# ASSESSING THE MEDIATING ROLE OF SPIRITUAL FACTORS ON THE RELATIONSHIP BETWEEN STRESS AND DEPRESSION AMONG OLDER ADULTS IN ASSISTED LIVING FACILITIES

A Thesis by

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Submitted to the Department of Social Work
and the faculty of the Graduate School of
Wichita State University
In partial fulfillment of
the requirements for the degree of
Master of Social Work

May 2012

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The following faculty members have examined the final copy of this thesis for form and content, and recommend that it be accepted in partial fulfillment of the requirement for the degree of Master of Social Work.

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## ACKNOWLEDGEMENTS

This thesis would not have been possible without my mentors. Thus, I would like to express my sincere gratitude to Drs. Brien Bolin and Kyoung Lee for their guidance, reviews, comments, and as well as allowing me to use the data which reflects their hard work in the collection. I would like to thank my other thesis committee, Drs. Linea GlenMaye and Twyla Hill, for their encouragement and insightful comments. Without my family's support, I could not accomplish this degree. I am grateful to my parents for their prayers and encouragements and thankful to my children Hyelin, Joshua, and Hannah for their love and understanding. Mostly, my dear husband has been very supportive and patience in helping me and continuously motivates me to make educational endeavors. Last and greatest, my God, He has given me the strength and wisdom throughout my life.

## ABSTRACT

This study examined the relationship between stress and depression, and the mediating role of spiritual factors among 316 older adults, 65 years or older in assisted living facilities (ALFs). Hierarchical regression analysis revealed that a high level of stress was associated with a high level of depression among older residents. For male residents, a Sobel test indicated that the direct coefficient of stress on depression decreased when spiritual coping and forgiveness were mediated. However, there was no significant mediating role of spiritual factors for stress and depression among female residents. This study suggests the importance of providing spiritual support for older men who are dealing with significant stress as a way to minimize depressive symptoms.

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# CHAPTER 1

# INTRODUCTION

The United States' population has been graying at an increasing rate over the last several decades. It is estimated that approximately 15 percent of total population will be older adults by 2015 and almost 20 percent of the population will be elderly by 2030 (Spitzer, Neuman, & Holman, 2004). The increase of older adults will continue until around 2050. The population of the US in 2050 is projected to be almost 440 million and people aged 65 and over will number almost 90 million by 2050 (United States Census Bureau, 2010). The option of assisted living is appealing to older adults who want a home-like atmosphere, available services for functional deficits, and the objects of promoting aging-in-place (Cummings & Cockerham, 2004). Assisted Living Facilities (ALFs) have increased 15 to 20 percent annually for the last 20 years (Cummings, 2002; Hawes, Phillips, & Rose, 1999). Currently there are approximately over 30,000 ALFs in the United States with around 40 billion dollar revenues per year (Assisted Living Facilities, 2010).

There are some prevalence factors of older adult residents in ALFs. According to Spitzer et al. (2004), almost 75 percent of all residents who were residing in ALFs were female, and 73 percent of them were widowed. Also, more than half of residents relocated from their previous residence about 10 miles or less (Spitzer et al., 2004). The most prevalent diseases in older residents residing in assisted living were the following: 57.8 percent for hypertension and cardiovascular disorder, 32.5 percent for arthritis, and 17.7 percent for depression (National Investment Center, 1998). Especially, there were about three-fold greater depression prevalence in residential care elders than community dwelling older adults (Cuijpers & Van Lammeren, 1999). Older adults in ALFs experienced stressful life events such as losing a loved one, losing

social status, relocation, health problems, and social isolation, which may influence the depressive symptoms of older adults (Lovestone & Howard, 1997). Thus, depression and stress are chronic problems relating to psychosocial well-being among assisted living residents.

Previous studies have focused on depression and its causes among older adults in assisted living facilities (Cummings, 2002; Cummings & Cockerham, 2004; Gruber-Baldini, Zimmerman, Boustani, Watson, Williams, & Reed, 2005), while some research revealed the impact of stress on depression among older adults (Lustyk, Beam, Miller, & Olson, 2006; Shibusawa & Mui, 2001). Additionally, some research indicated the role of spiritual factors and religion on depression among older adults (Idler, 1995; Koenig, George, & Siegler, 1988; Strawbridge, Shema, Cohen, Roberts, & Kaplan, 1998). However, little is known about association between stress and depression as well as the mediating role of spiritual factors (spiritual experience, spiritual coping, and forgiveness) on the relationship between stress and depression among older adult men and women in ALFs. This study will address three research questions: 1) How is stress in older adults living in ALFs associated with depression?; 2) How do spiritual factors of older adults living in ALFs mediate the relationship between stress and depression?; and 3) What are different mediating roles of spiritual factors among older adult men and women on the relationship between stress and depression? This study is important for social workers and health care providers to understand the problems of stress and depression, the important role of spirituality, and spiritual support intervention to minimize the stress and depression among older adults in assisted living.

# CHAPTER 2

# LITERATURE REVIEW

## Depression of Older Adults in Assisted Living

Depression is a relatively common mental health problem among assisted living residents. Ba-Tor and Lomerantz (1997) indicated that the signs and symptoms of older adult residents with depression may include loss of interest in normally pleasurable activities. Additionally, changes in weight, sleeping disorder, persistent, vague or unexplained somatic complaints, memory complaints, irritability or demanding behavior could occur. Other symptoms are lack of attention to personal care, difficulty with concentration, social withdrawal, and change in appetite, confusion, delusions of hallucinations (Ba-Tor & Lomerantz, 1997). According to Alexopoulos (2005), symptoms or syndromes of late-life depression are often related to cognitive decline and dementia. Suicidal risk is almost two times more likely in late-life than for other persons' suicidal risk. Suicide rates in older adults are increased nearly exclusively in white men. Of those who attempt suicide, older people are most likely to die. Alexopoulos (2005) also indicates that depression issues were present 80% of the time for persons over 74 who commit suicide. Major depression and substance abuse are risk factors for older people's suicide as well. Therefore, depression is an important concern for older adults residing in ALFs.

Older adults and their health care providers often believe that depression is an expected process of aging (Chapman & Perry, 2008). Furthermore, this belief misleads them to understand that depressed older adults might have miscellaneous complaints and the diagnosis process and treatment of depressive disorders are hard to get. Thus, perception of depressive

disorders in late-life remains critical to public health. Blazer (2003) stated that depression in late life has been found to be associated with emotional distress and consequently has a n egative impact on older adults' quality of life. Moreover, severely depressed older people display impairment in verbal fluency, recognition memory, planning, psychomotor speed, and set shifting. A ccording to Lockwood, Alexopoulos, and Van Gorp (2002), older adults with depression executive dysfunction syndrome clinically presented psychomotor retardation and decreased interest in activities. T he dysfunction involves loss of verbal fluency, poor task presentation, impaired visual naming, and perseveration. Late-life depression is identified as an important public health issue and is often recognized more in long-term care setting than in regular communities (Blazer, 2003). Recent studies reported that 12.4 to 35 percent of persons in long term care facilities experience severe depressive symptoms, and prevalence rates of late-life depression in ALFs are 13 to 25 percent (Cummings & Cockerham, 2004; Jang, Bergman, Schonfeld, & Molinari, 2007). Likewise, late-life depression is severely associated with older residents' bio-psycho-social well-being in ALFs.

In addition, previous studies indicated different prevalence of depression between older adult men and women (Bountziouka, Polychronopoulos, Zeimbekis, Papavenetiou, Ladoukaki, Papairakleous, et al., 2009; Lee, Willetts, & Seccombe, 1998). Older adult women have experienced more depression or depressive symptoms than older adult men (Ron, 2004). For assisted living residents, there is a lack of information for different prevalence of depression between older adult women and men. Based on the literature reviewed, the current study expects to find different occurrence of depression between older adult men and women in assisted living.

Stress and Depression of Older Adults

Research has indicated that stressful life events have negative impact on the psychological and physical health of older people (Fitzpatrick & Tran, 2002; Lee, 2011). Stressful life events can be divided into non-family and family stressors. Non-family stressors included in the territories of physical health (chronic illness and disability), finance, and neighborhood (crime, traffic, excessive noise, trash, and public transportation). Family stressors included marital problems, abuse, care-giving, and experiencing conflict with children. Strawbridge et al. (1998) stated that these stressors have been found to be significantly related to depression. Older adults residing in ALFs experience non-family and family stressful life situations such as health problems, relocation, financial problems, lack of transportation, lack of social support, and bereavement (Freeman, Gange, Munoz, & West, 2006; Lovestone & Howard, 1997). Poor physical health and disability strongly associates with an adjustment disorder with depressed mood (Alexopoulos, 2005). Cuijpers and Van Lammeren (1999) revealed the positive relationship between chronic illness and depression among residential care older adults. Therefore, literature supports that functional impairment is a strong factor of depression in the ALF population.

Relocation of older adults can result in stress, grieving, and social isolation. Relocation may decrease physical and psychological functioning of older residents (Staveley, 1997). Furthermore, older adults' relocation may cause risk factor of depression and suicidal ideation (Chapin & Dobbs-Kepper, 2001; Haight, Michel, & Hendrix, 1998). Among the top ten life stressors for all ages, relocation transition and chronic health crises are recognized. These factors has been found to be significantly stressful for older adults residing in ALFs because these are associated with loss and ultimately end of life (Rowles, 2000; Mead, Eckert,

Zimmerman, & Schumacher, 2005). Thus, older adults' relocation is an important risk factor for their psychosocial and physical well-being.

Financial problems have negative impacts on older adults' health status (Alexopoulos, 2005; Freeman et al., 2006). Alexopoulos (2005) argued that low income status is significantly related to the depressive symptoms of older adults. Cuijpers and Van Lammeren (1999) argued that a lack of social support is a strong indicator of depression among older adult people. Alexopoulos (2005) found that social isolation is deeply related to the depression of older adults. Also, bereavement was significantly associated with the health problems of Caucasian American older adults (Fitzpatrick & Tran, 2002). Bereaved older adults experience severe health problems mentally and physically for a one-year period after their spouse died (Tudiver, Hilditch, Permaul, & McKendree, 1992). Thus, lack of transportation, financial problems, lack of social supports, and bereavement are important factors of stress, which may influence the depression of elderly living in ALFs.

## Spirituality and Depression of Older Adults

Among older adults, the importance of faith and trust in God is a core coping mechanism (Koenig, George, & Siegler, 1988). The participation of religious activities and high spirituality may assist older adults to promote their physical and mental functioning (Ball et al., 2000). Religious participation is usually measured in terminology of affiliation or frequent participation at religious services. Frequent religious participation has been found to be related with lower blood pressure, better perception of health, and lower sequential disability (Idler & Kasl, 1992; Strawbridge et al., 1998). Moreover, religious involvement has appeared to be associated with lower overall death rates for emphysema, arteriosclerotic heart disease, liver cirrhosis, and

suicide (Strawbridge, Cohen, Shema, & Kaplan, 1997). In addition, Powell, Shahabi, and Thoresen (2003) found that spirituality and faith have significantly positive associations with cardiovascular health and cancer patients. As responding such positive research results, physicians reinforce their patients to attend religious services (Oxman, Freeman, & Manheimer, 1995). Thus, religious activity participation has been found to be strongly associated to older adults' physical and mental health in previous literature.

Religious participation and spirituality have a positive impact on the subjective well-being or psychological health (Idler, Kasl, & Hays, 2001; Jang, Kim, & Chiriboga, 2006; Lee, 2011; Lustyk et al., 2006). In late adulthood, personal religious involvement may increase self-esteem and worthiness, but decrease hopelessness and helplessness. Personal religious involvement has a major role in decreasing depression of older adults (Lavretsky, 2010; Wink & Scott, 2005). Ahrens, Abeling, Ahmad, and Hinman (2010) indicated that a high level of religious coping was related to more positive adjustments, such as life satisfaction. Daily spiritual experience is strongly associated with a person's well-being for example, happiness, life satisfaction, life excitement, and optimism (Ellison & Fan, 2008). In addition, Ardelt and Koenig (2006) revealed that participating in spiritual activities directly and positively influences the death acceptance and subjective well-being of older adults. Religiousness and spirituality are significantly important personal resources for older adults in order to cope and adapt with issues of loss and death (Yoon & Lee, 2004). Thus, spirituality and religious participation are important factors in the lives of older adults in ALFs to improve their life satisfaction, subjective well-being, and coping.

In addition, participation in religious activities improves the individual's social support system of older adults living in ALFs. Krause (1997) argued that an important territory of

religiousness and spirituality is religious support that connects with other religious group members. Religious support has been found to be significantly related with less emotional distress, more life satisfaction, and greater physical health conception (Lazar & Bjorck, 2008). Yoon and Lee (2007) stated that greater religious support is significantly associated with older adults' life satisfaction. In contrast, restricted participation in religious activities or a lack of religious support is related with poorer mental health and more depressive symptoms (Mitchell & Weatherly, 2000). Also, Koenig et al. (1988) found that older adult women are more likely to engage in religious activities (e.g., prayer and Bible study meetings) and have more high spirituality than older adult men. In summary, religious activity participation and spirituality may be significantly associated with physical and mental health of older adult residents in ALFs.

## Stress and Spirituality of Older Adults

Responses to stress have been found to be associated with coping resources such as spirituality, physical and psychological skills, and social support (Pearlin & Schooler, 1978; Shibusawa & Mui, 2001). T hese stress coping resources are important factors for the psychological well-being of people. Previous studies have shown that in the relationship between stress and a person's health, religiousness and spirituality plays a positive indirect mediating role (Laudet, Morgen, & White, 2006; Lee, 2011). Laudet et al. (2006) found that to mediate the relationship of stress and quality of life, spiritual wellness and personal religious participation are important factors. Also, religious involvement possibly buffers stressors' impact on depression (Idler, 1995; Strawbridge et al., 1998). Moreover, spirituality and faith are playing a mediating role among stress perception, depression, and anxiety symptoms (Maynard, Gorsuch, & Bjork, 2001; Young, Cashwell, & Shcherbakova, 2000).

Demographic Factors Influencing Depression of Older Adults

Previous studies indicated that demographic factors such as age, marital status, ethnicity, and driving capability were significantly related to the subject well-being of older adults (Curtis, Sales, Sullivan, Grays, & Hedricks, 2005; Lee, 2011; Winzelberg, Williams, Preisser, Zimmerman, & Sloane, 2005). Especially, in terms of driving capability, many older adults experience the difficult decision of giving up driving after going through functional deterioration (Freeman et al., 2006). The consequences of driving cessation among older adults increased depression levels and decreased outside activity levels (Fonda, Wallace, & Herzog, 2001; Freeman et al., 2006; Lee, 2011; Marottoli, de Leon, Glass, Williams, Cooney, & Berkman, 2000). Older adults use public transportation services for about two to three percent of their trips (Freeman et al., 2006). Older adults like to use informal transportation support from their family and friends (Taylor & Tripodes, 2001). However, older people are concerned about being a burden to their family and friends, and this conception brings limitation on their activities (Freeman et al., 2006).

## CHAPTER 3

## METHODOLOGY

Figure 1 shows a theoretical model for the mediating role of spiritual factors between stress and depression among older adults in assisted living.

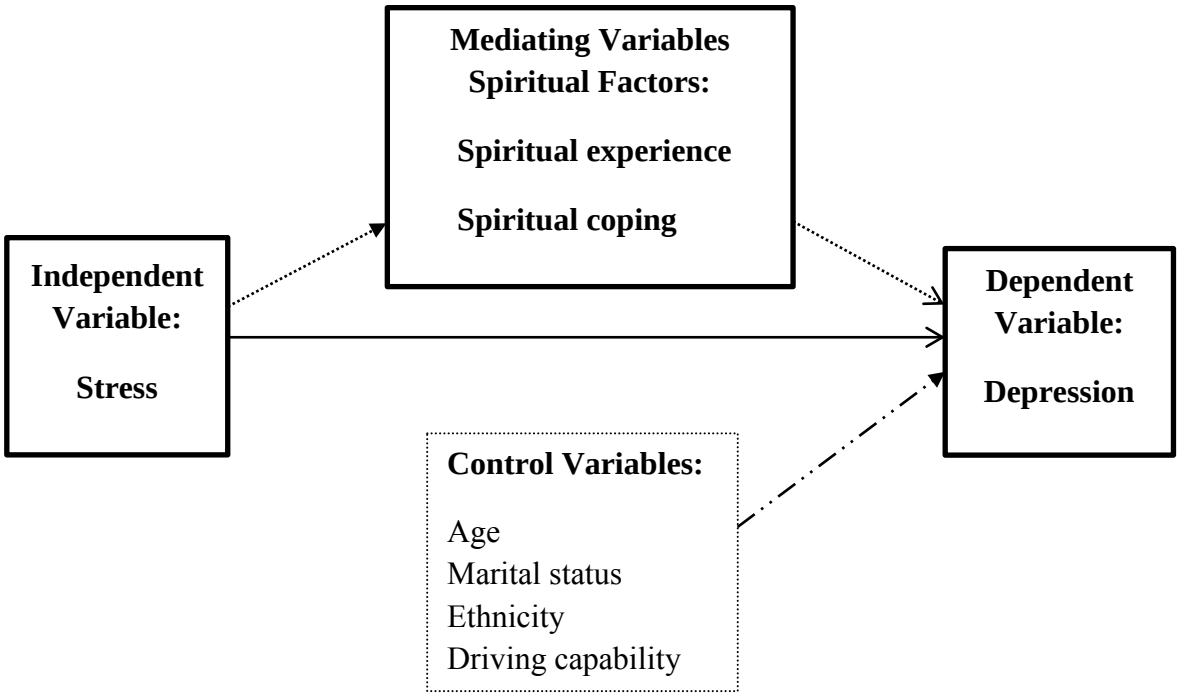



**Figure 1**

*A Theoretical Model for the Mediating Role of Spiritual Factors between Stress and Depression among Older Adults in Assisted Living*

Research Questions and Hypotheses

Based on a review of previous studies, this research explores: 1) How is stress in older adults living in ALFs associated with depression?; 2) How do spiritual factors of older adults living in ALFs mediate the relationship between stress and depression?; and 3) What are

different mediating roles of spiritual factors among older adult men and women on the relationship between stress and depression? This study tests three hypotheses. First, there will be a significant association between stress and depression in older adults. Second, a significant relationship between stress and depression will either not be significant or will decrease when spiritual factors are meditated. Third, there will be different mediating roles of spiritual factors among older adult men and women on the relationship between stress and depression.

Subjects

This study utilized a secondary survey data of older adult living in ALFs. The data was originally collected by Drs. Kyoung H. Lee and Brien L. Bolin (School of Social Work, Wichita State University), between May and September 2010. Subjects for this cross-sectional study were from seven ALFs in the Wichita, Kansas metropolitan areas. This study recruited 316 older residents in ALFs by using a purposive sampling method. The following are the selection criteria of this study's subjects: 1) residents age 65 or older; 2) people who accepted and signed the invitation card for participation; 3) persons without cognitive impairment and significant mental illness. The following are the demographic characteristics of all older adult respondents in ALFs. Older adult residents who responded to this survey ranged from age 65 to 102, a mean of 82.6 years old, and over 70 percent were female. More than 85.4 percent of the respondents were Caucasian, while 8.9 percent were African American, Hispanics were 0.9 percent, American Indians were 0.9 percent, Asian American were 0.6 percent, and others were 3.2 percent. Regarding educational status, 84.9 percent of subjects had a high school degree/GED or greater degree and 15.1 percent of them did not have a high school diploma/GED. Married respondents are comprised of 18.7 percent of the sample and widowed respondents were 64.2 percent. Approximately 72 percent of respondents lived alone and 28 percent lived with

someone. In addition, about 50 percent of respondents' annual income was less than $20,000. In terms of religion, 62 percent were Protestants, 23 percent were Catholics, 0.3 pe rcent were Buddhism, and others were 14.6 percent. In terms of the sample characteristics, this study has similarity with previous survey studies in other ALFs about average age, gender, and marital status (Cummings, 2002; Martin, Fiorentino, Jouldjian, Josephson, & Alessi, 2010).

## Procedure

This face-to-face interview survey was conducted in 2010 with a structured questionnaire. The time allotted for each was 50 t o 60 m inutes. T hese interviews were conducted in private, safe places such as a conference room, living room, or dining room area when these places were not occupied by other residents.

To improve the validity of the structured survey questionnaire, this study gained feedback from scholars who have researched assisted living residents, depression, stress, coping, or aging. Also, a pilot test of the survey was implemented for 15 older adult residents before conducting the main study in order to improve the survey instrument and survey process (Williams, Unrau, & Grinnell, 2003). At the beginning of each interview, interviewers explained the study's purpose and benefits. Also, interviewers addressed the rights of participants as well as issues of anonymity and confidentiality of their identity to all respondents. A ll older adult participants signed an informed consent form in order to demonstrate their voluntary participation in this survey. This study has received approval from Institutional Review Board (IRB) of Wichita State University.

Measures

Dependent Variable

*Depression*. To measure the depression levels of older adults in ALFs, this study used the Geriatric Depression Scale-Short Form (GDS-SF) (Jang et al., 2006; Sheikh & Yesavage, 1986). Researchers indicated that the GDS-SF has appropriate reliability and validity to measure the depressive symptoms of older adults in long-term care settings (Jang et al., 2006; Parmelee, Katz, & Lawton, 1992). This GDS-SF contains 15 items with yes/no questions and scores one point for each answer. The GDS-SF scores are summative and range from 0 (no depressive symptoms) to 15 (severe depressive symptoms). The exemplary items of the scale are "Do you feel your life is empty?" and "Are you in good spirits mostly?" (Jang et al., 2006; Sheikh & Yesavage, 1986). Previous studies reported Cronbach's alphas of the scale from .72 to .75 (Jang et al., 2006; Sheikh & Yesavage, 1986). Higher scores reflect higher depressive symptoms. A Cronbach's alpha of .78 was found in the current study.

Independent Variable

*Stress*. To measure the levels of stress, this study used the Perceived Stress Scale (PSS10; Cohen, Kamarck, & Mermelstein, 1983). The PSS contains ten items with a five-point response format ranging from 0 (never) to 4 (very often). The PSS scale measures stress from overloaded, unpredictable, and uncontrollable conditions. Some exemplary questions of the scale are "In the last month, how often have you been upset because of something that happened unexpectedly?" and "In the last month, how often have you felt that you were unable to control the important things in your life?" The PSS has been used frequently with participants 18 years of age and over, older Americans and various populations in different countries (Cohen & Williamson,

1988; Siqueira Reis, Ferreira Hino, & Romelio Rodriguez Anez, 2010). Researchers reported that the Cronbach's alpha of the perceived stress scale for internal consistency was .77 in their study (Siqueira Reis et al., 2010). A Cronbach's alpha of .77 was found in the current study.

Mediating Variables

*Spiritual Factors.* To measure multidimensional spiritual factors, this study used three subscales from the Brief Multidimensional Measures of Religiousness/Spirituality (BMMRS; Fetzer Institute & National Institute on Aging Working Group, 2003; Yoon & Lee, 2007). The three subscales of the BMMRS include 1) spiritual experience (six items) with a five-point response format; 2) spiritual coping (seven items) with a four-point response format; 3) forgiveness (three items) with a four-point response format. The BMMRS subscales indicated high reliability scores for internal consistency in the entire scales and also for researching various populations (Lee, 2011; Yoon & Lee, 2004, 2007). In this current study, the Cronbach's alpha of the scales ranged from .53 to .91. In addition, this study used four demographic variables: age, marital status, ethnicity, and driving capability. The variable age was a continuous variable. Married, Caucasian, and lack of driving capability were coded as 1; otherwise, they were coded as 0.

# CHAPTER 4

# RESULT

## Data Analyses

This study employed several analytic methods: $\chi^2$ /t-test, correlation matrix, hierarchical multivariate regression, and Sobel test for gaining the characteristic information of older adults and testing three hypotheses. First, $\chi^2$ and t-test were used to find out different characteristics between older adult men and women. Second, a correlation matrix was used to know basic relationships among main variables. Third, a hierarchical multivariate regression method was used to understand the impact of stress, spiritual factors, and demographic factors on depression. Also, the hierarchical regression analysis identified the specific amount of variance in depression, which is accounted for by different steps (Mertler & Vannatta, 2002).

Fourth, a Sobel test was utilized to assess the mediating role of spiritual factors in the relationship between stress and depression among all older adult participants (Baron & Kenny, 1986; Preacher & Hayes, 2004, 2008). In addition, in older adult men and women groups, Sobel tests were used to compare different mediating roles of spiritual factors in the relationship between stress and depression. Four criteria should be met to conduct a Sobel test in the examination of mediating factors between independent and dependent variables (Baron & Kenny, 1986). This study followed the criteria: 1) there are significant relationships between stress and depression; 2) there are significant relationships between stress and spiritual factors; 3) there are significant relationships between spiritual factors and depression; and 4) a previous significant association between stress and depression became non-significant or decreased by controlling mediating variables (spiritual factors). For the Sobel test, ordinary least square (OLS) regression analyses are required. In addition, for all data analyses, this study used PASW (version 18).

There were no multicollinearity issues identified among independent variables since the tolerance scores for all independent variables were greater than .58.

Demographic Differences between Older Adult Men and Women in ALFs

Table 1 shows demographic differences between older adult men and women in assisted living facilities. Significant differences were found between older adult men and women for

**Table 1**

*Demographic Differences of Older Adult Men and Women Residents in ALFs (in percent or mean, n=316)*

| | | | | Men | Women | $\chi^2$ / t-test |
|---|---|---|---|---|---|---|
| Age | Ranged from 65 to 102; | | Mean | 80.9 | 83.3 | 1.69 |
| Ethnicity | Caucasia | | | 81. | 87.1 | 6.90 |
| | African American | | | 13.0 | 7.1 | |
| | Other | | | 5.5 | 5.8 | |
| Marital status | Married | | | 29.3 | 14.3 | 18.48*** |
| | Widowed | | | 46.7 | 71.4 | |
| | Others (divorced, separated, etc.) | | | 24.0 | 14.7 | |
| Education | Lower than high school diploma/GED | | | 9.8 | 17.3 | 14.66** |
| | High school diploma/GED | | | 56.5 | 67.3 | |
| | Greater than high school diploma/GED | | | 33.7 | 15.5 | |
| Annual income | Less than $20,000 | | | 40.8 | 54.3 | 5.72 |
| | $20,001-$40,000 | | | 36.9 | 32.1 | |
| | More than $40,000 | | | 22.3 | 23.6 | |
| Driving capability | Yes | | | 32.6 | 20.3 | 5.45* |
| | No | | | 67.4 | 79.7 | |
| Bereavement experience | Losing spouse | Yes | | 47.8 | 71.4 | 15.88*** |
| | | No | | 52.2 | 28.6 | |
| | Losing child | Yes | | 17.4 | 23.2 | 1.31 |
| | | No | | 82.6 | 76.8 | |
| | Losing friend | Yes | | 17.4 | 28.1 | 4.01* |
| | | No | | 82.6 | 71.9 | |
| | Losing relative | Yes | | 39.1 | 42.0 | .22 |
| | | No | | 60.9 | 58.0 | |

*Note*. *p ≤ .05, ** p ≤ .01, *** p ≤ .001

marital status, education, driving capability, losing spouse, and losing friend. Older adult men had a significantly higher rate of being currently married than older adult women, but older adult women were found to have significantly higher rate of being widowed than older adult men. In terms of education, older adult men were significantly more likely to have greater than high school diploma/GED than older adult women. Older adult men were also significantly more likely to have driving capability than older adult women. On the other hand, older adult women were significantly more likely to experience losing spouse and losing friend. However, there are no significant differences found for age, ethnicity, annual income, losing child, and losing relative.

Differences of Main Variables between Older Adult Men and Women in ALFs

Table 2 presents differences of the main variables between older adult men and women in assisted living. Older adult women were found to be significantly more likely to have spiritual experience, spiritual coping, and forgiveness than older adult men. However, there were no significant differences for stress and depression between older adult women and men.

**Table 2**

*Differences between Older Adult Men and Women for Main Measured Variables (n=316)*

| | Men | | Women | | t-test |
|---|---|---|---|---|---|
| | Mean | S.D. | Mean | S.D. | |
| Spiritual experience | 23.47 | 6.39 | 25.95 | 4.45 | 23.91*** |
| Spiritual coping | 21.82 | 3.95 | 23.47 | 3.29 | 5.94* |
| Forgiveness | 10.08 | 1.92 | 10.50 | 1.46 | 4.04* |
| Stress | 15.42 | 5.85 | 15.84 | 6.39 | 1.33 |
| Depression | 3.96 | 3.27 | 3.62 | 2.96 | 2.22 |

*Note.* *$p \leq .05$, ** $p \leq .01$, *** $p \leq .001$

*Impact of Stress and Spirituality on Depression among Older Adults in ALFs*

The hierarchical multivariate regression results in Table 3 show the impact of stress, spiritual experience, spiritual coping, and forgiveness on the depression of older adults in assisted living facilities. For the three models (men, women, and total participants), demographic variables in step one explain three to five percent of the variances ($R^2$) in the depression of older adults. In step two, demographics and stress account for 13 to 27 percent of the variances ($R^2$). In the final step, the previous variables and spiritual factors explain 28 to 32 percent of the variances ($R^2$).

For the total older adult participants, identified as Caucasian, lack of driving capability, stress, and spiritual coping were significant predictors of depression. Caucasians are significantly less likely to experience depression than other ethnic groups ($\beta = -.92$, $p \leq .05$). Older adult residents without driving capability were found to be significantly more likely to experience depression than people with driving capability ($\beta = .93$, $p \leq .05$). Older adults with a high level of stress are significantly more likely to experience a high level of depression than other ($\beta = .19$, $p \leq .001$). Also, older adults with a higher level of spiritual coping were found to be significantly less likely to experience a high level of depression than people without a high level of spiritual coping ($\beta = -.17$, $p \leq .01$).

Several other predictors of depression between older adult men and older adult women residents were found. For the older adult men residents, stress and spiritual coping were found to be significant predictors of depression. On the other hand, older adult women residents in ALFs reporting race as Caucasian, having a lack of driving capability, and stress were also found to be significant predictors of depression.

**Table 3**

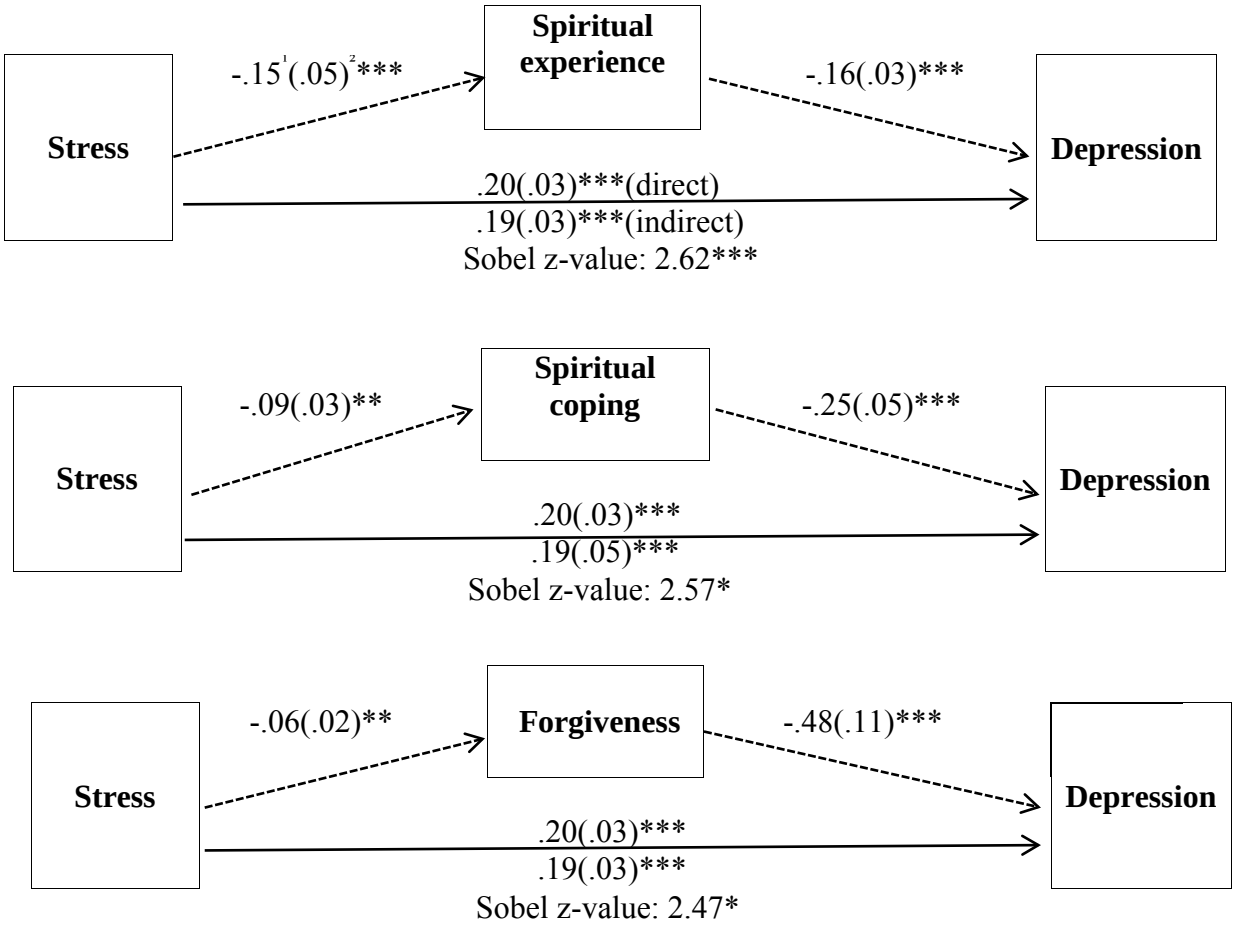
*Estimated Coefficients of Hierarchical Regression Predicting the Roles of Stress and Spirituality on Depression*

| | Men(n=92) | | Women(n=224) | | Total(n=316) | |
|---|---|---|---|---|---|---|
| | β[1] | SE[2] | β[1] | SE[2] | β[1] | SE[2] |
| **Step 1** | | | | | | |
| Age | –.05 | .04 | –.01 | .03 | –.02 | .02 |
| Married | .61 | .78 | .19 | .57 | .35 | .45 |
| Caucasian | –.53 | .91 | –1.16 | .63 | –.94 | .51 |
| Lack of driving capability | .57 | .76 | 1.29* | .51 | 1.04* | .41 |
| F test (4 d.f.) | .72 | | 2.86* | | 3.03* | |
| $R^2$ | .03 | | .05 | | .04 | |
| **Step 2** | | | | | | |
| Age | –.00 | .04 | .02 | .02 | .01 | .02 |
| Married | .52 | .74 | .04 | .52 | .29 | .41 |
| Caucasian | –.10 | .88 | –1.01 | .56 | –.71 | .46 |
| Lack of driving capability | .46 | .73 | 1.16** | .45 | .90* | .38 |
| Stress | .19** | .06 | .22*** | .03 | .21*** | .03 |
| F test (5 d.f.) | 2.39* | | 14.57*** | | 15.06*** | |
| $R^2$ | .13 | | .27 | | .21 | |
| **Step 3** | | | | | | |
| Age | .04 | .04 | .04 | .02 | .03 | .02 |
| Married | 1.27 | .69 | .19 | .53 | .57 | .40 |
| Caucasian | –.28 | .80 | –1.18* | .56 | –.92* | .45 |
| Lack of driving capability | .41 | .65 | 1.14* | .44 | .93* | .36 |
| Stress | .15* | .06 | .20*** | .03 | .19*** | .03 |
| Spiritual experience | –.00 | .08 | –.05 | .06 | –.04 | .05 |
| Spiritual coping | –.42*** | .12 | –.06 | .08 | –.17** | .06 |
| Forgiveness | .07 | .24 | –.15 | .14 | –.07 | .12 |
| F test (8 d.f.) | 4.74*** | | 10.36*** | | 13.67*** | |
| $R^2$ | .32 | | .29 | | .28 | |
| Adjusted $R^2$ | .26 | | .27 | | .26 | |

*Notes*. *p≤.05, **p≤.01, ***p≤.001; [1]Unstandardized coefficients, [2]Standard errors

Mediating Role of Spiritual Factors among All Older Adult Residents in ALFs

Mediation models in Figure 2, 3, and 4 were examined with the Sobel test using an interactive web-based method (Baron & Kenny, 1986; MacKinnon & Dwyer, 1993; Preacher & Hyes, 2008; Preacher & Leonardelli, 2001).




*Note*. *p≤.05, **p≤.01, ***p≤.001; [1]Unstandardized coefficients, [2]Standard errors

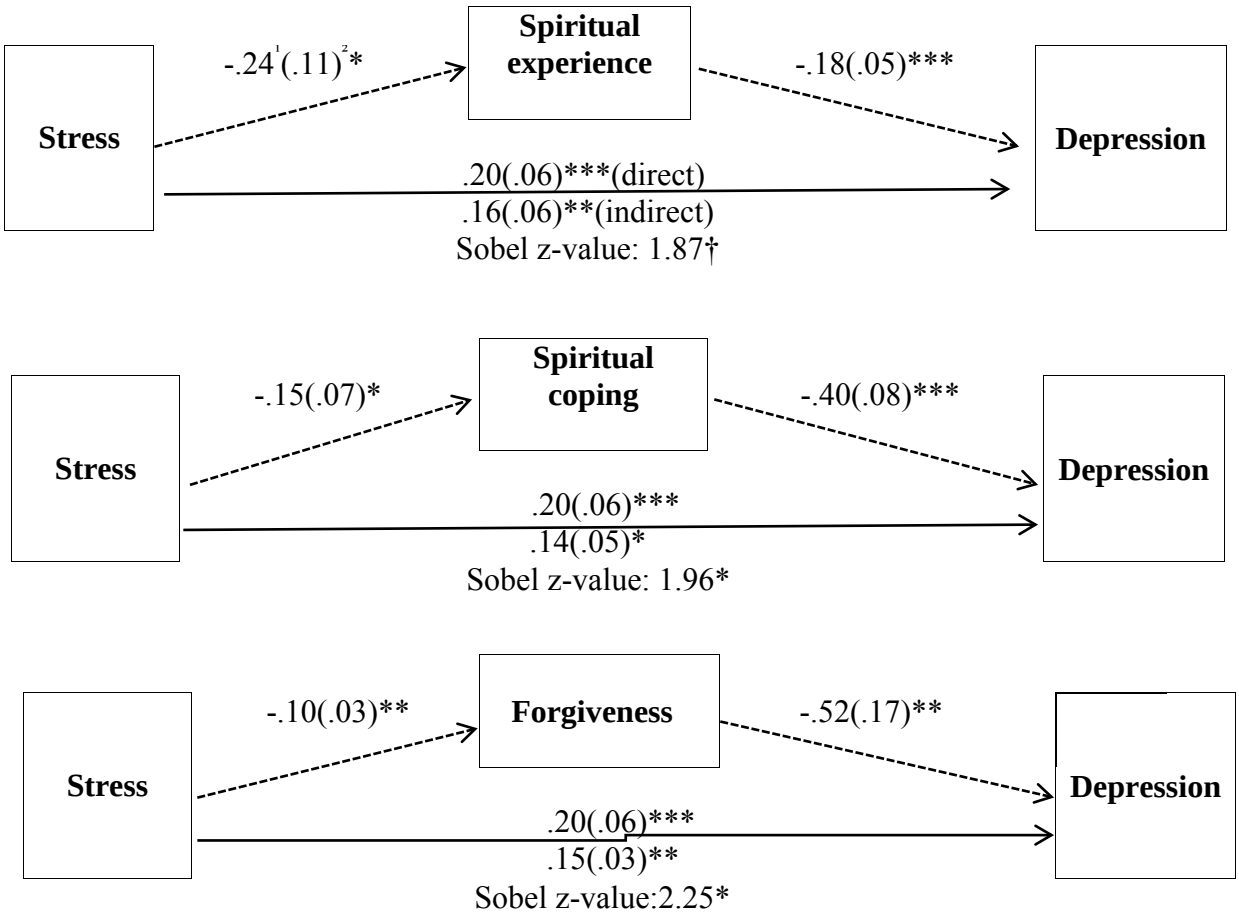
**Figure 2**

*The Mediating Role of Spiritual Factors on the Relationship between Stress and Depression among Older Adults in ALFs*

A significance differences between direct and indirect effects was determined in the OLS regression coefficients. For total older adult participants, Sobel's z-values of three models were found to be significant at the p≤.05 level. However, the direct coefficients of stress on depression (β = .20, p≤.001) did not show significant changes when spiritual experience (β = .19, p≤.001), spiritual coping (β = .19, p≤.001), and forgiveness (β = .19, p≤.001) were mediated. Therefore, this study did not find the significant meditating roles of spiritual factors in

the relationship between stress and depression among total older adult participants. Figure 2 shows the mediating role of spiritual factors on the relationship between stress and depression among older adults in ALFs.

Mediating Role of Spiritual Factors among Older Adult Men in ALFs




*Notes.* †p≤.1, *p≤.05, **p≤.01, ***p≤.001; [1]Unstandardized coefficients, [2]Standard errors

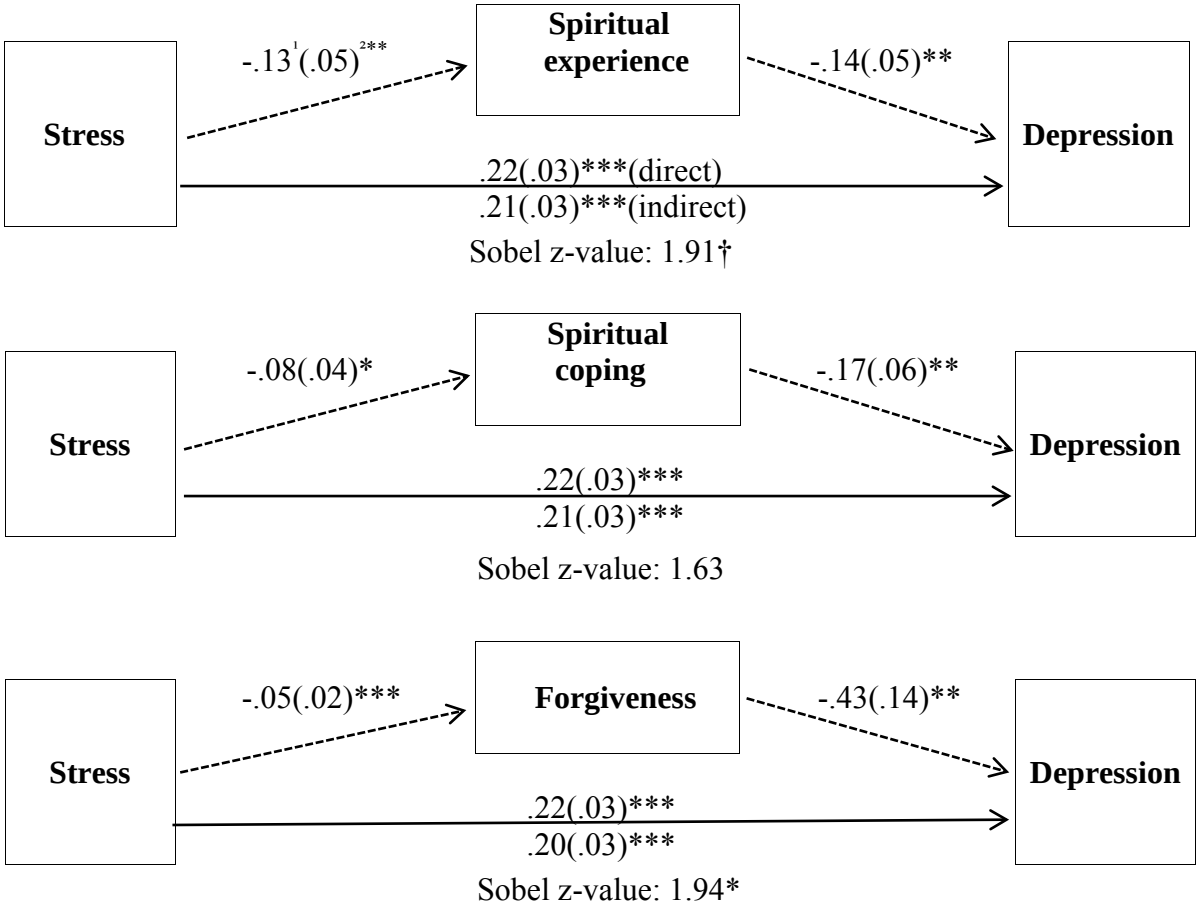
**Figure 3**

*The Mediating Role of Spiritual Factors on the Relationship between Stress and Depression among Older Adult Men in ALFs*

For the older adult men residents, the direct coefficient of stress on depression ($\beta = .20$, $p \leq .001$) decreased when spiritual experience was mediated ($\beta = .16$, $p \leq .01$); however, the Sobel's z value of this model was not significant. Sobel's z-values of other two models (mediating variables: spiritual coping and forgiveness) are significant at the $p \leq .05$ level. The coefficient of stress on depression decreased when spiritual coping was mediated ($\beta = .14$, $p \leq .05$). While, the coefficient of stress on depression decreased when forgiveness was mediated ($\beta = .15$, $p \leq .01$). Figure 3 shows the mediating role of spiritual factors on the relationship between stress and depression among older adult men in ALFs.

Mediating Role of Spiritual Factors among Older Adult Women in ALFs

For the older adult women residents, Sobel's z-value of only one model (mediating variable: forgiveness) was found to be significant at the $p \leq .05$ level. The direct coefficient of stress on depression ($\beta = .20$, $p \leq .001$) did not show a significant change when forgiveness was controlled ($\beta = .20$, $p \leq .001$). Additionally, Sobel's z-values of the other two models (mediating variables: spiritual experience and spiritual coping) were not found to be significant. Therefore, this study did not find the significant meditating roles of spiritual factors in the relationship between stress and depression among older adult women residents. Figure 4 shows the mediating role of spiritual factors on the relationship between stress and depression among older adult women in ALFs.




*Notes.* †p≤.1, *p≤.05, **p≤.01, ***p≤.001; [1]Unstandardized coefficients, [2]Standard errors

**Figure 4**

*The Mediating Role of Spiritual Factors on the Relationship between Stress and Depression among Older Adult Women in ALFs*

# CHAPTER 5

# DISCUSSION

## Theoretical Implication

The purpose of this study was to examine the relationship between stress and depression as well as the mediating role of spiritual experience, spiritual coping, and forgiveness on the relationship between stress and depression among men and women older adults in ALFs. Three hypotheses were tested in this research study. The first hypothesis that there would be a significant association between stress and depression among older adults was substantiated. This study found that a higher level of stress was significantly associated with a higher level of depression among older adults in ALFs. This finding is consistent with previous studies revealing that health problems, relocation, financial problems, lack of transportation, lack of social support, and losing a loved one are significant factors influencing the subjective well-being of older adults (Fitzpatrick & Tran, 2002; Lee, 2011). However, a unique finding in the current study specifically identified a relationship between stress and depression among older adults in assisted living. In order to help older adults control the stressful situations, professionally trained social workers need to provide appropriate intervention programs.

The second hypothesis that a relationship between stress and depression would decrease when spiritual experience, spiritual coping, and forgiveness were mediated was not substantiated. The current study did not indicate significant mediating roles of spiritual factors in the relationship between stress and depression among older adults in assisted living. However, this study found that spiritual factors were important predictors to minimize depressive symptom of older adults in assisted living. These findings are consistent with previous studies indicating that

spirituality was an important determinant in the existence of mental health problems in individuals (Lavretsky, 2010; Lustyk et al., 2006; Wink & Scott, 2005; Yoon & Lee, 2007). These findings support the need for social workers to develop spiritual support programs that boost spiritual coping skills for older adults to cope with their mental health problems.

The third hypothesis that there will be different mediating roles of spiritual factors in the relationship between stress and depression among older adult men and women was substantiated. This study revealed different mediating roles of spiritual factors between older adult men and women residents. There were significant mediating roles of spiritual coping and forgiveness in the relationship between stress and depression among older adult men, but there were no significant mediating roles of spiritual factors among older adult women. T he finding is generally consistent with previous studies indicating the mediating roles of religiousness or spirituality between stressful events and psychological well-being (Idler, 1995; Laudet et al., 2006; Strawbridge et al., 1998). However, this finding is unique in that this study indicated the significant mediating roles for spiritual coping and forgiveness in the relationship between stress and depression among older adult men in assisted living. Thus, these factors were found to minimize the depression of older adults in assisted living and to promote stress coping mechanisms, social workers need to provide spiritual support programs for older adult residents, especially men.

## Implications for Practice and Policy

Older adults in assisted living have higher stress than other general elderly populations, which influences their depressive symptoms. Older adults' spiritual factors such as spiritual experience, spiritual coping, and forgiveness play important roles as coping resources to

minimize stress and depressive symptoms among older adults in assisted living. Many ALFs do not have professionally trained social workers or spiritual support programs for older adults in assisted living. Thus, two implications are suggested based on the findings of this study.

First, this study suggests ALFs to regularly screen residents' who may be experiencing stressful situations or have depressive symptoms. To assess the stressful situations and depressive symptoms, ALFs need to hire professionally trained social workers. While there is necessity for trained social workers in ALFs, current policies or regulating bodies do not require ALFs to employ these trained professionals. According to Mollica (1998), only 16 states required assisted living facilities to maintain information for the mental health needs of residents. As a result, a fraction of assisted living facilities screen their older adult resident's mental health status, provide counseling, or mental health interventions (Cummings, 2002). Finally, less than one-half of residents receive the mental health services based on their requests (Dittmar, Smith, Bell, Jones, & Manzanares, 1983).

A lack of systemic assessment for screening of stressful situations or psychological distress prevents older adults from receiving appropriate services or interventions in ALFs. As a result, older adult residents may demonstrate an increase in their psychological distress. Professional social workers can engage with the residents of ALFs to assess the problems of the residents, and provide effective programs to reduce the risk factors. Professional social workers can play important roles for maintaining the psychological and physical health status of older adult residents in assisted living. If there are barriers to hire professional social workers, an alternative way will be using outside resources. F or an example, ALFs may contract with licensed clinical social workers to assess stress and depressive symptoms as well as to provide appropriate services.

Second, this study suggests that ALFs provide appropriate spiritual support programs to minimize psychological distress. According to Bart (1998), 81 percent of the general public desired to utilize their spiritual or religious values and beliefs in a therapeutic process. Further, about 82 percent of clients in the social work arena considered spiritual and religious components as important aspects of social work (Bart, 1998). While 60 percent of older adults responded that they utilized religiousness or spirituality as a coping resource to handle mental health issues (Koenig, 1995). However, only 19 percent of social work practitioners used the spiritual and religious aspects for the assessment and intervention of clients (Sheridan, 2004).

Social work practitioners and health care providers should consider spiritual and religious coping recourses as well as providing appropriate spiritual support programs for older adults to utilize their coping resources and to enhance their quality of life (Lee, Crittenden, & Yu, 1996; Yoon & Lee, 2007). Religious/spiritual intervention should be offered for only older adults who are interested in the support programs because religious/spiritual activities may increase psychological distress to older adults who are not interested (Ardelt & Koenig, 2006; O'Connor, 2002). Also, before providing religious/spiritual activities, social work practitioners need to extend the knowledge of different religions, community resources of different religions, theories for religiousness/spirituality, and practice models utilizing religiousness/spirituality (Lee, 2011). Especially, many social workers are not familiar with the religions of minority groups such as Islam, Buddhism, Native American traditions, and Asian religions. They need to study different religions to understand the various religious backgrounds of clients (Murdock, 2005; Nelson-Becker, 2005). In addition, many social work programs need to emphasize teaching assessment and intervention approaches for religiousness and spirituality (Morano & King, 2005).

# CHAPTER 6

## LIMITATIONS AND FUTURE RESEARCH

This study makes important contributions to literature on spirituality, stress, depression, and older adult population by identifying the relationship between stress and depression as well as the mediating roles of spiritual factors in the relationship between stress and depression among older adults in assisted living. Also, this study adds to the knowledge base for social workers or health care providers who may wish to develop and provide practical spiritual support programs to older adults with stress and depression in ALFs. However, when the findings of this study are explained, the following limitations should be considered.

First, this study utilized a purposive sampling to recruit 316 study participants in seven assisted living in Wichita, Kansas. Therefore, it is difficult to generalize the findings of this current study to all of Kansas and other areas. Additional studies need to consider utilizing a probability sampling method with a large sample to generalize the dynamic relationship among the experience of stress, spirituality, and depression among older adults in assisted living.

Second, because this study is a cross-sectional survey, it was not designed for understanding long-term patterns for the relationship between stress and depression as well as the mediating roles of spiritual factors in the relationship between stress and depression among older adults in ALFs. Therefore, a longitudinal survey needs to be conducted to describe the long-term patterns of the dynamic relationship among these factors for older adult residents in ALFs.

Third, this study did not include characteristics of the seven ALFs in the model of this study. Therefore, future studies need to consider the different characteristics among ALFs such

as the type of religious services or programs offered, the support systems of staff, living expenditures, person-centered care programs, transportation, and the condition of property.

Fourth, this study used only 92 male residents compared to 224 female residents. Therefore, future studies need to use similar sample size between the two groups for statistical analysis and confidence in the comparison of males to females. Further, this would ensure generalizability of the findings.

Finally, another limitation for this study is that it did not focus on race as mediating roles of spiritual factors among different groups in ALFs. Different ethnic groups may have different traditions and perspectives regarding religions and spirituality. Also, different religious groups have different practices. Thus, additional studies need to be conducted to compare different ethnic groups to know the different roles of spiritual factors. Finally, this study excluded older adults with severe mental illness or cognitive impairments, so the current findings from this study cannot be applied to this particular population.

# CHAPTER 7

## CONCLUSION

In summary, this study found that older adults with a high level of stress demonstrated a high level of depression in ALFs. Also, older adults with high levels of spiritual experience, spiritual coping, and forgiveness had a lower level of depression. Especially, spiritual coping and forgiveness were found to mediate and reduce the strength of relationship between stress and depression among older adult men in ALFs. This study illustrates the importance of providing spiritual support for older men who are dealing with significant stress as a way to minimize depressive symptoms. In order to provide this spiritual support, this study also suggests the need of the regular stress and depression assessment in ALFs to provide appropriate spiritual intervention programs for older adults, especially men.

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