressive symptoms, such that being a female was associated with a lower likelihood of experiencing depressive symptoms and being married was associated with a lower likelihood of experiencing depressive symptoms. Age and type of community setting were not significantly associated with the outcome variable.

The second model, which added daily lifestyle activities, perceived social support, and comorbidity to the regression, significantly increased the amount of variability explained in the outcome. Specifically, the second model explained approximately 13% of the variability in depressive symptoms, and the R^2 change test was not statistically significant, R^2 change = .05, F (3, 147) = 2.52, p = .06. The size of the increase in R^2 implies that the combined influence of daily lifestyle activities, perceived social support, and comorbidity have a very small effect on depressive symptoms, thus, making it insignificant.

When examining the individual coefficients, it was found that only perceived social support was statistically associated with depressive symptoms in the second model, such as that those with greater activity levels, and those with greater perceived social support were all less likely to report symptoms of depression. On the other hand, daily

lifestyle activities and comorbidity were not statistically significantly associated with depressive symptoms. In the second model, the control variables of gender, age, marital status, and type of community setting were all not significantly associated with depressive symptoms.

Multicollinearity among predictors was assessed. This was checked by investigating the variance inflation factors (VIF) and the tolerance values for each predictor. These were reported in Table 4. VIF below 10 and tolerance values well above 0.2 indicate safe to conclude that there is no collinearity within the data. The VIF values were between 1.02 and 1.39, and tolerance values were between 0.72 and 0.98, which were in the safe range. Through subsequent testing, the absence of collinearity among predictors was confirmed.

Table 4

Results of Bootstrapped Multiple Regression Examining Depressive Symptoms

		B	95% CI		SE	*P*	Tolerance	VIF
Model 1	Gender	0.84	0.21	1.47	0.32	**0.01**	0.85	1.18
	Age	0.01	-0.04	0.05	0.02	0.75	0.88	1.14
	Marital Status	-0.76	-1.39	-0.13	0.32	**0.02**	0.76	1.31
	Type of Community Setting	0.46	-0.11	1.03	0.29	0.11	0.98	1.02
Model 2	Gender	0.78	0.15	1.40	0.32	**0.02**	0.84	1.19
	Age	0.01	-0.03	0.06	0.02	0.62	0.84	1.20
	Marital Status	-0.55	-1.20	0.09	0.33	0.09	0.72	1.39
	Type of Community Setting	0.43	-0.15	1.01	0.29	0.15	0.92	1.09
	Daily lifestyle activities	0.01	-0.27	0.29	0.14	0.96	0.87	1.15
	Perceived social support	-0.02	-0.03	0.99	0.01	**0.04**	0.91	1.10
	Comorbidities	0.42	-0.14	0.98	0.28	0.14	0.94	1.07

Note. Estimates based on 1000 bootstrap samples.

Summary

In the current study, it was examined whether a number of variables could predict depressive symptoms among a sample of 156 older adults from northern Louisiana. Results of the Spearman's correlation analyses indicated that comorbidities were significantly negatively correlated with depressive symptoms among older adults in this sample. Adults who reported having no comorbidity tended to experience fewer symptoms of depression. It was found that when controlling for demographic covariates and other predicts, perceived social support may predict depressive symptoms. Specifically, the first model, which included only the demographic covariates of gender, age, marital status, and daily lifestyle activities predicted approximately 9% of the variance in depressive symptoms. When examining the individual coefficients, only gender and marital status statistically significantly predicted depressive symptoms, such that being a female and married was associated with a lower likelihood of experiencing depressive symptoms. The second model, which added daily lifestyle activities, perceived social support, and comorbidities to the regression, did not significantly increased the amount of variability explained in the outcome. This indicated that the combined influence of daily lifestyle activities, perceived social support, and comorbidities have a very small effect on depressive symptoms. When examining the individual coefficients, results demonstrated that perceived social support was statistically significantly associated with depressive symptoms in the second model. Those with greater perceived social support were all less likely to report symptoms of depression. In Chapter 5, these results will be discussed in greater detail and compared to

those in the existing body of research. Chapter 5 will also include the interpretation, implication, and recommendations based on the findings.

Chapter 5: Discussion, Conclusions, and Recommendations

Introduction

Depression is the most common mental illness among people over the age of 60 in the United States (National Center for Health Statistics, 2016). It has been estimated that 50% of the 35 million people in the United States over the age of 65 are in need of mental health services, although fewer than 20% receive treatment (Benek-Higgins, McReynolds, Hogan, & Savickas, 2008). There is limited research, however, on whether lack of engagement in physical activities can predict depression in older adults.

The purpose of this quantitative study was to determine whether daily lifestyle activities; perceived social support; and sociodemographic variables of gender, community setting, marital status, and comorbidities predict depressive symptoms among community-dwelling older adults. In the study, theoretical frameworks were incorporated from existing academic literature. Chief among these were three seminal psychological frameworks: Erikson's (1968) theory of psychosocial development, Beck's (2005) cognitive model of depression, and Seligman's (1972) learned helplessness model.

As emphasized by Mura and Carta (2013), although academic researchers have established the importance of these factors in the occurrence of depression, the designs and methodologies of these research endeavors have prevented conclusive findings regarding the actual relationship between these factors and depressive symptoms.

The objectives of this study included understanding the relationship between the independent variables (daily lifestyle activities; perceived social support; and sociodemographic variables such as gender, community setting, marital status, and

comorbidities) and the dependent variable of depressive symptoms. Because the goal of the study was to associate these variables with one another and to measure these associations, a quantitative design was appropriate to establish statistical relationships between the variables (Creswell, 2013). A predictive regression analysis was used because it provided a means to determine whether the independent variables related to the dependent variable, the level of depressive symptoms among the sampled individuals (Creswell, 2013). Specifically, this study was conducted to determine whether daily lifestyle activities; perceived social support; and sociodemographic variables of gender, community setting, marital status, and comorbidities predict depressed symptoms among community-dwelling older adults. Identifying which factors, (if any), are correlated with depressive symptoms in community-dwelling older adults can improve the welfare of these individuals. Friends and families of these older adults may benefit from the results of this study, as their loved ones and themselves will be better equipped to recognize the predictive factors and seek treatment for depression sooner rather than later.

Active lifestyles and high levels of engagement in activities of daily living have a positive effect on depression, with higher levels of activity being associated with lower levels of depression (Teixeira et al., 2013). Similarly, rural areas and high levels of perceived social support have been linked to lower likelihoods of depression (Dai et al., 2012; Hawton et al., 2012). With respect to gender, Rasquinha (2013) noted that women have been more likely to suffer from depressive symptoms as compared to men.

The dependent variable in the study was depressive symptoms—a psychological disorder manifested in deflated moods, the inability to feel pleasure, and sometimes even

by the occurrence of suicidal thoughts and behaviors (NIMH, 2015). Despite this prevalence, however, the elderly remain underdiagnosed with respect to depression (Stefanatou et al., 2010). The proper identification and quantification of factors associated with depressive symptoms could help to better diagnose and identify elderly individuals suffering from the illness.

In order to gather the data required for correlation, community-dwelling elderly aged 60 years or older who lived in Northern Louisiana were recruited from various senior centers were given self-administered questionnaires to complete. These questionnaires required the participants to provide information on the different variables and experiences pertinent to this study. Pearson's coefficient and regression analyses were conducted to identify and measure relationships between variables. These two methods of data analyses allowed the use of a quantitative predictive research method to measure variables with respect to one another and to identify whether statistically significant relationships exist between them or not, and if so, in what way. I examined whether a number of variables could predict depression among a sample of 156 older adults from Northern Louisiana. According to results of both Spearman's correlation analyses and a bootstrapped multiple regression analysis, the two primary predictors of depression among older adults in this sample were activity levels and perceived social support. Those adults who reported greater activity levels and perceived social support also tended to experience fewer symptoms of depression.

Being married also predicted lower symptoms of depression in the correlation and initial regression model. When controlling for demographic covariates and other

predicts, settings may predict depression, such that individuals who live in an urban area are less likely to experience depression. Gender, race, and comorbidity (presence of a health problem) were all not significantly associated with depression. However, social support and activity were both associated with depression, such that greater perceived social support and greater activity levels were associated with fewer symptoms of depression. Only marital status was statistically significant with regard to predicted depression, such that being married was associated with a lower likelihood of experiencing depression. Race, gender, age, and community setting were not significantly associated with the outcome variable.

The second model, which added activity, social support, and comorbidity to the regression, significantly increased the amount of variability explained in the outcome. Specifically, the second model explained approximately 18% of the variability in depression, and the R^2 change test was statistically significant, R^2 change = .11, F (3, 146) = 6.37, $p < .001$. The size of the increase in R^2 means that the combined influence of activity and social support have a small effect on depression.

Lower perceived health was associated with an increase in depression among older adults (Fukunaga et al., 2012). Although older adults in rural and urban communities approach retirement and may have more time for activities, their capability to engage in physical activities is decreased, as compared to younger adults (Fukunaga et al., 2012). High levels of depression are inversely associated with levels of physical activity in older adults (Blake, 2012).

Interpretation of the Findings

According to Seligman (1972), Kilic et al. (2014), Onat et al. (2014), and Yaka et al. (2014), older individuals are more susceptible to developing depression. The factors that contribute to their depression need to be understood. Depressive symptoms can contribute substantial personal, social, and economic burdens on those afflicted older adults and their families (Onat et al., 2014). Nevertheless, a scarcity of literature exists on ADL and depressed moods among older adults dwelling in rural and urban communities. The researchers failed to include the demographic factors, support group and sociodemographic of older adults, in their analyses of the levels of depressive symptoms.

Research methods used were appropriate to identify depressive symptoms in community-dwelling elders through establishing statistical relationships between variables considered in this study. This quantitative design enabled comparison of the variables to determine whether there are significant statistical relationships between them (Creswell, 2013).

Physical activity, according to Teixeira et al. (2013), might have significant antidepressant effects (Dai et al., 2012; Smith et al., 2014). Another factor that has been connected with lower incidence of depression among the elderly is the type of community that individuals live in, with rural areas providing more opportunities to lower the likelihood of depression (Dai et al., 2012). A third factor is perceived social support; Hawton et al. (2011) implied that like the other factors, it is inversely related to depression as well. Finally, Rasquinha (2013) established that gender is significantly

correlated with depression, with women more likely to experience this illness compared to men. The gap in the literature is that the variables have not been studied together. The results of this study added to the body of knowledge already available regarding causes and tendencies of depression in the elderly. I stopped reviewing her. Please go through the rest of your chapter and look for the patterns I pointed out to you. I will now look at your references.

Personality traits in the elderly have been linked with a wide range of factors, including neuropsychological functioning, participation in psychotherapy, suicidal ideation, attending to individual healthcare needs, and mortality that have the potential to influence treatment regimens and clinical outcomes (Thomas, 2013). Once again, few studies have been conducted on the effect of personality type on the incidence of depression among the elderly, and additional studies of this nature are needed to formulate effective treatment interventions (Koorevaar et al., 2013).

Conversely, Beck (2005), highlighted that the development of depression among older adults can be attributed to many factors. These factors can be categorized according to family, physical, and mental health, socio-demographic status, and social support (Dai et al., 2012). According to Mura and Carta (2013), the correlations of certain factors to depression are difficult to establish because of the lack of quality in existing studies. The current study was therefore designed to add to the body of literature by focusing on the predictive relationships of daily lifestyle activities, perceived social support, and socio-demographic variables of gender, community setting, marital status, and comorbidities with depressive symptoms in community-dwelling older adults.

In this study, important theoretical frameworks were incorporated from existing academic literature. Chief among these were three seminal psychological frameworks. The first was Erikson's (1968) theory of psychosocial development. The second was Beck's (2005) cognitive model of depression, while the third was Seligman's (1972) learned helplessness model.

Erikson's theory of psychological development. Erikson's (1968) theory of psychosocial development served as one of the frameworks for conceptualization of the study in identifying depressive symptoms among community-dwelling elders. Erikson's (1968) theory for the last stage of development, integrity versus despair, involves the latter portion of one's life. Generativity is, "the interest in establishing and guiding the next generation" (Erikson, 1968, p. 103). Therefore, seniors perceive self-worth upon being needed for guidance by their community and family. In testing research questions 1-6, Spearman's correlation coefficients confirmed that social support and activity were both associated with depression, such that greater perceived social support and greater activity levels were associated with fewer symptoms of depression. Based on Erikson's theory, the elderly face peculiar challenges that need understanding. According to implications in Seligman's (1972) theory and to Kilic et al. (2014), Onat et al. (2014), and Yaka et al. (2014), older individuals are more susceptible to developing depression. Hence, the factors that contribute to their depression need to be understood.

As suggested by Beck (2005), however, the development of depression among older adults can be attributed to many factors. These factors can be categorized according to family, physical, and mental health, sociodemographic status, and social

support (Dai et al., 2012). However, according to Mura and Carta (2013), the correlations of certain factors to depression are difficult to establish because of the lack of quality in existing studies.

Beck's cognitive model of depression. Beck's cognitive model of depression has two central components: cognitive triad and the negative information processing bias (Beck, 2005). Beck (1991) proposed that people with depression see their world in a negative light. They perceive their world as filled with obstacles and ongoing losses. This negative outlook extends to their perception of themselves. They perceive themselves as failures, inadequate and unlikable. They believe their own, innate flaws caused negative experiences (Iddon & Grant, 2013). People with depression lack self-compassion, the positive perceptions of which offer meaning and usefulness to life (Pauley & McPherson, 2010).

In this study, it was useful to note that Beck's (1991) model of depression states that affective and behavioral symptoms of depression are affected by depressive thoughts. Iddon and Grant (2013) found that a person with depression who has had negative experiences or failures in life could withdraw and become disinterested as a means of protecting himself or herself from further negative experience and failure. The second central component of Beck's (1991) model is that people with depression have a negative information bias. Grafton and McLeod (2014) defined negative information bias as a spontaneous bias wherein people with depression attend more readily to negative information than they do to positive or neutral information.

Although the research questions conducted for this study do not directly emphasize Beck's model of depression, the model serves as an illuminating backdrop to this study in that it describes the later stages of depression. An elderly person who is depressed may prolong his or her own depressed state by detaching from his or her communities or families. This tendency could be considered a signal of depression in the elderly, but older adults' isolation from social interaction hinders the recognition of depression. In addition, the perception of the natural physical effects of old age makes detection of depression more difficult.

In his theory, Beck (2005) strongly implied that depression has various sources and contributing factors. The theory itself incorporates affective, cognitive, behavioral, and physical concerns as being possible sources of depression. Hence, this study was based upon these implications made by Beck, with research questions focused on various aspects of the experiences of the elderly that may lead to depression. The results of this study may help provide further validity to Beck's theory, since various sources of depression implied in this theory and this study are found to actually contribute to the experiences of the elderly suffering from depression.

Seligman's learned helplessness model. Seligman et al. (1979) developed the learned helplessness model by proposing the attributional style model. This model is different from Beck's (1991) model because Beck's model is focused on human beings with autonomous characteristics. In the learned helplessness model, people are believed to attribute the causes of occurrences (both good and bad) in their lives to three different continuums – global versus specific, stable versus unstable, and internal versus external

attributes (Abramson et al., 1978). People who use a negative explanatory style attribute their negative experiences to global, stable, and internal characteristics.

Seligman's learned helplessness theory helped guide this study in identifying a population suffering from depression. According to Seligman's theory, depression may be caused by the belief that aversive circumstances and experiences cannot be controlled. The elderly, experiencing declining physical and cognitive functioning, may often a lack of control or self-efficacy over their surroundings and the experiences they undergo, thus making them susceptible to decreases in moods and engagement, which ultimately lead to depression (Hoy et al., 2010). These interpretations do not exceed the scope or data of this study. Some interpretations can be directly attributed to literature reviewed in chapter 2 of this study. The remaining interpretations can be directly correlated with data received from research questions for this study.

Limitations

The intent of conducting this study was to determine the relationship between daily lifestyle activities and the level of depressive symptoms among community-dwelling older adults living in northern Louisiana. The focus of the study was on elderly individuals, specifically, community-dwelling older adults, because according to Erikson's theory, this group was subject to very specific and significant challenges and problems that deserve attention and understanding. The sample of elderly individuals, specifically, community-dwelling older adults are an understudied population (Onat et al., 2014).

To contain the quantity of data to a manageable volume, delimitation was introduced wherein only older adults ages 60 years of age and older residing in northern Louisiana were included. However, this delimitation posed a threat to the generalizability of the results. The geographic location of the targeted population was also considered a limitation of the study. The findings of the study were only generalizable for community-dwelling older adults ages 60 years of age and older residing in northern Louisiana. In a quantitative study such as this, threats to generalizability can be mitigated against with the proper sample size. The sample obtained for this study was not representative to the entire population of community-dwelling adults, but only to the targeted population of community-dwelling older adults ages 60 years of age and older residing in northern Louisiana.

Data were limited to the study population. For selection bias, because the study population was limited to a specific geographic location, different conclusions might have been drawn if populations in a different geographic location were studied. The findings of this study may not be generalizable to the larger target population. Using quantitative method of predictive design using a regression analysis allowed the determination of the predictive ability of the different independent variables to the dependent variable of the study. Furthermore, using a large sample size improved the generalizability of the findings of the study within the specific targeted population (Creswell, 2013). However, the use of random sampling would have improved the external validity of the study.

Since the participants' self-reports were sought in order to gather data, and due to the social desirability bias, a limitation of bias may have been encountered in the form of untruthfulness on the part of the participants (Creswell, 2013). It was thus ensured that all participants were aware of the rights to confidentiality and anonymity so that all participants enjoy in order that they may not be tempted to misrepresent facts. Despite such measures, however, self-report data are susceptible to errors in the memory of participants, known as recall bias (Creswell, 2013). To mitigate this, a medium sample size was employed that would evenly distribute and take into account possible errors and threats to the validity of the data and analyses.

In terms of the validity and reliability of data based on scales of measurements used to collect data on variables of interest, the test of reliabilities using Cronbach's alpha statistics showed that only the score for the MPSS to measure perceived social support (Cronbach's alpha = 0.95) has acceptable internal consistency reliability. However, the scores for GDS-15 (Cronbach's alpha = 0.22) and SBAS (Cronbach's alpha = 0.08) to measure depress and daily lifestyle activities, respectively, did not have acceptable internal consistency reliabilities. The unacceptable reliabilities in the scores of depression and daily lifestyle activities were considered as limitation of data for this study. However, it should be noted that the validity of each of the survey instruments of MPSS (Cronbach's alpha = 0.93), SBAS (Cronbach's alpha = 0.75), and GDS-15 (Cronbach's alpha = 0.72) were proved in their respective original studies have proven acceptable validity and reliability in the original studies. For validity, the MSPSS had a negative correlation with the state trait anxiety inventory (r = -0.20) and the Thai depression

inventory (TDI; r = -0.19), but was positively correlated with the Rosenberg self-esteem scale (r = 0.33). The MSPSS showed acceptable construct validity with scores correlating with measures of depression and anxiety in the expected direction (Stewart, Umar, Tomenson, & Creed, 2014). Construct validity was examined by regression analyses to evaluate significant trends ($p \leq .05$) across the SBAS activity categories for the selected psychological health factors measured at baseline and year 2, adjusted for gender, ethnicity and education level. This result provides evidence of acceptable construct validity of the SBAS in older adults (Taylor-Piliae, Fair, Haskell, Varady, Iribarren, Hlatky, Go, Fortamann, 2010). For the GDS-15, Greenberg (2012) proved that this has an acceptable criterion validity since the GDS score was significantly correlated with a number of major depressive disorder (MDD; r = 0.35) and dysthymia criteria (r = 0.4)

In addition, possible confounders effects of family related issues such as conflicts might have had an impact on the depressive symptoms of the elderly population. This was considered a limitation of the study since this was not considered in the analysis. In terms of social desirability bias, some of the participants may have over-reported the good practices that they did or under-reported the bad practices. Finally, narrowing the focus to a target population in northern Louisiana contained the volume of data and facilitates analysis.

Recommendations

It was found in this current study that adults who reported greater activity levels and perceived social support also tended to experience fewer symptoms of depression. It is recommended that physical activities be included in the treatment programs for

depression. Therapists should also incorporate more social support in a program since it known that doing this would result to lower depression levels of community-dwelling adults aged 60 years of age and older. A benefit to conducting a study of this kind is its contribution to future studies regarding depression in older adults. The strengths and limitations of this study, as well as the literature chosen for review, provide insight into better research models for future studies.

Recommendations for future research could include a larger sample size, a nation-wide sample area, and a random sampling technique to maximize generalizability. To minimize older adults' bias answers to the questionnaire, a personal interview should be conducted. In addition, a consenting adult family member should be present during the interview to provide fewer margins for inaccuracy. Lastly, a qualitative study could be performed in order to gather the perceptions and lived experiences of this group.

Beard and Petitot (2011) found that older adults tend to justify their condition as a normal phenomenon. Thus, older adults' isolation from social interaction has become one of the factors that hinder the recognition of depression. In addition, the perception of the natural physical effects of old age makes detection of depression more difficult.

Implications

Implications for a study of this nature include positive social change, as well as helpful insight for the older adults and their family members. Based on Erikson's theory, the elderly have specific needs and concerns that need attention; however, as pointed out by Miese (2011), oftentimes researchers and practitioners lack a thorough understanding of these needs and attribute problems merely to the aging process. Those with depressive

symptoms might find the study significant for the proactive steps available to older adults to combat or prevent depressive symptoms. Communities might use these findings to provide and promote access to adequate physical activity centers and treatment services that are essential to older adults' well-being. On a wider scale, the study has social implications. This study is significant to the general public in that it may serve as a framework for future studies on the impact of various factors on depressive symptoms in older adults.

In terms of empirical implications, the results of this study may help by increasing the representation of the elderly in academic literature, adding to the body of knowledge by understanding their specific needs. Specifically, insights gained from this study may heighten the awareness of health practitioners regarding the influence of daily physical activities in reducing depressive symptoms among older adults in rural and urban communities. Identifying the factors that contribute to depressive symptoms can be used as insights in treating this illness experienced by the depressive symptoms. Communities can use the findings to provide and promote access to adequate physical activity centers and treatment services that are essential to older adults' well-being.

The results obtained in the study can contribute to providing the elderly population with depressive symptoms a better way of life by gaining insights on ways to lessen the depressive symptoms experienced by the sample of elderly population in the study. Data from this study can provide information into the association between lifestyle activities, gender, location, family relations, and depressive symptoms. This can be accomplished by considering these significant factors that affected depressive symptoms

in treating the depressive symptoms of the elderly patients. Perhaps with the findings and implications of this study, more people will realize the importance of understanding the challenges faced by the elderly. In addition, a positive social change implication from this study includes adding another professional perspective to the current body of knowledge that exists on causes of depressive symptoms among the elderly population.

Additional social change implications include providing information that may improve the treatment plan on depressive symptoms of the elderly population, which involves the recommendations about the required daily lifestyle activities and perceived social support of the elderly population, and also to consider the vulnerability in terms of the depressive symptoms of the elderly population by the different categories of socio-demographics or marital status. Senior community leaders and other professionals such as counselors could target individuals who are unmarried or have a low activity level, for example. A positive social change implication in the improvement of treatment plan could result in the elderly population with depressive symptoms having better management of this condition. By providing an opportunity to further understand the cause of depressive symptoms of the elderly population, there may be a reduction in the number of elderly population with depressive symptoms. Having the opportunity to improve the overall treatment plans of depressive symptoms will ultimately result to improving treatment outcomes for the elderly population. This would lead to most obvious improvements at the individual, family, neighborhood, and community levels, but will hopefully also extend to the greater elderly population in the country and globally.

In terms of methodological implications, the results of this study expanded the field of quantitative studies using descriptive study designs to determine whether lifestyle activities, gender, social support, and dwelling place are associated with depressive symptoms among community-dwelling older adults. The study was able to contribute by providing a feasible quantitative analysis in order to determine the possible determinants of depressive symptoms among community-dwelling older adults. From the output of this study, it is methodological possible to address issues of depressive symptoms among community-dwelling older adults through statistical analysis. The results of quantitative analysis are beneficial to provide awareness to health practitioners regarding the influence of daily physical activities in reducing depressive symptoms among older adults in rural and urban communities by quantifying the relationships.

In this study, a predictive relationship was identified between variables of setting, daily lifestyle activities, and perceived social support with depressive symptoms. This finding is a theoretical contribution to the academic literatures about depressive symptoms experienced by community-dwelling elderly individuals. The findings can be used to develop theory in identifying and developing worthwhile activities for older adults in their respective areas. The specific theory that can be developed is about activities that will lead older adults to a more secure and joyful quality of life. It will be crucial for future studies to include measures for minimizing bias answers, so that the elderly populations are well represented in present literature. Furthermore, this will enhance the ability to create effective practice methods for decreasing the depressed population of older adults.

Conclusion

While researchers have presented comprehensive findings on how lifestyle activities affect the levels of depression in older populations, it was not enough to combat the growing population of at-risk older adults. Sometimes, health care providers know little about appropriate interventions to reduce depression in this population and elderly family members are suffering in silence because of it (Onat et al., 2014). Depression is a major public health concern, with more than 18 million Americans diagnosed with the condition, which affects an individual's thoughts, moods, feelings, behavior, and even physical health (Williamson & Kemper, 2010). Bock et al. (2014) noted that among the elderly already suffering from chronic disorders, depression occurred at a rate of 10.7%. The American Association of Geriatric Psychiatry (2011) estimated that 1% to 12% of community-dwelling older adults experience diagnosable minor or major depression.

Depression is the most common mental illness among people over the age of 60 in the U.S. (National Center for Health Statistics, 2016). However; because of the minimal amount of literature and attention given to depressed older adults, fewer than 20% receive treatment (Benek-Higgins et al., 2008). Given that older people may have more time to engage in new activities but choose to remain in the home, physical and mental inactivity is prevalent (Benek-Higgins et al., 2008).

In this study, the limited research on whether lack of engagement in physical activities, as well as social support and marital status can predict depression in older adults, was addressed. It helps to close the gap in the knowledge base so that individuals,

families, communities, and organizations can appropriately recognize, diagnose, and combat depression in older adults.

As a progressive global community, it is important to improve the quality of life for everyone. In order to do this, researchers must add to the state of knowledge in the current field of interest. In this study, key factors that can minimize depression in older adults were examined, such as social isolation, uncontrolled pain, insomnia, living conditions, community engagement, and sense of one's own purpose. Innovative strategies might improve positive aging and resilience among older adults, enabling them to engage with family and community gatekeepers (Lapierre et al., 2011). While it is not possible to have control over some factors attributed to depression in older adults, it is possible for counselors and professionals to mitigate the risk factors in order to facilitate a possible avenue to a solution for a happier, more peaceful elderly community.

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Appendix A: Invitation to the Study

Volunteers Needed for Research Study

I am seeking volunteers to participate in a research study titled:
Predicting Depressive Symptoms through Levels of Lifestyle Activity in Community-Dwelling Older Adults

The purpose of this study is to determine whether lifestyle activities can predict depressive symptoms among community-dwelling older adults. The long-term goal is the discovery of ideas that might be used to improve the conditions of community-dwelling older adults to minimize their risk of developing depressive symptoms in their later years. A researcher named Michael D. Gatson, who is a doctoral student at Walden University, is conducting this study.

Volunteers must be:

- Age 60 or older
- Not live in an institution, such as rehabilitation center, or nursing home.
- English-speaking
- Not be diagnosed with dementia or mental impairments.

If you agree to be in this study, you will be asked to meet with the researcher for a face-to-face interview, or participate in a telephone interview. The interview will take approximately 30-45 minutes, and privacy will be afforded to you by the interview.

If you are interested in participating, please contact Michael D. Gatson at 318-663-1068 Interviews will be conducted during the month of May 2015.

No compensation is provided for participation.

Appendix B: Referral List of Mental Health Providers in North Louisiana

- Ruston Mental Health Center (Serving the Union and Lincoln Parish Area)

  901 White St, Ruston, LA 71270

  (318) 251-4150

- Janey Macey and Associates

  2285 Benton Rd. Bossier City, LA 71111

  (318) 745-4150

- Davis, Sandi, MA, LPC, LMFT

  4859 Shed Rd.

  Bossier City, LA 71111

  (318) 317-1010

- Associated Counseling Services

  3018 Old Minden Rd.

  Bossier City, LA 71112

  (318) 746-5600

- Bossier Counseling Center, LLC

  2285 Benton Rd.

  Bossier City, LA 71111

  (318) 549-1082

- Brentwood Hospital

  1006 Highland Ave.

  Shreveport, LA 71101

(877) 678-7500

- Cornerstone Counseling

  1622 Highland Ave.

  Shreveport, LA 71101

- Line Avenue Counseling

  3018 Old Minden Rd. Ste. 1106

  Bossier City, LA 71112

Appendix C: The Mini Mental State Examination

MAXIMAL SCORE	SCORE	
		ORIENTATION
5	) (	What is the (year) (season) (date) (day) (month)?
5	) (	(Where are we: (state) (country) (town) (hospital) (floor)?
		REGISTRATION
3	) (	Name 3 objects: take 1 second to say each. Then ask patient to repeat them. Give 1 point for each correct answer.
		Attention and Calculation
5	) (	Serials 7s from 100. 1 point for each correct answer. Stop after 5 answers. Alternatively, spell “world” backward.
		Recall
3	) (	Ask for 3 objects named above.

1 point for each correct answer.

Language

9) (

1. Ask patient to name a pencil and watch. (2 points)
2. Repeat the following: “No ifs, ands, or buts. “(2 points)
3. Follow a 3-stage command: “Take a paper in your right hand, fold it in half, and put it on the table.” (3 points)
4. Read and obey the following:

- Close your eyes (1 point)
- Write a sentence (1 point)
- Copy a drawing of intersecting pentagons (1 point)

Appendix D: Demographic Sheet

Subject # _____

What is your age? _____ Are you ___ Male or ___ Female?

In what city do you live? _____

What is your marital status? ___Married ___ Single ___ Widowed___ Divorced___

Living together but not married___

Do you have more than two mental illness ___ Yes ____ No

If yes, how many mental illnesses do you have? _____

What type(s) of illnesses do you have?

_____

_____-

_____

What is your yearly income? _____

Do you belong to an organized religious institution? Yes___ No__ If yes, what religion and domination? _____

What is your highest level of education?

Did not complete high school _____

Graduated high school or GED _____

Some college _____

Bachelor's degree _____

Graduate or professional degree (e.g., M.A., Ph.D., J.D., M.D.) _____

Do you have children? _____ if yes, ages _____

Do you have children (your own or others') currently living with you? _____

Their age's _____

Appendix E: Geriatric Depression Rating Scale (GDS-15)

Geriatric Depression Rating Scale (GDS-15)

Geriatric Depression Scale: Short Form

Choose the best answer for how you have felt over the past week:

1. Are you basically satisfied with your life?

   Yes No

2. Have you dropped many of your activities and interests?

   Yes No

3. Do you feel that your life is empty?

   Yes No

4. Do you often get bored?

   Yes No

5. Are you in good spirits most of the time?

   Yes No

6. Are you afraid that something bad is going to happen to you?

   Yes No

7. Do you feel happy most of the time?

   Yes No

8. Do you often feel helpless?

   Yes No

9. Do you prefer to stay at home, rather than going out and doing new things?

   Yes No

10. Do you feel you have more problems with memory than most?

Yes No

11. Do you think it is wonderful to be alive now?

Yes No

12. Do you feel pretty worthless the way you are now?

Yes No

13. Do you feel full of energy?

Yes No

14. Do you feel that your situation is hopeless?

Yes No

15. Do you think that most people are better off than you are?

Yes No

Answers in **bold** indicate depression. Score 1 point for each bolded answer.

A score greater than 5 points is suggestive of depression.

A score greater than or equal to 10 points is almost always indicative of depression.

A score of greater than 5 points should warrant a follow-up comprehensive assessment.

Appendix F: Stanford Brief Activity Survey (SBAS)

Section 1

Please select one statement that best describes the kinds of physical activity you usually performed this year around the home regularly.

A. You have no job or regular work.

B. I spent most of the day sitting or standing. When I was at work I did such things as writing, typing, talking on the telephone, assembling small parts or operating a machine that takes very little exertion or strength. If I drove a car or truck while at work, I did not lift or carry anything for more than a few minutes each day.

Section 2

Please select one statement that best described the way you spent your leisure-time during most of the last year.

C. Most of my leisure time was spent without very much physical activity. I mostly did things like watching television, reading or playing cards. If I did anything else, it was likely to be light chores around the house or yard, or some easy-going game like bowling or catch. Only occasionally, no more than once or twice a month, did I do anything more vigorous, like jogging, playing tennis or active gardening.

D. Weekdays, when I got home from work, I did few active things. But most weekend I was able to get outdoors for some light exercise: going for

walks, playing a round of golf (without motorized carts), or doing some active chores around the house.

E. Three times per week, on the average, I engaged in some moderate activity such as brisk walking or slow jogging, swimming, or riding a bike for 15-20 minutes or more. Or I spent 45 minutes to an hour or more doing moderately difficult chores such as raking or washing windows, mowing the lawn or vacuuming, or playing games such a doubles tennis or basketball.

F. During my leisure time over the past year, I engaged in a regular program of physical fitness involving some kind of heavy physical activity at least three times per week. Examples of heavy physical activity are jogging, running, or riding fast on a bicycle for 30 minutes or more; heavy gardening or other chores for an hour or more; active games or sports such as handball or tennis for an hour or more; or a regular program involving calisthenics and jogging or the equivalent for 30 minutes or more.

G. Over the past year, I engaged in a regular program of physical fitness along the lines described in the last paragraph (I), but I did it almost daily—five or more times per week.

Modified SBAS Measuring System

	C	D	E	F	G
A	1	2	3	4	5
B	2	2	3	4	5

Appendix G: Multidimensional Scale of Perceived Social Support

Instructions: We are interested in how you feel about the following statements. Read each statement carefully. Indicate how you feel about each statement.

Circle the "1" if you very strongly disagree

Circle the "2" if you strongly disagree

Circle the "3" if you mildly disagree

Circle the "4" if you are neutral

Circle the "5" if you mildly agree

Circle the "6" if you strongly agree

Circle the "7" if you very strongly agree

1. There is a special person who is around when I am in need.

   1 2 3 4 5 6 7

2. There is a special person with whom I can share my joys and sorrows.

   1 2 3 4 5 6 7

3. My family really tries to help me.

   1 2 3 4 5 6 7

4. I get the emotional help and support I need from my family.

   1 2 3 4 5 6 7

5. I have a special person who is a real source of comfort to me.

   1 2 3 4 5 6 7

6. My friends really try to help me.

   1 2 3 4 5 6 7

7. I can count on my friends when things go wrong.

1 2 3 4 5 6 7

8. I can talk about my problems with my family.

1 2 3 4 5 6 7

9. I have friends with whom I can s my joys and sorrows.

1 2 3 4 5 6 7

10. There is a special person in my life who cares about my feelings.

1 2 3 4 5 6 7

11. My family is willing to help me make decisions.

1 2 3 4 5 6 7

12. I can talk about my problems with my friends.

1 2 3 4 5 6 7