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# Relation Between Anger And Depression And Predictors of Anger Among Residents of Assisted Living Facilities

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RELATION BETWEEN ANGER AND DEPRESSION AND PREDICTORS OF  
ANGER AMONG RESIDENTS OF ASSISTED LIVING FACILITIES

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## ABSTRACT

### RELATION BETWEEN ANGER AND DEPRESSION AND PREDICTORS OF ANGER AMONG RESIDENTS OF ASSISTED LIVING FACILITIES

At the present time, elderly individuals represent the fastest growing group in the United States. Within this growing population there are an increasing number of individuals who utilize long-term care services. Among these paid formal long-term care services (e.g., nursing homes, congregate housing, and resident care facilities), assisted living facilities have grown rapidly in recent years. However, a limited number of research has been done on mental health issues among residents in assisted living facilities. The purpose of the present study was to investigate the relation between anger and depression and to assess the four predictors of the anger experience (functional impairment, perceived decisional involvement in relocation to an assisted living facility, perceived care from an assisted living facility, and personal control).

A sample of 82 residents from five assisted living facilities in New Jersey participated in this study. Residents were classified as depressed if they obtained a score of 7 or higher on the Geriatric Depression Scale Short Form (GDS-SF). Approximately 23% of the current study participants were depressed based on a cut-off of seven. Anger was measured by the Anger-Hostility of the Profile of Mood States (POMS). As predicted, there was a positive relationship between anger and depression. Individuals in this sample who reported experience of anger were also likely to report depressive mood symptoms. Contrary to the study prediction, perceived care was the only significant predictor of anger and the three other predicting variables were not found to be

significant predictors of anger experience in this study. In addition, many residents appeared to emphasize their experience with food services and interaction with staff and administration when asked about their perceived care from the assisted living facility. The key to this finding seems to be residents' interpretation of how well they feel they are treated or cared for by those who interact with them daily at their assisted living facilities.

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I was always looking forward to writing this page during my dissertation project because it meant that I will be coming out of the long tunnel.

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## DEDICATION

This dissertation is dedicated to two great women who had significant impact on my life – the late Dr. Judith Berman Brandenburg and the late Ms. Midori Shimanouchi Lederer. Had I not met you, my journey to this accomplishment would have remained simply as a dream.



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## CHAPTER I

### Introduction

At the present time, elderly individuals represent the fastest growing cohort in the United States. In 2004, 36.3 million people over the age of 65 were counted in the U.S., an increase of 3.1 million or 9.3% since 1994 (Federal Interagency Forum on Aging-Related Statistics, 2006). Among these 36.3 million older people, 18.5 million people were between the ages of 65 to 74 (a group more than eight times larger than in 1990); 13 million people were between the ages of 75 to 84 (a number 17 times larger than in 1990); and 4.9 million people were ages 85 and over (a group 39.8 times larger than in 1990). Demographic projections indicate that by the year 2030 the number of adults age 65 and older will increase to 71.5 million, which includes the baby boom generation.

In this growing elderly population there are an increasing number of individuals who utilize long-term care services. Long-term care has been historically provided by family members (a spouse, a child, and a sibling) or family friend; however, the increasing geographic dispersion of families and the increasing number of women working outside the home came to limit the number of elderly individuals receiving care in an informal setting and thus increasing reliance on paid formal care, such as nursing homes, congregate housings, and resident care facilities (Becker, Schonfeld, & Stiles, 2002; Elrod, 2002; Gehlken, 2003). Among these paid formal long-term care services, assisted living facilities provide the fastest growing care option for today's older adults (Cummings, 2002; Cummings & Cockerham, 2004).

According to the U.S. Administration on Aging [AoA] (2003), between 60,000 to 1 million older adults are estimated to be living in assisted living facilities. As of December 31, 2004, there were 11,777 people in New Jersey residing in 190 assisted living facilities and comprehensive personal care homes (New Jersey Department of Health and Senior Services [NJDHSS], 2005). One can explain the popularity of assisted living facilities because assisted living facilities have a common philosophy of providing residential long-term care in a home-like environment, which encourages residents to practice autonomy and independence (Utz, 2003). In addition, some states rely on assisted living facilities to reduce the cost of Medicaid because these facilities are generally less expensive than nursing homes (Cummings & Cockerham, 2004; Mollica & Snow, 1996).

Despite the rapid growth of assisted living facilities, this particular type of long-term care service is yet to be federally regulated; however, most states license and regulate assisted living facilities based on varying criteria (Elrod, 2002). In New Jersey, the NJDHSS license and inspect assisted living facilities (NJDHSS, 2005). Although Medicaid coverage may be available for some qualified individuals, residents of assisted living facilities are responsible for the cost of their care; therefore, demographics of assisted living facilities are rather homogeneous. Cummings and Cockerham (2004) describe the typical assisted living resident as a female in her eighties who needs assistance with three activities of daily living (ADLs). However, given the projected increase of the ethnic minority elders (Federal Interagency Forum on Aging-Related Statistics, 2006), as well as improved medical care and extended longevity (Mitchell & Kemp, 2000), demographics of assisted living facilities anticipate change. As reliance on

assisted living facilities continues to increase, information about this group of individuals needs to be considered when overall issues of the elderly in long-term care services are discussed.

Prior research on the elderly in long-term care services has been conducted in nursing homes, and results are often compared to community-dwelling elders before the emergence of assisted living facilities. Although researchers have been exploring the issues specific to residents of assisted living facilities, little is currently known about their mental health because this type of long-term care was developed only in the mid-1980s. Among these existing studies, a majority of them focused on depression, life satisfaction, and quality of life (QOL) in relation to perceived social support, level of functional impairment, personal control, neuropsychiatric symptoms, and length of residency in the assisted living facilities (Burdick et al., 2005; Cummings, 2002; Cummings & Cockerham, 2004; Grayson, Lubin, & Van Whitlock, 1995; Jang, Bergman, Schonfeld, & Molinari, 2006; Mitchell & Kemp, 2000; Samus et al., 2006; Watson, Garrett, Sloane, Gruber-Baldini, & Zimmerman, 2003; Watson et al., 2006). Some studies have focused on adjustment issues that followed relocation to the assisted living facility by exploring these residents' personal control (Drozdick, 2003) and place attachment (Cutchin, Owen, & Chang, 2003). Others have evaluated residents with dementia in assisted living facilities (González-Salvador et al., 2000; Gruber-Baldini, Boustani, Sloane, & Zimmerman, 2004; Gruber-Baldini, Zimmerman, Boustani, Watson, Williams, & Reed, 2005; Kopetz et al., 2000; Lyketsos, González-Salvador, Chin, Baker, Black, & Rabins, 2003; Rosenblatt et al., 2004; Samus et al., 2005; Zimmerman et al., 2005). Interestingly, many of the recent publications on mental health issues among residents of assisted living

facilities are based on the two large studies, the Collaborative Studies of Long-Term Care (CS-LTC) (see Watson et al., 2003) and the Maryland Assisted Living (MD-AL) study (see Rosenblatt et al., 2004).

Becker and colleagues (2002) stress mental health service needs for residents within assisted living facilities by introducing the study conducted by Cairl and colleagues (as cited in Becker et al., 2002), which reported that the staff of the facilities under-detected their residents' anxiety and depression. Although approximately one in five study participants reported symptoms of anxiety or depression, the staff's ratings for those same residents were significantly positive. Depression is a common problem among the elderly, and it appears to be more prevalent among people who utilize long-term care services compared to those who live in communities (Ball et al., 2000; Grayson et al., 1995). Watson and colleagues (2003) found that depression was a common and frequently untreated mental health problem, and it was related to an increased number of individuals placed in nursing homes and a higher death rate compared to non-depressed residents among their 2,078 study participants from 193 assisted living facilities across four states. The study revealed that depressed residents moved to nursing homes at 1.5 times the rate of non-depressed residents.

In order to detect and treat depression among residents in assisted living facilities, some researchers have begun to examine what factors may influence an assisted living resident to be depressed. Cummings and Cockerham (2004) identified the following factors as predictors of depression: (a) levels of life satisfaction, (b) functional impairment, (c) perceived social support, (d) satisfaction with current living situation, and (e) satisfaction with friends or social contacts. Watson and colleagues (2003) reported

social withdrawal, agitation, psychosis, and greater than five co-morbid medical conditions as common characteristics associated with residents with depression. Mitchell and Kemp (2000) found that the social component of residents' lives, such as a cohesive environment and participation in the facility's social activities, made significant contribution toward fewer symptoms of depression among their study participants. A recent study by Gruber-Baldini and colleagues (2005) revealed that severe cognitive impairment, pain, and behavioral symptoms were associated with depression among residents of assisted living facilities. Jang and colleagues (2006), in particular, identified both risk and protective factors for depressive symptoms among assisted living residents in their study. To my knowledge, those are the main studies that have investigated risk factors for depression among residents of assisted living facilities thus far; therefore, more studies are needed in this area.

In psychology literature, anger is known to relate to depression, and researchers have been exploring the link between depression and different types of anger (e.g., trait anger, state anger). For example, Moreno, Fuhrman, and Selby (1993) found that both dispositionally and situationally derived anger experiences increased with severity of depression with their 69 adult study participants (mean age of 35). Deffenbacher et al. (1996) examined correlations of trait anger and other symptoms among 880 college students and reported that trait anger was associated with depression. In addition, Kopper and Epperson (1996) investigated relations between the experience and expression of anger and depression by using 705 college students and found that anger suppression was related to depression. In general, the majority of anger related studies exclude the elderly from the sample populations; therefore, little is known about the relationship between



anger and depression among today's older adults. However, because of scarcity, any information that relates to an anger-depression link among the elderly need to be explored in order to understand the present study.

There are two studies that discussed a direct link between experience of anger and depression among older adults: one in a community setting (Johnson & Wilborn, 1991) and the other in a nursing home (Weitzman, Weitzman, & Levkoff, 2002). In regard to residents of assisted living facilities, Cohen et al. (2003) reported observing increased anger in their case study when the resident's mental health problem was insufficiently treated. Mitchell and Kemp (2000) found scores on Conflict, a subscale of a social climate measure from the Sheltered Care Environment Scale (SCES; Lemke & Moos, 1987), were positively correlated with depression. Although these two studies somewhat addressed negative consequences of anger, there are no studies that have been published that specifically evaluate the relationship between anger and depression among residents of assisted living facilities.

There are several factors that may lead an assisted living resident to experience anger. First, residents in assisted living facilities require some assistance for activities of daily living (ADLs). These can include eating, bathing, dressing, toileting, and transferring. Their instrumental activities of daily living (IADLs) also require assistance; these can include cooking, doing laundry, managing money, shopping, taking medication, and using the telephone (Cummings, 2002; Cummings & Cockerham, 2004). Receiving such assistance as well as living in a community setting can help diminish feelings of isolation. On the other hand, needing to receive help for ADLs and IADLs may also increase occasions where residents run into some conflicts with staff of the facility (i.e.,

aides, cleaning personnel), and as a result, they experience feelings of anger. This may be especially true when residents feel that care from the facility does not meet with their preferences and needs.

Secondly, due to assisted living facilities' community living style and the need for help with aforementioned ADLs and IADLs, residents of assisted living facilities are likely to lose independence and autonomy, as well as privacy, compared to those who reside in their private residences in the community. Although no resident is truly independent, a resident who perceives having little or no control over his or her everyday environment and choice of options may experience anger.

Thirdly, a view of the resident that relocation to a long-term care residence is a tragic event may lead to anger (Miller, 1999). If residents did not relocate voluntarily, they may experience resentment toward family members who could not support their wish to remain in their private residence, as well as feelings of anger toward themselves for requiring assistance with ADLs and IADLs. Similarly, a resident of an assisted living facility may experience relocation within one's facility due to physical deterioration or diminished cognitive status, thus creating a negative perspective and perhaps anger. This type of relocation includes residents who move from independent living facilities to assisted living facilities as well as residents of assisted living facilities who move from one part of the facility to another due to an increased need of care. This relocation frequently involves "downsizing" the resident's private space and personal belongings; therefore, it may bring up feelings of anger.

In sum, depression is a major problem among the elderly especially those who reside in long-term care facilities. In addition, Watson and colleagues (2003) revealed

that depression influences residents' rate of nursing home placement and mortality. So far, there are a handful of studies that have been published that investigate factors associated with depression among residents of assisted living facilities (Cummings & Cockerham, 2004; Gruber-Baldini et al., 2005; Jang et al., 2006; Mitchell & Kemp, 2000; Watson et al., 2003, 2006). Moreover, researchers have not explored enough about anger experiences with the elderly population, even though research has been identifying the relationship between anger and depression with younger populations. Furthermore, it became evident that many of the recent publications on mental health issues of assisted living residents are based on the two large studies: the Collaborative Studies of Long-Term Care (CS-LTC) (e.g., Gruber-Baldini et al., 2004, 2005; Watson et al., 2003) and the Maryland Assisted Living (MD-AL) study (e.g., Rao et al., 2005; Rosenblatt et al., 2004; Samus et al., 2006). Therefore, it is clear that more research is needed in order to efficiently detect and treat mental health problems of assisted living residents. To support this argument, there are several factors that may lead an assisted living resident to experience anger which include resident's perception in their levels of involvement in relocation, care from the facility, functional impairment, and personal control. Given the fact that depression is a major mental health problem and anger is known to relate to depression in other settings, it is necessary to investigate the link between anger and depression among residents of assisted living facilities.

#### Statement of the Problem

Despite the rapid growth of assisted living facilities in the United States, researchers have conducted a small number of studies thus far with residents in this

particular type of long-term care service. In general, people who utilize assisted living facilities require less intensive care than those who reside in nursing homes while having more functional impairment compared to community-dwelling elders. It appears that assisted living facilities function as a step between nursing home and private residence care, but it is doubtful that findings from nursing homes and community-dwelling elders are enough to predict facts about residents in assisted living facilities. According to the U.S. General Accounting Office (1999), 14 million older adults are projected to utilize assisted living facilities as their long-term care service option over the next 20 years. Therefore, it is important to obtain information about residents of assisted living facilities from the research conducted in assisted living facilities in order to effectively assist the specific needs to this population.

Among the psychological issues of the elderly, researchers have been exploring variables such as anxiety, depression, life satisfaction, quality of life (QOL), and dementia with residents in nursing homes and community-dwelling older adults, as well as residents of assisted living facilities. Although anger was not the main focus of the studies, two studies have documented the problems resulting from anger with samples of the elderly in assisted living facilities (Cohen et al., 2003; Mitchell & Kemp, 2000). However, no one has yet published a study that specifically evaluates anger among residents in assisted living facilities, while such information is currently available in other settings. Since anger is known to relate to depression and depression is one of the major problems among the elderly in long-term care services, it is critical to investigate the link between these two variables among residents of assisted living facilities.

If anger is found to be a significant issue among residents of assisted living

facilities, this finding will encourage the implementation of appropriate interventions through both individual and group psychotherapy. For example, researchers have demonstrated that interpersonal psychotherapy (IPT), problem-solving therapy (PST), and cognitive behavioral therapy (CBT) are effective for the elderly individuals with depression and interpersonal conflicts (e.g., Arean et al., 1993; Coon, Rider, Gallagher-Thompson, & Thompson, 1999; Hinrichsen, 1999). In addition, Miller (1999) states personal-control enhancing interventions are effective for improving physical, psychological, and social well-being of residents in long-term care services. Increasing knowledge of mental and emotional health of residents in assisted living facilities can help reduce obstacles that may influence residents' level of functioning; as a result, residents could maximize their independence, autonomy and privacy.

#### Purpose of the Study

The main purpose of the study was to investigate the relation between anger and depression among residents of assisted living facilities. Because a relationship between anger and depression has been reported among various studies with younger populations (e.g., Biaggio & Godwin, 1987; Deffenbacher et al., 1996; Kopper & Epperson, 1996; Moreno et al., 1993; Riley, Treiber, & Woods, 1989), there is a strong possibility that such evidence can also be found among residents of assisted living facilities. Another purpose of the study was to assess the four predictors of the anger experience: functional impairment, perceived decisional involvement in relocation to an assisted living facility, perceived care from an assisted living facility, and personal control.

### Significance of the Study

Assisted living facilities are the most rapidly growing long-term care service for today's older adults with an annual growth of 15 to 20% (Chapin & Dobbs-Kepper, 2001; Fonda, Clipp, & Maddox, 2002). The number of older adults who utilize this type of long-term care service is anticipated to increase substantially as the baby boom generation ages into later life. The U.S. General Accounting Office (1999) projected that 14 million older adults will need long-term care services over the next 20 years; therefore, there is a significant need for research that addresses issues specific to this population. For example, among mental health problems with residents of assisted living facilities, anxiety and depression are reported as the most common problems (Ball et al., 2000). Furthermore, depression is identified as a risk factor for a higher rate of discharge to nursing homes as well as an increased mortality rate (Watson et al., 2003). It is critical to pay attention to depression among residents of assisted living facilities. However, there are only a handful of studies so far that directly investigate predicting factors of depression among assisted living residents (Cummings & Cockerham, 2004; Gruber-Baldini et al., 2005; Jang et al., 2006; Mitchell & Kemp, 2000; Watson et al., 2003, 2006). No study has yet been published that investigates the amount of anger experienced among residents of assisted living facilities, even though anger is known to be associated with depression with younger populations.

Results of this study may reveal similar findings with existing studies that are conducted with non-assisted living residents (i.e., correlation between anger and depression), which may have a great impact on many residents of assisted living facilities. First, most of the recent publications are based on the data from two large studies, the

Collaborative Studies of Long-Term Care (CS-LTC) (see Watson et al., 2003) and the Maryland Assisted Living (MD-AL) study (see Rosenblatt et al., 2004). It is helpful to have more data specifically gathered for assisted living facilities. Second, if anger is found to relate to depression with residents of assisted living facilities, findings could influence the development of a program that targets residents' feelings of anger and consequently reduce the number of residents who suffer from depression. Third, both residents and staff of assisted living facilities may not be aware of the negative impact of psychological health on the resident's increase in functional impairment (Gottesman, Peskin, Kennedy, & Mossey, 1991). Revealing the relationship between anger and functional impairment may promote utilization of effective psychological interventions currently used in other settings. Fourth, findings may not only help residents successfully remain in assisted living facilities and postpone their move to nursing homes but could also allow federal government to cut the cost of long-term care services provided through Medicaid.

### Research Questions

The present study was designed to examine whether or not anger would be related to an increase in depression experienced by residents of assisted living facilities. If the outcome of this study suggests that anger is an issue among residents of assisted living facilities, it will be helpful to know who is more at risk. Therefore, there are two major questions that I would like to address:

1. How are anger and depression related among the residents of assisted living facilities?

2. What factors contribute to the experience of anger? How well do the four variables (perceived decisional involvement in relocation to an assisted living facility, perceived care from an assisted living facility, level of functional impairment, and personal control) predict the resident's experience of anger?

### Research Hypotheses

#### *Hypothesis 1*

There is a relationship between anger measured by the Anger-Hostility subscale of the Profile of Mood States (POMS; McNair, Lorr, & Droppleman, 1992) and depression measured by the Geriatric Depression Scale Short Form (GDS-SF; Sheikh & Yesavage, 1986).

As the link between anger and depression has been reported by other researchers with younger populations, a resident with a higher score on the POMS Anger-Hostility scale may report more depression than others with lower scores on the POMS Anger-Hostility scale. It is expected that as the score of the Anger-Hostility scale increases, the score on the GDS-SF will also increase.

#### *Hypothesis 2*

Anger may be able to be predicted by four major variables: perceived decisional involvement in relocation to an assisted living facility, level of functional impairment, perceived care from an assisted living facility, and personal control.

Hawes, Phillips, and Rose (2000) found that 73% of the assisted living residents from a national survey ( $N = 192,046$ ) made the decision to relocate to an assisted living



facility by receiving help from others; however, at the same time, 25% of the study participants indicated that they had little or no control over the decision. Therefore, residents' perception of their involvement in making the decision to relocate to an assisted living facility may influence the amount of anger experienced by these residents. In addition, three predictors of anger emerged through informal observation of residents as well as through research in a literature review: levels of assistance needed in ADLs and IADLs functions, residents' satisfaction of the quality of care from a facility, and how much authority residents actually have and/or expect to have in their environment. Thus, it is anticipated that perceived decisional involvement in relocation to an assisted living facility, level of functional impairment, perceived care from an assisted living facility, and personal control measured by the discrepancy between desired and actual personal control would each account for a significant amount of variance in residents' experience of anger.

### Definition of Terms

#### *Anger*

Anger is defined as “a strong emotion or experiential state that occurs in response to a real or imagined frustration, threat, or injustice and is accompanied by cognitions related to the desire to terminate the negative stimulus” (Biaggio & Maiuro, 1985, p.103). In this study, anger will be measured by the Anger-Hostility subscale of the Profile of Mood States (POMS; McNair et al., 1992).

### *Depression*

A mood disorder characterized by sadness and dejection, negative thoughts (i.e., hopelessness), decrease or loss of interest in life, and physical symptoms such as sleep disturbance, loss of appetite, loss of sexual arousal, and fatigue. In this study, depression will be measured by the Geriatric Depression Scale Short Form (GDS-SF; Sheikh & Yesavage, 1986).

### *Functional Impairment*

In the present study, functional impairment refers to how much care is needed by the resident of an assisted living facility, and this information will be obtained from reviewing the resident's chart. Functional impairment will be measured by the total score reported on the assisted living facility's Functional Assessment Scale. This form includes the following nine sections: (a) mentation; (b) physical health; (c) medications; (d) nutritious status; (e) mobility; (f) dressing, bathing, grooming, and hygiene; (g) toileting; (h) housekeeping; and (i) emotional status.

### *Perceived Care*

In the present study, perceived care refers to a resident's perception toward the care provided by the assisted living facility. Participants will be asked to identify how satisfied they are with the care provided by the assisted living facility on a scale of one to ten. A higher score indicates stronger satisfaction. This question will be included in the Demographic Questionnaire form.

### *Perceived Decisional Involvement*

In this study, perceived decisional involvement refers to a resident's perception toward one's involvement in making the decision to relocate to an assisted living facility. Perceived decisional involvement will be measured by adopting Davidson and O'Connor's (1990) Perceived Control measure, which consists of the following four items: "Was it your decision to come live in an assisted living facility?" "Did others consult with you much about the decision to come stay in an assisted living facility?" "Do you feel that you influenced the decision to come here?" and "How much input would you say that you had in the decision to come live in an assisted living facility?" This measure uses a 3-point scale. The range of total score is 4 to 12 and higher scores indicate greater involvement in the decision making. These four questions will be included in the Demographic Questionnaire form.

### *Personal Control*

In this study, personal control refers to perceptions that one has mastery or authority over his or her environment. Personal control will be measured by the discrepancy between actual and desired control, which is calculated by summing the values of the difference between scores on the linked items on Part I (Desire) and Part II (Expectancy) of the Desired Control-Short Form (Reid & Ziegler, 1981).

### Limitations

There were some limitations in this study. One of these limitations was that the study utilized self-report measures and therefore may not be bias free. In addition, some

of the participants were legally blind and had to have the questionnaire orally presented to them. Having to respond verbally may have produced different outcomes compared to those who self-administered and completed the measure. Moreover, some of the questions in the Desired Control-Short Form Part II appeared to be somewhat confusing and often required further explanations. Thus, answers obtained in this study may not have accurately captured participants' responses.

Another limitation was that the results obtained from this study cannot be generalized to all residents of assisted living facilities. Only those who have met with the study's screening criteria for cognitive functioning were included in the study. Although results are likely to be generalized to many individuals including residents with mild to moderate cognitive impairment, results may not apply to those with a severe level of cognitive impairment.

## CHAPTER II

### Review of Related Literature

Chapter II provides a review of the literature relevant for the present study. This chapter begins with a discussion of the meaning of anger. The second section provides an overview of studies that have examined the mental health issues of residents of assisted living facilities: (a) quality of life (QOL), (b) depression, and (c) social networks. The third section reports information currently available about anger and the elderly. The fourth section discusses studies that have been conducted to examine the relation of anger and depression with non-assisted living populations. The fifth section addresses personal control and the elderly.

### Anger Defined

Anger is one of the human emotions. It is normal to occasionally become angry; however, intense and frequent anger can become problematic. In literature discussing anger, a considerable amount of attention has been devoted to the experience and the expression of anger. The experience of anger and the expression of anger are two independent concepts (Spielberger et al., 1985). According to Nunn and Thomas (1999), anger is an emotional state; therefore, anger expression is understood as behavioral response to anger. However, the definition of anger is inconsistent among anger studies and the terms “anger” and “hostility” or “aggression” are often used interchangeably (Spielberger & Sydeman, 1994). The reasons that were suggested in Chapter I for an

assisted living resident to possibly experience anger are situational rather than dispositional. Therefore, in the present study, the definition of anger is adopted from Biaggio and Maiuro's (1985) definition of anger as "a strong emotion or experiential state that occurs in response to a real or imagined frustration, threat, or injustice and is accompanied by cognitions related to the desire to terminate the negative stimulus" (p. 103), and anger will be measured with the Anger-Hostility scale of the POMS (McNair et al., 1992).

### Mental Health Issues of Residents of Assisted Living Facilities

The research that investigated psychological issues of residents of assisted living facilities explored issues, such as quality of life (QOL), depression, life satisfaction, and social network. Two types of studies are found with the research focused on QOL: identifying the concept of QOL (e.g., Ball et al., 2000; Kane, 2001) and examining QOL measures with residents of assisted living facilities (González-Salvador et al., 2000; Kuhn, Kasayka, & Lechner, 2002; Lyketsos et al., 2003; Mitchell & Kemp, 2000; Samus et al., 2005, 2006; Zimmerman et al., 2005). Among the studies examining depression, Grayson et al. (1995) compared assisted living residents with community-dwelling elders, Lawton, De Voe, and Parmelee (1995) and Gruber-Baldini and colleagues (2005) compared assisted living residents with nursing home residents, while others investigated depression within assisted living facilities (Cuijpers & Van Lammeren, 1999; Cummings, 2002; Cummings & Cockerham, 2004; Jang et al., 2006; Pope, Watkins, Evans, & Hess, 2006; Watson et al., 2003, 2006). In addition to depression, Cummings (2002), Cummings and Cockerham (2004), and Mitchell and Kemp (2000) also addressed life

satisfaction in their studies. Tremethick (2001) explored a probable difference in social networks between residents of assisted living facilities and community-dwelling elders.

### Quality of Life (QOL)

Kane (2001) presented her view of what makes a good QOL in long-term care settings by identifying the following 11 domains: (a) sense of safety, security, and order; (b) physical comfort; (c) enjoyment; (d) meaningful activity; (e) relationships; (f) functional competence; (g) dignity; (h) privacy; (i) individuality; (j) autonomy/choice; and (k) spiritual well-being. Kane defines long-term care as “any personal care and assistance that an individual might receive on a long-term basis because of a disability or chronic illness that limits his or her ability to function” (p. 294); therefore, these 11 domains are applicable to residents of assisted living facilities. Kane argues that the QOL domains that she views as essential are currently minimized because the long-term care model, based on nursing home care, has been identifying QOL as physical comfort and safety. She stresses the importance of having a consumer-centered emphasis on QOL because the best possible QOL could include more than physical health and safety, as she suggested many more domains.

Ball and colleagues (2000) conducted a qualitative study with 55 residents from 17 assisted living facilities in Georgia and explored residents' views of QOL. The authors reported that 54% of the participants reported depression as the most common mental health problems, followed by pain, high blood pressure, and anxiety. Two-thirds of the participants reported having little or no control over the decision to relocate into an assisted living facility, while the remaining one third relocated by their own decision.

From the interview data, the authors identified the following 14 categories for the determinant of QOL: (a) psychological well-being; (b) independence and autonomy; (c) social relationships and interactions; (d) meaningful activities; (e) care from facility; (f) comfort; (g) cognitive functioning / memory; (h) sleep; (i) food; (j) connectedness to community outside facility; (k) physical functioning; (l) religion / spirituality; (m) physical environment; and (n) safety and security. The authors state that participants valued independence and autonomy, which is consistent with other research in the assisted living settings. They also found that self-care related independence was particularly valued, and residents experienced satisfaction from controlling their day-to-day tasks. The authors suggest that assisted living facilities need to understand residents' definition of QOL and to consider how well the service of the facility and a resident's needs and preferences match.

Mitchell and Kemp (2000) selected four QOL variables and assessed their predicting abilities with three QOL measures using 201 residents from 55 assisted living facilities in California. The following four variables were selected from the literature review: (a) demographics and health status, (b) social involvement, (c) characteristic of the facility, and (d) the social climate of the facility. The three QOL measures were the Life Satisfaction Index A (LSIA; Neugarten, Havighurst, & Tobin, 1961), the Older Adult Health and Mood Questionnaire (OAHMQ; Kemp & Adams, 1995), and the Facility Satisfaction Questionnaire, which were created by the authors for their study.

One of the significant findings of the study was the strong existence of depression among their study participants: 12% were identified as experiencing probable major depression and 41% were considered exhibiting possible clinically significant depressive



symptoms. The bivariate correlations and ANOVAs between four QOL variables and three QOL measures revealed that the social climate of the facility (cohesion, conflict, and independence) had the strongest zero-ordered correlations. In addition, social activities and family contact were significantly correlated with QOL measures. The stepwise regression analysis found that cohesion was the strongest predictor for the three QOL measures. Based on the findings, the authors concluded that residents' QOL would be improved by creating a cohesive social environment and encouraging participation in social activities.

Studies by Ball and colleagues (2000) and Mitchell and Kemp (2000) examined QOL among cognitively intact assisted living residents; whereas, other studies explored QOL among residents with dementia. González-Salvador and colleagues (2000) evaluated QOL among dementia residents of a long-term care in Maryland using 56 assisted living residents and 64 residents of a skilled nurse facility. In this study, authors utilized dementia specific QOL measure, the Alzheimer Disease Related Quality of Life (ADRQL; Rabins, Kasper, Kleinman, Black, & Patrick, 1999), and examined the relationship between QOL and several variables. Results indicated that worse orientation, greater physical dependency, depression, and anxiolytic treatment were associated with lower scores on the ADRQL in both univariate and multivariate analyses. The study also reported that depression and orientation accounted for 24% of the variance in assisted living residents' scores on the ADROL.

Two years later from González-Salvador and colleagues' study (2000), Lyketsos and colleagues (2003) conducted a follow-up study to examine whether or not there would be a change in QOL among these residents over time. The authors were able to

follow-up 80% of the original study participants and reported small, but statistically significant decline in mean QOL scores. This study, however, also revealed that nearly 50% of the participants' QOL scores were either unchanged or even higher than two years ago. Therefore, the authors concluded that change in QOL in dementia residents of assisted living facilities is a complex phenomenon and further research is needed.

Kuhn and colleagues (2002) examined QOL among 131 residents with dementia from 10 assisted living facilities in Wisconsin. In this study, authors used the observational method known as Dementia Care Mapping (DCM; Bradford Dementia Group, 1997). One of the main findings was that it is feasible to conduct an observational study with dementia residents, but size of the facility seems to influence the outcome of the study. In general, residents in large assisted living facilities were found with better QOL compared to those who were from small, dementia-specific sites.

Based on the data from the Maryland Assisted Living Study, Samus and colleagues (2005) examined the relationship between neuropsychiatric symptoms and environmental characteristics and QOL among 134 residents with dementia from 22 assisted living facilities. The study also used the ADRQL (Rabins et al., 1999) to measure QOL. A stepwise regression analysis revealed that four neuropsychiatric symptoms (agitation or aggression, depression, apathy, and irritability) were significant predictors of QOL and accounted for 29% of the variance. This study did not find significant association between QOL and the care environment.

Using the same Maryland Assisted Living Study, Samus and colleagues (2006) explored the correlates of caregiver-rated QOL among 198 residents from 22 assisted living facilities in Maryland. The authors examined the relationship between 14 variables

(i.e., cognition, physical health, and dementia) and the scores of the ADRQL (Rabins et al., 1999). A stepwise multivariate analysis revealed that the presence of non-mood neuropsychiatric symptoms (delusions, hallucinations, agitation or aggression, euphoria, apathy, disinhibition, and aberrant motor behavior) were the strongest predictor of QOL score, explaining 37.2% of the variance. Physical dependency measured as the Psychogeriatric Dependency Rating Scale-Physical Dependency subscale (PGDRS-P; Wilkinson & Graham-White, 1980), being a widower, and cognition measured as the MMSE (Folstein, Folstein, & McHugh, 1975) accounted for additional 6.1%, 3.4%, 1.7%, and 0.7%, respectively. Contrary to the findings in the study by Kuhn and colleagues (2002), Samus and colleagues (2005, 2006) did not find facility size as a predictor of QOL.

QOL for residents with dementia is also explored in the other large study, the Collaborative Studies of Long-Term Care (CS-LTC) Dementia Care study. Maslow and Heck (2005) report that the CS-LTC Dementia Care study used the Dementia Care Mapping (DCM; Bradford Dementia Group, 1997) to measure QOL and included nursing home residents as well as residents of assisted living facilities for comparison. Detailed discussion is presented in the work of Zimmerman and colleagues (2005).

Zimmerman and colleagues (2005) examined dementia care and QOL in 35 residential care/assisted living and 10 nursing homes in four states. A total of 421 residents with dementia participated in the study. QOL was assessed by the resident's self report, direct care provider's report, and through observation. The results indicated that the care provider report and observation found a relationship between QOL and facility type. Specifically, care providers of the residents in assisted living facilities rated QOL

higher than those in nursing homes. Similar to Lyketsos and colleagues' study (2003), this study also evaluated QOL change over time. Although this study used a different QOL measure, modified Quality of Life-Alzheimer's Disease (QOL-AD; Edelman, Fulton, Khun, & Chang, 2005), it also found small overall change in mean scores of the QOL-AD. Furthermore, improvements of the score were also reported among 36% of the residents six-month later. The results also report that residents perceived QOL as higher when staff was more involved in care planning and hopeful about their ability. On the other hand, residents perceived QOL as lower when they felt un-groomed.

### Depression

Grayson and colleagues (1995) compared depression among assisted living residents and community-dwelling elderly. A total of 453 (324 female and 129 male) older adults between the ages of 60 to 98 years old participated in this study. The 351 participants were community-dwelling elders, and 102 participants were assisted living residents. There was a significant mean age difference between community-dwelling elders (the mean age of 79.2 and *SD* of 6.6) and assisted living participants (the mean age of 72.2 and *SD* of 6.7),  $t(451) = 9.26, p < .001$ . Depression was measured by using either the trait or the state form of the Depression Adjective Check Lists (DACL; Lubin, 1981, 1994), which consists of four lists (A, B, C, and D).

Four separate analyses of covariance were conducted with age as the covariate, and the following four variables as the dependent variable: sex (male or female), version of the DACL (trait or state), section of DACL list (A, B, C, and D), and living arrangement (community or assisted living). The results of this study indicated that sex

had no effect on depression whereas living arrangement and version of the DACL showed significant main effects. Participants from assisted living facilities had higher means on the DACL than community-dwelling elders, and the state form means were higher than the means of the trait form. Therefore, the authors concluded that participants of this study reported experiencing a higher level of depression on any particular day than they regularly felt whether they lived in the community or in assisted living facilities. However, participants from assisted living facilities reported greater levels of depression compared to community-dwelling elders.

Lawton and colleagues (1995) compared depressed and non-depressed residents of a congregate housing and a nursing home regarding the relation between events and affect in their daily lives. Participants were recruited from a large geriatric center, mainly serving Jewish clients in Philadelphia; 43 residents were from a nursing home and 36 residents were from a congregate housing participated in this study. The mean age of the 79 participants was 82.8 years old ( $SD = 5.88$ ). Participants completed the Philadelphia Geriatric Center Positive Affect and Negative Affect rating scale and reported events that they had participated in for 30 consecutive days.

The result of this study revealed that more events inducing negative affects ( $M = 13.88$ ) were reported by the nursing home residents than residents of the congregate housing ( $M = 8.83$ ),  $t(76) = 2.48$ ,  $p < .05$ . The number of health events that were bringing up negative affects significantly increased as the level of depression increased in both types of facilities. However, health related events were also reported as bringing up positive affects among participants with major depression in both the nursing home and the congregate housing. Among residents with minor depression, the most frequently

reported events with positive affects in the nursing home were family related events and group activities, and the most frequently reported events with positive affects in the congregate housing were family related events. Non-depressed residents in the nursing home reported family related events as the most frequently occurring events inducing positive affects; whereas, non-depressed residents in the congregate housing reported group activities as events that brought up the most frequent positive affects. The authors concluded that residents' mood related to the quality of their daily life events regardless of their type of residence (nursing home or congregate housing) and diagnosis (major depression, minor depression, or non-depressed).

Cuijpers and Van Lammeren (1999) investigated the relationship between chronic illness and depression among older people living in residential homes in Netherlands. This study included 424 (333 female and 91 male) residents from 10 residential homes. The mean age of the participants was 84.5 years, and 74.3% were widowed. The authors measured depression with the Dutch version of the Yesavage et al.'s (1983) Geriatric Depression Scale (Kok, Heeren, & Hemert, 1993) and used the mental health subscale of the Medical Outcomes Study Short Form-20 (MOS-SF20-MH; Stewart, Hays, & Ware, 1988) to assess feelings of depression, anxiety, and psychological well-being. Information about participants' chronic illnesses was gathered by contacting the staff of the residential homes. Residents had to have at least three months of the particular condition to categorize it as chronic. The following chronic illnesses were reported in this study: lung disease, cardiac disease, peripheral atherosclerosis, diabetes mellitus, stroke, rheumatoid arthritis, and cancer.

The authors examined the following five risk factors for depression: (a) functional impairment, (b) history of depression, (c) pain, (d) life events, and (e) social support. Functional impairment was measured by asking a resident about his or hers limitations in the seven instrumental activities of daily living. Pain was measured by using one question from the MOS-SF20. History of depression was assessed by asking a resident whether or not he or she had experienced some of the questionnaire items of the GDS earlier in his or her life. Life events were assessed by adopting eight items from the Questionnaire Recent Life Events (Schut, 1992). Social support was assessed by the Interaction section of the Social Support List (SSL12-I; Van Eijk, Kempen, & Sonderen, 1994). The result of this study demonstrated that all five risk factors were significant predictors of scores on the GDS. In addition, four of the risk factors, excluding functional impairment, were significant predictors of scores on the MOS-SF20-MH scale. The only modest relationship was found between chronic illness and depression; whereas, the other five risk factors appeared to be much stronger predictors of depression and psychological distress.

Cummings (2002) conducted a study with 57 residents of an assisted living facility to investigate predictors of the residents' psychological well-being. Participants' age ranged from 65 to 100 years old, and 51.8% were older than 86 years old. In this study, the author measured psychological well-being through depression and life satisfaction. Depression was assessed by the Center for Epidemiological Study Depression (CES-D) Scale (Radloff, 1977), and life satisfaction was assessed by the Life Satisfaction Index Z (LSI-Z; Wood, Whlie, & Sheafor, 1969). Participants also provided

information about their health, functional impairment, satisfaction of social contacts, satisfaction of living situations, and perceived social support.

The author found a significant relationship between depression and life satisfaction ( $r = -.544, p < .01$ ). As the author hypothesized, both functional impairment ( $r = .423$ ) and perceived social support ( $r = -.45$ ) were significantly correlated with depression ( $p < .01$ ). Perceived social support was also found to have the strongest correlation with life satisfaction among the predicting variables ( $r = .661, p < .01$ ), and functional impairment had a significant correlation with life satisfaction ( $r = -.432, p < .01$ ). Therefore, Cummings stated that it is recommended to enhance the relationship between staff and residents and among residents themselves to increase their level of perceived support because it ultimately influences a resident's psychological well-being.

Watson and colleagues (2003) conducted a study that investigated depression in assisted living facilities with a total of 2,078 residents from 193 assisted living facilities in the following four states: Florida, Maryland, New Jersey, and North Carolina. These residents aged between 65 and 112 years old, and 52% of them were 85 years or older. Seventy-six percent of the residents were females, and most of the residents reported multiple medical conditions. Thirty-one percent of the residents required at least three ADLs, and over 50% had some level of cognitive impairment. The authors had the following three purposes for this study: (a) to explore the prevalence of depression and depressive symptoms, (b) to identify characteristics of residents with depression, and (c) to investigate the relationship between depression and mortality and the rate of nursing home placement. Depression was measured by the Cornell Scale for Depression in



Dementia (CSDD; Alexopoulos, Abrams, Young, & Shamoian, 1988), and a resident with a score of 7 and greater was considered depressed.

The result of this study revealed that 13% of the residents were depressed while only 18% of them had been treated with antidepressants. In addition, 5% of these depressed residents reported the CSDD score greater than 12 indicating more severe depression. Depressed residents exhibited symptoms such as an anxious or sad expression, rumination, worrying, sad voices, and tearfulness. However, it is noteworthy that some of these symptoms were also reported by non-depressed residents. Depressed residents were likely to move into nursing homes 1.5 times more than non-depressed residents. Moreover, depressed residents had a higher rate of mortality, especially those who had the CSDD score greater than twelve. The authors concluded that early detection and appropriate treatment for depression is important to reduce residents' suffering and to promote their ability to remain successfully in assisted living facilities.

Cummings and Cockerham (2004) examined levels of depression and life satisfaction among 145 residents from two assisted living facilities. This study's participants completed the CES-D (Radloff, 1977), the LSI-Z (Wood et al., 1969), as well as a modified version of the Perceived Social Support Scale (Cutrona, Russell, & Rose, 1986), and answered questions related to their functional status, overall physical health, and satisfaction with friendships and social contacts.

The authors found a significant relationship between the CES-D and the LSI-Z ( $r = -.524, p < .001$ ). In addition, this study demonstrated significant correlations between depression and perceived social support ( $r = -.442$ ), satisfaction with social contacts ( $r = -.363$ ), and functional impairment ( $r = .317$ ) at  $p < .001$  level. Life satisfaction was

correlated with perceived social support ( $r = .53$ ), functional impairment ( $r = -.333$ ), satisfaction with current living condition ( $r = .326$ ), current health ( $r = .326$ ), and satisfaction with social contacts ( $r = .317$ ) at  $p < .001$  level. The authors urged assisted living facility administrators and staff to recognize symptoms of mental health disorders and to connect residents with appropriate services. The authors concluded that when assessing depression and life satisfaction among residents of assisted living facilities, three functions should be included: (a) physical, (b) social, and (c) psychosocial.

More recently, Gruber-Baldini and colleagues (2005) reported the prevalence and characteristics associated with depression among residents with dementia in assisted living/residential care and nursing homes. This study's data was drawn from the participants in the CS-LTC Dementia Care project, and the sample consisted of 347 residents from 10 nursing homes and 35 assisted living and residential care facilities in four states. The participants' mean age was 84.5 ( $SD = 7.1$ ). Each resident's depression was measured by a supervisory staff, and the study used items on the Cornell Scale for Depression in Dementia (CSDD; Alexopoulos et al., 1988) with a cut-point of  $\geq$  seven.

The study indicated that 24% of assisted living/residential care residents and 27% of nursing home residents were depressed based on the CSDD scores. The results also found that depression was more common among residents with severe dementia, behavioral symptoms, those with pain, and residents in for-profit nursing homes. Although the study revealed the high prevalence of depression among these residents, only 36.8% of the depressed residents had the involvement of mental health professionals in their care plan. The authors suggested further improvement of staff training for depression and involvement of mental health professionals in long-term care.

Using similar measures and methodology to the study by Gruber-Baldini and colleagues (2005), Watson and colleagues (2006) reported the prevalence of depression and its characteristics and treatment among residents in assisted living facilities in Maryland. This study's participants were from the Maryland Assisted Living Study (MD-AL) and consisted of 196 residents from 22 assisted living facilities ( $M = 85.6$ ,  $SD = 8.2$ ). Depression was measured as the CSDD using a cut-point of  $\geq$  seven. Gruber-Baldini's study relied on nursing supervisors for assessment; whereas, this study employed geriatric psychiatry professionals. In addition to the CSDD, the General Medical Health Rating (GMHR; Lyketsos et al., 1999) was used to measure medical comorbidity, and the Psychogeriatric Dependency Rating Scale-physical subscale (PGDRS; Wilkinson & Graham-White, 1980) was used to measure the ADL level.

The authors found that 24% of the sample was depressed. Depression was associated with medical comorbidity and a greater need for ADL assistance. Among those who were depressed ( $n = 47$ ), 20 residents were receiving antidepressant medication, indicating under-treatment. Moreover, only 17% of depressed residents had regular source of care from mental health specialists; whereas, 60% of depressed residents had no such care from their facilities. Residents with depression in larger facilities appeared to be receiving more antidepressant medication compared to depressed residents in smaller facilities. The authors concluded that depression is common, under-treated, and associated with physical dependency. They also suggested improved detection and treatment for depression, as well as implementation of on-site mental health management.

The study conducted by Jang and colleagues (2006), using 150 residents from 17 assisted living facilities in Florida, examined the effects of physical health constraints (chronic conditions, functional disability, and self-rated health) and psychosocial resources (social network, sense of mastery, religiosity, and attitude toward aging) on depressive symptoms. The participants completed the GDS-SF (Sheikh & Yesavage, 1986). More than 27% of the study sample was considered to be experiencing probable depression based on the cut-off score of five. Among physical health constraints, functional disability and self-rated health were found to be significant predictors of depressive symptoms. Among psychosocial resources, sense of mastery, religiosity, and attitude toward aging were found to be significant predictors of depressive symptoms. In addition, the study revealed psychosocial resources' protective factors for depressive symptoms.

Pope and colleagues (2006) also investigated depression among 24 residents from six assisted living facilities in South Carolina. Unlike other depression studies, the authors mainly used journal writing to explore depression. In addition to completing the GDS-SF (Sheikh & Yesavage, 1986) and the Meaning Survey (MS; Pargament, 1999), each participant was interviewed before, during, and after he or she participated in the journal writing. Based on the GDS-SF scores, 33.3% of the participants were found to be depressed. Several themes emerged from the journal, such as: physical environment, emotional well-being, meaningful social activities, and physical health. Although journal keeping was not favored by everyone, 9 out of 24 stated that they would continue to writing after their study participation. The findings inferred that providing meaningful social activities and support from staff members contribute help for residents to cope with

difficult emotions. Using qualitative measures in the study provided useful insights into depression among residents of assisted living.

### Social Network

Tremethick (2001) investigated whether or not a significant difference in social networks exists between residents of assisted living facilities and community-dwelling elders. The author used the Lubben Social Network Scale (Lubben, 1988) to measure a social network in this study. A total of 160 people who were older than 65 years of age participated in this study. This study included 80 residents from nine assisted living facilities and 80 community-dwelling elders using home-health care.

The result of this study indicated that assisted living facilities had twice as many individuals who reported scores of the social network in the “isolation” range than the community-dwelling elders. The mean scores of the social network scale for the assisted living residents was 25.44, indicating “high risk for isolation;” whereas, the mean scores for the community-dwelling elders was 28.3, indicating “moderate risk for isolation.” The study demonstrated that living in an assisted living facility surrounded by people does not always mean that the resident has a social network. In fact, the author reported that 41% of this study’s assisted living participants perceived themselves as living alone. Therefore, the author stresses the importance of the staff’s intervention in social network development in order to improve the psychological well-being of residents in assisted living facilities.

### Anger Related Studies in the Elderly

A literature review produced two studies that discussed the link between anger and depression among the elderly (Johnson & Wilborn, 1991; Weitzman et al., 2002) and two other studies that mentioned anger in the assisted living setting (Cohen et al., 2003; Mitchell & Kemp, 2000). Johnson and Wilborn focused on community-dwelling elders in their study, and Weitzman et al. explored nursing home residents.

Johnson and Wilborn (1991) investigated the link between anger and depression in a group of women who were more than 65 years old. The 17 women (65 to 95 years old,  $M = 76.2$  years old) who were recruited from senior citizen centers and retirement centers participated in the total of six group counseling sessions that targeted awareness of feelings of anger, expressions of anger and levels of depression. The authors used an additional 17 women (65 to 85 years old,  $M = 74$  years old) as control group members who were matched to the treatment group members on the following criterion: age, marital status, educational level, occupation, residence, and perceived health. Depression was measured with the Beck Depression Inventory (BDI; Beck, Ward, Mendelson, Mock, & Erbaugh, 1961), and anger was assessed by the Anger Self-Report Scale (ASR; Zelin, Adler, & Myerson, 1972). Treatment group members completed the BDI and the SAR at pre- and post-treatment as well as one month after the treatment. Control group members completed the BDI and the SAR only once, and these scores were then compared to the treatment group's post-treatment results.

A *t*-test between treatment and control group's score on the BDI revealed that the treatment group had a significantly higher mean score ( $M = 12.76$ ,  $SD = 4.12$ ) than that of the control group ( $M = 8.35$ ,  $SD = 5.91$ ). No significant difference was reported between

post-treatment and one-month follow-up on the control group's BDI scores. In terms of the ASR scores, there was no significant difference between the two groups, as well as between post-treatment and one-month follow-up of the treatment group. In this study, conducting a short-term group counseling session focusing on anger awareness did not demonstrate a statistically significant increase in anger expression nor decrease in depression. However, it is noteworthy that the baseline mean scores on depression indicated that the members of both groups were somewhat depressed. The authors suggested a replication of study with using a long-term group and recommended an experimental study design using pre- and post-test; they believed the link between anger expression and depression seem worthwhile to further explore.

Weitzman and colleagues (2002) investigated interpersonal conflicts and anger experienced among women in nursing homes in Massachusetts. This study used administrators from 25 nursing homes, and the authors conducted phone interviews asking about the following: types of health promotion programming available at the nursing home, whether or not the facility offers women's health programming, how conflicts are managed in the facility, and the most helpful conflict resolution training that have been provided.

Health promotion programming reported by the administrators included programs such as exercise groups, nutrition/weight management, medication management, and diabetes prevention and control; however, none of the administrators reported any mental health programs. Ninety percent of the administrators reported depression as the most needed area of attention of women's health. In addition, 80% of the administrators stated that interpersonal conflicts are concerning issues. These conflicts included problems with

female roommates, problems between a resident and his or her family member, problems between a resident's family member and staff, and problems among a resident's family members. The administrators reported that both nursing staff and social workers were involved with managing conflicts. To address reported conflicts, administrators suggested several ideas: provide conflict resolution skills for residents, provide mediation training for staff, provide information about long-term care for a resident's family, and provide mediation service for a resident with family conflicts. Based on the interview data, the authors concluded that conflicts with roommates are particularly problematic, and there is a greater need for developing a program to help residents resolve such conflicts. The authors also suggested that depression could be reduced by helping women in nursing homes to resolve conflict and anger in constructive ways.

Cohen and colleagues (2003) reported observing increased anger when the resident's mental health problem was insufficiently treated. This was a case study of the resident who was an 84-year-old widow. The resident moved to an assisted living facility in another state to be near her daughter, but she was traumatized by the move and became increasingly angry, verbally abusive, and difficult. The resident's unpleasant behaviors made the staff of the facility decrease the number of contacts that they had with her, and she later began to exhibit delusional thinking. Fortunately, the resident's daughter contacted a physician who then contacted the authors, who were geriatric psychiatrists, and the resident received proper treatment including a dementia work-up and an adjustment in medication. The authors reported that the resident became less delusional and less angry as she continued her treatment. In addition, the staff of the facility and a social worker began to work together to provide close supervision for the resident.



Lastly, one of the QOL studies conducted by Mitchell and Kemp (2000), which was discussed earlier in another section, found scores on Conflict, one of the seven subscales of the SCES (Lemke & Moos, 1987) which measures “the extent to which residents express anger and are critical of each other and of the facility” (p. 24), was positively correlated with depression measured by the OAHMQ (Kemp & Adams, 1995) ( $r = .26, p < .001$ ). This correlational analysis between depression and Conflict was obtained from using the 199 residents of assisted living facilities. Although both studies by Mitchell and Kemp and Cohen and colleagues (2003) somewhat address negative consequences of anger, there is no study published that specifically evaluates the relation between anger and depression among residents of assisted living facilities.

#### Anger and Depression with Other Populations

A connection between anger and depression has been widely discussed in the psychoanalytic literatures. For example, Spiegel (1967) and Riley, Treiber, and Woods (1989) both provide a review of psychoanalytic and psychodynamic perspectives on anger and depression. Spiegel also discussed four psychotherapy cases involving anger and depression in her article. She then concluded that rage and anger could mask underlying depression and that therapists should be aware of the possibility of depression covered by anger. However, psychoanalytic and psychodynamic interpretations of an anger-depression relationship were theorized from psychotherapy cases and were lacking empirical support.

Biaggio and Godwin (1987) conducted a study to understand the relation between anger and depression by correlating scores on several anger and hostility measures and

scores on measures of depression. The study used 112 college students (45 male and 67 female, age  $M = 20.9$ ); participants completed the following four measures: the Hostility and Direction of Hostility Questionnaire (Caine, Foulds, & Hope, 1967), the Overcontrolled-Hostility Scale (Megargee, Cook, & Mendelsohn, 1967), the Anger Expression Scale (Spielberger et al., 1985), and the State-Trait Anger Scale (Spielberger, Jacobs, Russell, & Crane, 1983). Depression was measured by administering the Depression scale from the Minnesota Multiphasic Personality Inventory (MMPI; Hathaway & McKinley, 1943).

The results of the study demonstrated correlations between depression and all of the indices of anger and hostility measures. In particular, five scales had significant relationships ( $p < .01$ ) with scores on the MMPI Depression Scale: Intropunitiveness ( $r = .59$ ), Anger-In ( $r = -.39$ ), Anger Expression ( $r = -.34$ ), Hostility and Direction of Hostility ( $r = .29$ ), and Trait-Anger ( $r = .25$ ). Findings of the study suggest that more intense experiences of hostility, especially inwardly directed hostility, and greater experience and expression of anger exist among depressed participants than non-depressed participants. These findings provide empirical support for psychoanalytic and psychodynamic interpretation of the link between anger and depression. In addition, the study also revealed that depressed participants had a diminished sense of control over anger or a reluctance to manage anger compared to non-depressed participants.

The study conducted by Biaggio and Godwin (1987) produced useful information, but further exploration was recommended because their study did not include clinical samples. Riley and colleagues (1989), therefore, conducted a similar study using three different groups (one normal and two clinical). The non-clinical control group consisted

of 120 parents of two elementary schools' children; the non-clinical group's average age was 32.5 years old (30% were Black, 26.7% were male). The first clinical sample consisted of 36 psychiatric inpatients who met the Research Diagnostic Criteria (RDC) for major depressive episode, an abbreviated form of the Schedule for Affective Disorders and Schizophrenia Interview (SADS; Endicott & Spitzer, 1978), and their average age was 36.86 years old (16.6% were Black, 22.3% were male). The second clinical sample consisted of 54 hospitalized veterans from a PTSD unit; their average age was 38.8% years old (24% were Black, all were male).

The authors chose two different clinical samples because they were interested in the difference between clinically depressed people and another clinical sample, PTSD patients, who are often associated with hostility and anger expression. All of the study participants completed the following selected scales to assess the relationship between anger and hostility and depression: the Multidimensional Anger Inventory (MAI; Siegel, 1985), Framingham Anger Scales (FI/FO/FD; Haynes, Feinleib, Levine, Scotch, & Kannel, 1978), Buss Durkee Reactive and Neurotic Hostility Scales (BDRH/BDNH; Siegman, Dembroski, & Ringle, 1987), Anger Self-Report-General Expression (ASRG; Zelin et al., 1972), and the State-Trait Anger Scale/T-Anger (STAS; Spielberger, Jacobs, Russell, & Crane, 1983). Depression was measured with the BDI (Beck et al., 1961) and MMPI Depression scale (Hathaway & McKinley, 1943)

The results of this study confirmed the link between anger and depression. In addition, this study demonstrated that clinically depressed people had higher levels of anger and greater suppression of anger than people in the normal control group. However, there was no difference between levels of anger expression reported between these two

groups. On the other hand, clinically depressed people had lower levels of anger experience and expression than the PTSD patients; however, greater anger suppression was reported among clinically depressed people than the PTSD patients. Among clinically depressed people, there was a positive relationship between severity of depression and levels of anger and hostility experiences; whereas, either none or limited relationships were reported between severity of depression and anger expression and anger suppression. Therefore, the authors suggest that anger experience such as frequency, duration, and intensity, rather than the direction of anger expression (inwardly or outwardly), appears to have more impact on depression.

In more recent years, anger related studies have been using measures developed by Spielberger and his colleagues (e.g., STAS, AX Scale) and often use college students as study participants. Moreno and colleagues (1993) investigated the relationship between hostility and depression in depressed and non-depressed participants ( $N = 69$ , mean age of 35) recruited from the Medical Center ( $n = 34$ ) and two university counseling centers ( $n = 35$ ). Participants' depression was measured by the Hamilton Rating Scale for Depression (HRSD; Hamilton, 1960). This study examined the reliability and validity of the following measures: the BDI (Beck et al., 1961), Buss-Durkee Hostility Inventory (BDHI; Buss & Durkee, 1957), Hostility and Direction of Hostility Questionnaire (HDHQ; Foulds, Caine, & Creasy, 1960), and the State-Trait Anger Scale (STAS; Spielberger et al., 1983). The authors reported good temporal stability as well as good convergent validity with all five measures. Discriminant validity between anger and hostility measures and depression measures were somewhat limited,

but the normative data suggest both dispositionally and situationally derived anger experiences increased with severity of depression.

Deffenbacher and colleagues (1996) conducted eight studies that investigated the State-Trait Anger Theory and the utilization of the Trait Anger Scale (Spielberger, 1988). Among these eight studies, three studies (Study 6, 7, and 8) provided information about the relationship between trait anger and depression. Study 6 of their eight studies was a correlation study among trait anger and the previous month's frequency of anger, anxiety, depression, and intoxication. A total of 880 college students (536 women, 344 men) participated in this study and completed the TAS. These participants also provided their ratings of the frequency of moods (being angry, anxious, and depressed) and behaviors (getting drunk) during one month of their study participation in the range of 0 to 5 or more. The correlation of the TAS with frequency of depression accounted for 8% of variance for men and 6% for women. Although the variance that accounted for depression was small, this result was statistically significant ( $p < .01$ ).

Study 7 was a correlation study among trait anger and intensity of the symptoms measured by the Symptom Checklist-90-Revised (SCL-90-R; Derogatis, 1983). One hundred and seventy-eight college students (114 women, 64 men) participated in this study. The participants completed the TAS and the SCL-90-R scales (9 symptoms: Hostility; Somatization; Obsessive-compulsive; Interpersonal Sensitivity; Depression; Anxiety; Phobic anxiety; Paranoid ideation; and Psychoticism, and a Total Intensity Index). The correlation of the TAS with depression symptom intensity was significant at  $p < .05$ , accounting for 9% of the variance.

Study 8 was a correlation study among trait anger and trait anxiety, depression, and anger expression styles. Participants were 233 college students (126 women, 107 men), and the following instruments were administered: the TAS, the Anger Expression Inventory (AX; Spielberger, 1988), the Trait Anxiety Inventory (TAI; Spielberger, Gorsuch, & Lushene, 1970), and the Beck Depression Inventory (BDI; Beck, Rush, Shaw, & Emery, 1979). The result of this study indicated positive correlations between anger, anxiety, and depression. In addition, it reported a positive relation between the BDI and anger expression measured by the AX.

Kopper and Epperson (1996) tested a link between depression and the experience and expression of anger by using 705 college students (445 female, 260 male). Participants of this study completed: a brief demographic questionnaire, the Trait Anger (T-Anger) subscale of the STAS (Spielberger et al., 1983), the Anger Expression (AX) Scale (Spielberger, 1986), the BDHI (Buss & Durkee, 1957), the BDI (Beck, 1978), the Interpersonal Behavior Survey (IBS; Mauger, Adkinson, Zoss, Firestone, & Hook, 1980), and the Bem Sex-Role Inventory-Short Form (BSRI-SF; Bem, 1981). The result of this study indicated that anger suppression was positively correlated with depression ( $p < .01$ ).

### Personal Control and the Elderly

In the present study, personal control is defined by adopting Miller's (1999) definition of personal control in her dissertation as one has mastery or authority over his or her environment. There are two types of control that play important roles in older adults: behavioral and decisional control. Behavioral control refers to "the ability to make a response that directly influences the characteristics of an event" (Drozdzick, 2003, p. 15).

For example, if a resident of an assisted living facility gets to arrange when and where she gets to have her haircut, she is considered to be exhibiting her behavioral control. Decisional control refers to “the range of choices or options an individual has available” (p. 15). If a resident of an assisted living facility was shown three available apartments for her to choose from, she has more decisional control than another resident who was given an apartment that happened to be available at the time.

One of the major reasons for researchers to investigate the effect of control is because negative consequences (i.e., psychological distress or physical discomfort) could occur when one’s desire for control is not fulfilled. Rodin (1986) states that negative outcomes are likely to be diminished when the amount of perceived control matches with the resident’s expectations regarding control. Because each person’s level of desirability of control differs, some people may require more or less control than others to avoid experiencing these negative consequences. For example, when a resident of an assisted living facility who desired and expected to choose the apartment without aid from a family member, he or she experiences less distress when he or she has control in that situation. However, if the same individual, who actually did not desire nor expect to choose an apartment and hoped to have a family member decide, ended up having the same control, he or she may experience distress from unwanted involvement in the decision making. Therefore, it is important to consider individual differences when investigating the issue of personal control.

The concept of personal control described in the present study comes from the concept of locus of control that was introduced by Rotter (1966). According to Rotter, people develop beliefs about how much control they generally should have over aspects

of their lives through various social learning experiences. Locus of control is divided into two dimensions: internal and external. “Internal locus of control” refers to the perception that all events, both negative and positive, are a consequence of one’s own actions.

“External locus of control” refers to the perception that events are not caused by one’s own actions; rather, they are influenced by other factors, such as fate, luck, chance, or accident. A person who has a high sense of control is described as a person with internal locus of control. Likewise, a person with a low sense of control is describable as a person with external locus of control.

In the literature investigating post-relocation adjustment to senior residential care facilities, decisional control has been examined in terms of how much involvement residents have had when making the final decision to move to such facilities or how agreeable they were about the relocation. Individuals may have willingly moved to an assisted living facility even if they did not make the final decision to relocate. In addition, the amount of control these individuals would have over where and when to move could vary. For example, residents may have simply followed the decision made for them by their family members or physicians. In general, individuals who relocated to assisted living facilities by voluntarily seeking such residences have been identified with better outcomes in post-relocation adjustment than those who moved involuntarily (e.g., discharge from a hospital to an assisted living, requiring higher levels of care). For example, Thomasma, Yeaworth, and McCabe (1990) found less anxiety and Bourestom and Pastalan (1981) observed fewer problems among people who voluntarily moved compared to those who moved for reasons other than their own choices.



From a national survey including 192,042 assisted living residents, Hawes and colleagues (2000) found that 73% of the survey participants made the decision to relocate to an assisted living facility by receiving advice from others. The vast majority of these decision making advices came from family members, and some were from their physicians. Among residents who received help from others in making the relocation decision, 52% reported that they had complete or almost complete control over the decision and 23% reported that they had some control over the decision. However, the remaining 25% indicated that they had little or no control over the decision to relocate to assisted living facilities.

To investigate positive effects of personal control in relocation adjustment, Davidson and O'Connor (1990) conducted a longitudinal study with 50 incoming residents (16 females, 34 males) at a nursing home in British Columbia and examined the effects of perceived control over the relocation decision. This study also explored the predicting ability of acceptance of the relocation to the nursing home on changes in residents' functional health and morale over four months. Eighty-six percent of the participants moved to the nursing home from their private residence and the remaining 14% relocated there following the hospitalization. In this study, perceived control was measured by four items that aimed to measure the resident's level of involvement in making a decision to move into the nursing home. Acceptance was measured by using four items developed by the authors (e.g., "Do you welcome the change in residence?" "Do you find it nice to be here?") and morale was assessed by the Morale Scale from the Multidimensional Assessment Instrument (Lawton, Moss, Fulcomer, & Kelban, 1982).

The results of this study indicated that perceived control over the decision making did have positive effects on health during the first month after relocation, but had negative effects on health and morale between the second and fourth months. However, acceptance of the relocation to the nursing home showed no effects on health during the first month, but had positive effects on health and morale between the second and fourth months. Thus, the author concluded that perceived control appeared to initially influence residents' adjustment to the nursing home; however, acceptance of the decision to relocate to the nursing home, regardless of the level of involvement in decision making, played an important role in residents' post-relocation adjustments.

Although no studies have demonstrated involuntary relocation (e.g., resident did not want to move but had no other choice) as a cause of anger, it seems reasonable to speculate that negative consequences of lack of control could surface in the form of anger experience or expression, especially when an individual experiences discrepancies between his or her perceived control and desired control in the decision making. In terms of behavioral control, it is speculated that residents who moved from their private residences are more likely to experience distress than others who moved from a nursing home or a hospital because of the significant amount of decline in actual control compared to the pre-relocation condition. Once a resident moves into an assisted living facility, behavioral control plays an important role. In fact, a comprehensive review of research on control from Drozdick's (2003) dissertation suggests positive relations between physical and mental health and control. Furthermore, Rodin (1986) mentioned that repeated frustration of not being in control may cause physiological damage in older adults.

Positive relations between physical and mental health and control in long-term care originally came from a study conducted by Langer and Rodin (1976). A total of 91 nursing home residents (65 to 90 years of age) participated in the study that involved watering plants. The control group members were told that the staff would water their plants, while the experimental group members were given the choice as to whether they wanted the responsibility of watering their plants. At the beginning of the study, the experimental group was encouraged to make choices and to assume increased responsibility. On the other hand, the control group was stressed about the staffs' responsibility over residents. From this study, the experimental group exhibited positive consequences in terms of emotion and health. Furthermore, in the follow-up study conducted eighteen months later, Rodin and Langer (1977) again reported positive emotion and health effects, such as active participation, alertness, and well-being among the experimental group over the control group. In addition, the mortality rate of the control and the experimental groups was significantly different: 15% for the experimental group and 30% for the control group. Thus, control-enhancing intervention was proven to have positive effects on the older person's physical and mental health in nursing homes.

Another aspect of positive effects of control is the "buffering effect," which acts as a moderator with negative consequences of stressful events. For example, in the study conducted by Helgeson (1992) on the interaction between perceived control and cardiac patient's prognosis, high perceived control demonstrated less distress among participants with a poor prognosis and a high degree of functional impairment. Participants with a good prognosis did not experience any effect from having such control. Therefore, the present study suspects a similar buffering effect between perceived control and anger.

From the literature review on perceived control and health, an interesting perspective emerged in reference to people's age as a predicting factor in the interaction between perceived control and functional status on health and mortality among the elderly. Menec and Chipperfield (1997) investigated whether or not perceived control provides the similar benefits to all older adults by comparing two different age groups: the 641 young-old adults (65 to 79 years old) and the 160 old-old adults (80 to 104 years old). This study was a part of a larger longitudinal study conducted by the Canadian Aging Research Network in Manitoba. In this study, perceived personal control was measured by a single item that was developed by the authors. Participants were asked, "When you experience difficulties because of (fill in most serious health problem), do you feel that you are in control?"

The results of this study demonstrated that the perceived control worked as a buffering effect for perceived health, hospitalization, and mortality among old-old adults, but the same effect was not reported among young-old adults. In addition, among old-old adults, people with some functional impairment reported experiencing more benefit from feeling in control for perceived health compared to those with little functional impairment. Furthermore, among old-old adults with little functional impairment, feeling in control was found to be related to lower rates of hospitalization and mortality. The authors, therefore, suggest that perception of control may play a lesser role in health of young-old adults because of generally better health conditions and less disturbed environment factors compared to old-old adults.

Moore and Paolillo (1984) and Buschmann and Hollinger (1994) discussed the influence of control on depression in their studies. Moore and Paolillo examined the

influence of seven predicting variables (hopelessness, covert hostility, length of treatment, overt hostility, general hostility, external locus of control, and personal responsibility of external locus of control) on depression by using 317 outpatients (older than 19 years old) at a rural mental health center in Wyoming. Depression was assessed by the Beck Depression Inventory (BDI; Beck, 1967). The results of this study included a high correlation between hopelessness and depression ( $r = .71, p < .001$ ) and a moderate correlation between covert hostility and depression ( $r = .56, p < .001$ ). In addition, moderate correlations were reported between depression and general hostility, external locus of control, and personal responsibility of locus of control ( $r_s = .40, .32, \text{ and } .27$ , respectively). Moreover, a stepwise multiple regression analysis revealed that 50% of the variance of depression was explained by hopelessness. An additional 7% was explained by covert hostility. Moore and Paolillo suggested that the counseling practitioners should focus on the feelings of hopelessness and to help acknowledge anger in order to alleviate patients' symptoms of depression. However, the authors did not provide the description of the participants' age in this study. Therefore, the result of this study may not be fully applicable for the elderly.

On the other hand, Buschmann and Hollinger (1994) investigated the influence of social support and control on depression in the 50 residents (30 females, 20 males, the mean age of 76.6 years) from a nursing home. Participants completed the following measures: the GDS (Brink et al., 1982), Reid's Locus of Desired Control Scale (Reid, Haas, & Hawkings, 1977), the Perception of Touch Scale (Hollinger & Buschmann, 1993), the Rosenberg Self-Esteem (RSE) scale (Rosenberg, 1965), the Privacy Preference Scale (Pastalan & Bourestorm, 1975), and the Life Satisfaction Index (LSI; Neugarten et

al., 1961). The results of this study found that both social support and control had an influence in reducing depression.

Among currently available measures for personal control, the present study used the Desired Control-Short Form (Reid & Zeigler, 1981) because it was designed for use with older adults. The Desired Control-Short Form consists of 32 items with two scales. The first scale assesses an individual's desirability in certain situations. The second scale assesses an individual's perception of control over the situations. The present study also includes functional status measured by the nurse at the resident's assisted living facility. One reason to do so is that the previous research also included this information in their studies (e.g., Cummings, 2002), but the main reason is the functional status happened to show a correlation with personal control depending on the age in Menec and Chipperfield's (1997) study.

### Summary

This chapter provided a review of the literature that discussed the construct of anger used in the present study and studies that have examined the mental health issues of residents of assisted living facilities: (a) quality of life (QOL), (b) depression, and (c) social networks. A review of research concerning the relationships between anger and depression with non-assisted living populations and the effects of anger among the elderly was also provided. In addition, an overview of the literature on personal control in the elderly was discussed.

In the present study, anger is defined as an "emotional state" because probable reasons for a resident of an assisted living facility to experience anger are situational

rather than dispositional. Therefore, anger will be measured by the Anger-Hostility scale of the POMS (McNair et al., 1992) for the purpose of the present study. The research investigated psychological issues of residents of assisted living facilities seems to be divided into the following four areas: (a) QOL, (b) depression, (c) life satisfaction, and (d) social network. Researchers approached QOL studies by identifying the concept of QOL (e.g., Ball et al., 2000; Kane, 2001) and examining QOL measures with assisted living facility residents (Mitchell & Kemp, 2000). Depression is one of the frequently studied subjects among a small body of existing literature that focused mental health issues of residents of assisted living facilities (e.g., Cuijpers & Van Lammeren, 1999; Cummings, 2002; Cummings & Cockerham, 2004; Grayson et al., 1995; Lawton et al., 1995; Watson et al., 2003, 2006). Some of these aforementioned researchers have also explored life satisfaction among residents of assisted living facilities in their studies (Cummings, 2002; Cummings & Cockerham, 2004; Mitchell & Kemp, 2000). In terms of social network, Tremethick's (2001) study revealed that living in an assisted living facility and being surrounded by other residents and staff does not always mean that the resident has a social network. In fact, the study reported that 41% of their study participants perceived themselves to be living alone.

In addition to two studies that discussed the link between anger and depression among the elderly (Johnson & Wilborn, 1991; Weitzman et al., 2002), two studies (Cohen et al., 2003; Mitchell & Kemp, 2000) mentioned how anger was related to the mental health of residents of assisted living facilities. Historically, the link between anger and depression has been widely discussed in psychoanalytic literature (e.g., Riley et al., 1989; Spiegel, 1967) and anger has been proven to relate to depression with other

populations, such as college students and clinically depressed adults (e.g., Biaggio & Godwin, 1987; Deffenbacher et al., 1996; Kopper & Epperson, 1996; Moreno et al., 1993). As indicated earlier, depression is one of the most commonly reported health problems in assisted living facilities (e.g., Ball et al., 2000; Mitchell & Kemp, 2000), yet there are limited studies that explored risk factors of depression among these residents (Cummings & Cockerham, 2004; Jang et al., 2006; Mitchell & Kemp, 2000; Watson et al., 2003). Therefore, it becomes important to explore the effect of anger among assisted living residents, especially when the link between anger and depression has been reported with other populations. Furthermore, if anger and depression among residents of assisted living facilities is found to be significantly related with each other, it adds a new perspective in depression treatment. Thus, it seems worthwhile to investigate the link between anger and depression among residents of assisted living facilities. For the purpose of this study, depression will be measured by the GDS-SF (Sheikh & Yesavage, 1986).

Lastly, personal control is defined as the perception that one has mastery or authority over his or her environment in the present study. From a review of the literature that addressed personal control and the elderly, it became clear that negative consequences can be anticipated (i.e., frustration, anger) when the amount of perceived control does not match with the resident's expectations regarding control. Langer and Rodin's (1976) study demonstrated a positive relationship between physical and mental health and control in long-term care setting. From this study, the control group which assumed no responsibility had a higher rate of mortality compared to the experimental group which assumed increased responsibility. In addition, Moore and Paolillo (1984)



reported a high correlation between depression and hopelessness and a moderate correlation between depression and covert hostility. Moore and Paolillo also concluded that decreasing feelings of hopelessness and helping acknowledge anger would alleviate depression based on a stepwise multiple regression analysis. Therefore, the present study includes personal control as a predicting variable for anger experience, and the Desired Control-Short Form (Reid & Zeigler, 1981) will be used because of its specific development for use with older adults.

## CHAPTER III

### Method

Chapter III describes the study participants, data collection procedures, instruments, study design and statistical analysis, and power analyses.

#### Selection of Participants

Individuals residing in assisted living facilities in the Northeastern part of the U.S. comprised the sample of this study. Appropriate candidates for the study were identified by the staff at the participating facilities. All of the study participants were required to demonstrate their ability to complete the Demographic Questionnaire form (see Appendix A). In addition, the Mini-Mental State Examination (MMSE; Folstein et al., 1975) was administered to minimize the variability in test scores due to cognitive impairment or inability to fully complete the measures.

The MMSE is an extensively used instrument among the elderly. Grigsby, Kaye, Kowalsky, and Kramer (2002) state, "Because of its brevity, reliability, and validity, the MMSE is the instrument most commonly used for the assessment of general mental status among the elderly" (p. 295). Different norms are available for the MMSE based on age and education level (Crum, Anthony, Bassett, & Folstein, 1993); however, a high rate of cognitive impairment exists among residents of the assisted living facility. In addition, prior research (e.g., Lelito, Palumbo, & Hanley, 2001; McGivney, Mulvihill, & Taylor, 1994) demonstrated that individuals with a MMSE score of 15 or greater are considered

“cognitively capable” of completing the Geriatric Depression Scale (Brink et al., 1982). Therefore, any resident with a MMSE score of 15 or greater who could articulate his or her opinions while completing the Demographic Questionnaire form were included in the study.

All participants were screened prior to continuing with the study upon completion of the MMSE and the Demographic Questionnaire form. If a participant was unexpectedly found ineligible to participate in this study (e.g., those with a severe cognitive impairment and/or an inability to complete the demographic questionnaire form), in spite of the information gathered through the prescreening process, he or she would be referred to a nurse in order to assist his or her assisted living facility in providing an appropriate level of care. However, no one fell in this category.

#### Data Collection Procedures

Data collection was conducted between May 2005 and October 2006. Informed consent was obtained prior to gathering information at the beginning of the study. The Demographic Questionnaire form and the MMSE were administered to all of the study participants to determine the eligibility for the study. Once the participant was included in the study, he or she would then complete the Geriatric Depression Scale Short Form (GDS-SF; Sheikh & Yesavage, 1986), Anger-Hostility scale of the POMS (McNair et al., 1992), and the Desired Control-Short Form (Reid & Ziegler, 1981). In addition, appropriate information (i.e., functional status) was gathered from reviewing the participant’s chart. Once the data was gathered, it was coded and entered into the Statistical Package for the Social Sciences (SPSS) for Windows, Version 11.0; it was

then analyzed in order to test research hypotheses. If the participant had a GDS-SF score of 5 (suggestive of depression) or more when such information was not previously known, contact was made with a supervising staff in order to assist his or her assisted living facility to provide the appropriate level of care.

### Instruments

The following instruments were used in this study: (a) Demographic Questionnaire (see Appendix A), (b) Mini-Mental State Examination (MMSE; Folstein et al., 1975), (c) Geriatric Depression Scale Short Form (GDS-SF; Sheikh & Yesavage, 1986), (d) Desired Control-Short Form (Reid & Ziegler, 1981), and (e) Anger-Hostility scale from the Profile of Mood States (POMS; McNair et al., 1992).

#### *Demographic Questionnaire*

Demographic information was collected on age, gender, race, marital status, educational and occupational history, the length of stay in the current residence in an assisted living facility, and types of former residence (e.g., private residence, hospital, independent living). Information about perceived care given by the facility, involvement in the decision to relocate to an assisted living facility (perceived decisional involvement), and the reason for relocating to an assisted living facility were also asked. Perceived care was assessed using a single item question on overall satisfaction with the care from the assisted living facility (“On a scale of 1 to 10, how satisfied are you with the care provided by your assisted living facility?”). Involvement in the decision to relocate to an assisted living facility (perceived decisional involvement) was assessed by adopting

Davidson and O'Connor's (1990) Perceived Decisional Control measure. For these two measures, a higher number represents stronger satisfaction for perceived care and greater involvement in the decision to relocate to an assisted living facility. In addition, participants' functional statuses were gathered upon the review of their charts.

#### *Mini-Mental State Examination (MMSE)*

The MMSE was developed by Folstein and colleagues (1975) as a screening instrument for cognitive impairment.

*Administration.* This scale consists of 10 orientation questions that assess immediate and delayed recall, several language items, measures of attention and calculation, and one visuospatial item. This measure was administered by the researcher.

*Scoring.* Scoring of the MMSE is obtained by summing values of the correctly answered items. The range of total score is 0 to 30 and higher scores indicate lesser global impairments in functioning.

*Reliability.* Folstein and colleagues (1975) reported test-retest reliabilities of  $r = .887$  for 24 hours (same tester) and  $r = .827$  for 24 hours (different tester) and  $r = .98$  for 28 days in the development study. Tombaugh and McIntyre (1992) conducted a thorough review regarding the psychometric information of the MMSE and reported internal consistency with Cronbach's alphas of .54 to .96 from the following four studies: a Cronbach's alpha of .77 with 4,917 community sample (18 to 85 years old) in Holzer,

Tischler, Leaf, and Myers (1984), a Cronbach's alpha of .68 with 274 community sample (70 to 80 years old) in Kay (1985), a Cronbach's alpha of .96 with 66 mixed healthy and dementia patients (mean age of 76 years) in Foreman (1987), and Cronbach's alphas of .65 (grades 0-8) and .54 (> grade 8) with 269 community sample (mean age of 70 years) in Jorm, Scott, Henderson, and Kay (1988).

*Validity.* In the development study, the authors reported concurrent validity of the MMSE with the Wechsler Adult Intelligence Scale (Wechsler, 1955) Verbal ( $r = .776, p < .0001$ ) and Performance ( $r = .66, p < .001$ ) scores based on a group of people selected from 206 patients with dementia syndromes, affective disorders, affective disorder with cognitive impairment, mania, schizophrenia, and personality disorders, as well as 63 "normal" older adults.

#### *Geriatric Depression Scale Short Form (GDS-SF)*

The Geriatric Depression Scale (GDS) was developed by Brink and colleagues (1982) to measure depression experienced by the elderly. The GDS-SF (Sheikh & Yesavage, 1986) is a brief version of the original GDS. This measure is also valid and appropriate for cognitively impaired older adults (Parmelee, Katz, & Lawton, 1989).

*Administration.* The GDS-SF is a 15-item self-report measure of depression that evaluates participants' experience of mood over the past week. Participants respond to items by choosing either "Yes" or "No."

*Scoring.* One point is given to each agreement which is pre-assigned by the GDS-SF. The range of total score is 0 to 15 and higher scores on the GDS-SF indicate greater depression.

*Reliability.* Yesavage and colleagues (1983) reported the original GDS's internal consistency with a Cronbach alpha of .94 in the development study, but Sheikh and Yesavage (1986) did not present validation data on the GDS-SF in their study. The GDS-SF was created by selecting the 15 items with the highest correlation with depressive symptoms, and researchers consider this short form as an appropriate substitute for the original long form. For example, Cwikel and Ritchie (1988) found the sensitivity of the GDS-SF to be .70 and the specificity to be .75 with a cut-off score of seven. Leshner and Berryhill (1994) found the sensitivity of the GDS-SF to be .83 and the specificity to be .73 with a cut-off score of seven.

*Validity.* High convergent validity of the GDS-SF has been reported with the original GDS ( $r = .84, p < .001$ ) (Sheikh & Yesavage, 1986). Leshner and Berryhill (1994) reported a high correlation ( $r = .89, p < .001$ ) between the GDS and the GDS-SF with a sample of geriatric inpatients (17 males and 55 females). Herrmann et al. (1996) reported a high correlation for the GDS-SF ( $r = .78, p < .0001$ ) with the Montgomery Asberg Depression Rating Scale (MADRS; Montgomery & Asberg, 1979) using 116 geriatric depressed patients.

### *Desired Control-Short Form*

The Desired Control-Short Form was developed by Reid and Ziegler (1981) specifically for older adults to measure their perception of control.

*Administration.* This measure consists of 32 items which is composed of two sections. Part I assesses the individual's desire for certain aspects of one's life. An example for this section is, "Is being able to arrange for outings important for you?" Part II assesses the individual's perception of his or her ability to control certain aspects of his or her life. An example of this section is, "I can entertain friends when I want." Although the Desired Control-Short Form is a self-report measure, it is often administered orally to the elderly individuals (Reid & Ziegler, 1977). Participants responded to items on a 5-point rating scale rating from 5 (*Very desirable*) to 1 (*Very undesirable*) in Part I. Participants responded to items on a 5-point rating scale rating from 5 (*Strongly agree*) to 1 (*Strongly disagree*) in Part II.

*Scoring.* Scoring of the Desired Control-Short Form is obtained by summing across the items. For Part I, low scores on the Desired Control-Short Form indicate a low degree of desired control and high scores suggest a high degree of desired control. For Part II, low scores on the Desired Control-Short Form indicate a low degree of expectancy of control and high scores suggest a high degree of expectancy of control. The discrepancy between actual and desired control was calculated by summing the values of the difference between scores on the linked items on the Part I and Part II. For this procedure, reverse scoring is required for some of the items in Part II.



*Reliability.* In the development study of the original Desired Control measure, alpha coefficients were reported ranging from the high .80s and low .90s based on 363 older adults in the following five types of residences: an institutional setting, a high rise complex, an extended care unit of a hospital, private community residence, and others. The reliability coefficient for the Desired Control-Short Form was .73 (Reid & Ziegler, 1981). In addition, Lefcourt (1991) reported a Cronbach's alpha of .74 for Desired Control (Part I) and a Cronbach's alpha of .69 for Expected Control (Part II) with a sample of 135 people who completed the Desired Control-Short Form. Factor analysis of the Desired Control-Short Form using 469 cases showed one dominant rotated factor accounting for 67.7% of the variance (Reid & Ziegler, 1981).

*Validity.* The predictive validity of the original Desired Control measure was supported by the positive and significant correlation with life satisfaction ( $r$  ranging from .23 to .44,  $p < .001$ ) in four studies and the negative and significant correlation with poor health ( $r$  ranging from -.16 to -.49,  $p < .001$ ) in three of the four studies (Reid & Ziegler, 1981).

#### *Profile of Mood States (POMS)*

The Profile of Mood States (POMS) was originally developed by McNair, Lorr, and Droppleman (1971) to assess transient distinct mood states. The POMS consists of 65 adjectives for the following six factor-based subscales: Tension-Anxiety, Depression-Dejection, Anger-Hostility, Fatigue-Inertia, Vigor-Activity, and Confusion-Bewilderment.

Normative data for geriatric population reflecting the 1990 census data is available from Nyenhuis, Yamamoto, Luchetta, Terrien, and Parmentier's (1999) validation study.

*Administration.* This is a 65-item self-report paper and pencil instrument which has 6 types of mood states. For the purpose of this study, 12-item Anger-Hostility was used. Respondents rated their mood over the past week on a 5-point scale from "not at all" to "extremely."

*Scoring.* The range of total score for the Anger-Hostility scale is 0 to 48 and higher scores indicate greater anger.

*Reliability.* The POMS manual (McNair, Lorr, & Droppleman, 1992) reports internal consistency reliability (K-R 20) for the Anger-Hostility from two studies: .92 with 350 male psychiatric outpatients and .93 with 650 female psychiatric outpatients. Curran, Andrykowski, and Studts (1995) reported Cronbach's alphas for the Anger-Hostility ranging from .81 to .93 with 600 adults (242 men and 358 women) representing five different clinical samples and one healthy sample.

*Validity.* The POMS manual reports concurrent validity coefficients for the Anger-Hostility with three of the following Inpatient Multidimensional Psychiatric Scale (Lorr & McNair, 1963) based on 523 outpatients:  $r = .32$  with Hostility,  $r = .31$  with Mistrust, and  $r = .21$  with Passive Dependency ( $p < .01$  for all three scales). The manual also states that the Anger-Hostility correlates with the following Minnesota Multiphasic

Personality Inventory-2 (MMPI-2; Butcher, Dahlstrom, Graham, Tellegen, & Kaemmer, 1989) scales as the authors had expected: Hypochondriasis (*Hy*) (.52), Psychopathic Deviate (*Pd*) (.52), and Paranoia (*Pa*) (.51).

### Study Design and Statistical Analysis

The design of this study is non-experimental. All statistical analyses in this study were performed by the computer software, SPSS for Windows, Version 11.0. As explained in Chapter I, there are two hypotheses that were formulated to answer the following research questions: (a) How are depression and anger related among the residents of assisted living facilities? and (b) What factors contribute to the experience of anger? How well do the four variables (perceived decisional involvement in relocation, perceived care from a facility, level of functional impairment, and personal control) predict the resident's experience of anger?

To test hypothesis 1, which is as the score of the Anger-Hostility of the POMS increases, the score on the GDS-SF will also be increased, a Pearson product-moment correlation coefficient "*r*" was used to determine if there would be a relationship between these two variables.

Hypothesis 2 states that the four variables (perceived decisional involvement, functional impairment, perceived care, and discrepancy between desired and actual personal control) would each account for significant variance in residents' experience of anger. To test this hypothesis, a multiple regression analysis was conducted with using these four predicting variables and the scores of the Anger-Hostility scale as the criterion

variable. Perceived decisional involvement, functional impairment, perceived care, and discrepancy between desired and actual control were treated as continuous variables.

### Power Analysis

In order to determine the appropriate sample size for this present study and to have meaningful outcomes, power analyses were conducted. This study's power analysis used the computer program GPower (Faul & Erdfelder, 1992) and employed Cohen's (Cohen, 1988) criteria for effect size. Different effect sizes are available for different statistical analysis procedures. The first hypothesis predicted a correlation between the Anger-Hostility scale of the POMS and the GDS-SF. Effect size conventions for  $r$  follows: .1 for a small, .3 for a medium, and .5 for a large effect. The estimation of the appropriate sample size based on  $\alpha = .05$  and power = .8 with a medium effect size is eighty two. Therefore, for the purpose of this study, it was recommended to have a total of 82 study participants. The power for this test is .15 for a small effect size and .99 for a large effect size. It was anticipated that there would be a small to moderate correlation between these two scores. Thus, between .15 and .80 is the power for this correlation.

The second hypothesis was tested by a multiple regression analysis. The power analysis for a multiple regression model uses the predicted effect size, sample size, and number of predicting variables in the model. Effect size conventions for  $f^2$  are .02 for a small, .15 for a medium, and .35 for a large effect. The power estimation for this hypothesis with a sample size of 82, four predictive variables, and moderate to large effect size indicate .78 to .99 for the model.

## CHAPTER IV

### Results

This chapter reports descriptive statistics for the study sample, and the instruments used in the present study. Hypotheses testing and a summary of the findings of the study are also explained.

#### Descriptive Statistics for the Study Sample

The participants were 82 residents of assisted living facilities, recruited from five facilities in North New Jersey. Approximately two thirds of the participants ( $n = 56$ ) were recruited from two nonprofit assisted living facilities and about one third of the participants ( $n = 26$ ) were recruited from three for-profit assisted living facilities. At the time of study participation, participants ranged in age from 67 to 107, with a mean age of 87.4 ( $SD = 6.57$ ) years. About 77% of these participants were women ( $n = 63$ ) and about 23% were men ( $n = 19$ ). Marital Status was: 11% married, 5% divorced, 78% widowed, and 6% single. The majority of the participants' racial composition was White (95%) and the rest were comprised of 2% Black, 1% Asian, and 1% Other (Asian and White mix). Participants had completed between 8 to 23 years of education, with a mean of 14.8 ( $SD = 2.64$ ) years. Most of the participants (93%) had been employed in the past; whereas, 7% were homemakers. The length of residency in assisted living facilities ranged from one month to eight years, with a mean of 25.8 ( $SD = 25.85$ ) months. Over half (67%) moved to their current residence in assisted living facilities from a private residence, 18%

relocated from an independent living facility, 5% transferred from a hospital, 1% moved from a relative's house, and 9% came from other places (e.g., rehabilitation center, nursing home, and different assisted living facility apartment). The reasons for entering assisted living facilities varied, but the following are the commonly reported answers: a) inability to care for self or live alone; b) health related issues; c) spouses' increased care needs; d) family suggestions; e) to live near family; and d) inability to maintain house. It should be noted that overall sample characteristics on age, gender, race, marital status, previous residence, financial ability, and length of stay are similar to the profiles reported in Hawes and colleagues' (2000) national survey.

#### Participants' Scores on Measures Used in the Study

Table 1 illustrates descriptive statistics for the sample on the criterion and predicting variables used in this study. A discussion of each follows.

##### *Perceived Care*

Only one individual rated less than five and the rest of the participants reported a score between 5 and 10 for their satisfaction level with the care provided by the assisted living facility. About 18% rated 5 out of a possible score of 10, while 70% rated either 8 or 10 out of a possible score of ten.

##### *Perceived Decisional Involvement*

This was measured by adopting the Perceived Decisional Control Questionnaire (Davidson & O'Connor, 1990) which consists of 4 questions. The first question is

Table 1

*Descriptive Statistics for Perceived Care, Perceived Decisional Involvement, Functional Impairment, GDS-SF, Desired Control-Short Form, Personal Control, and Anger-Hostility of the POMS*

Scale	Possible Range	Actual Range	<i>M</i>	<i>SD</i>	Skewness
Perceived Care	1 – 10	4 – 10	7.93	1.84	-.471
Perceived Decisional Involvement	4 – 12	4 – 12	9.51	2.17	-.738
Functional Impairment	9 – 36	9 – 30	19.55	5.27	.042
GDS-SF	0 – 15	0 – 12	3.98	3.26	.804
DC-SF Desire	16 – 80	51 – 80	67.70	5.87	-.246
DC-SF Expectancy	16 – 80	48 – 73	58.52	5.03	.195
Personal Control	N/A	-2 – 23	9.17	5.52	.182
Anger-Hostility	0 – 48	0 – 31	4.07	5.43	2.421

*Note.* GDS-SF = Geriatric Depression Scale Short Form; DC-SF = Desired Control-Short Form; POMS = Profile of Mood States; N/A = Not meaningful.

“Was it your decision to come live in an assisted living facility?” Approximately 34% reported that it was not their decision to live in the assisted living facility, but about 43% stated that they made the decision to come live in the assisted living. The second question asks, “Did others consult with you much about the decision to come stay in an assisted living?” About 76% reported that someone did consult with them about the decision to move to an assisted living, but about 20% stated that they had no consultation with others regarding the relocation decision. The third question asks “Do you feel that you influenced the decision to come here?” In this question, “here” implies specifically about an apartment where the resident currently resides. More than half (60%) felt they had influence on the decision to come where they are, while 22% reported feeling no such influence on the decision. The fourth question is “How much input would you say that you had in the decision to come live in an assisted living facility?” A little over half (59%) stated that they had a great deal of input; however, about 9% reported that they had no input at all.

### *Functional Impairment*

The mean score for this study’s sample was 19.55 ( $SD = 5.27$ ). Scores can be divided into four categories in assisting to determine appropriate care levels: Independent (9); Level I (10-18); Level II (19-27); and Level III (28-36). About 1% of the participants fall in Independent, 39% fall in Level I, 54% fall in Level II, and 6% fall in Level III. It should be noted that in general, residents of assisted living facilities require at least some assistance in order to want or need to relocate to such a facility. According to Cummings and Cockerham (2004), a typical assisted living resident is described as a female in her



eighties who needs assistance with three activities of daily living. Those who scored low in Functional Impairment (requiring lesser level of care) in this study's sample appeared to be individuals who relocated to the assisted living due to their spouses' requirement for a higher level of care or individuals who chose the assisted living over Independent Living for financial reasons, which was an option at one of the assisted living facilities.

#### *Depression (GDS-SF)*

In Leshner and Berryhill's (1994) study, the authors found that the best overall cut-off for the GDS-SF is seven. Their sample consisted of 17 men and 55 women with the mean age of 71.22 ( $SD = 7.55$ , range = 57 to 89) and representing three diagnostic groups (depressed, demented, and thought-disorder). Approximately 23% of the current study participants would be considered depressed based on a cut-off of 7, which means almost one in every four residents in this study would be considered depressed.

#### *Personal Control*

This was measured by summing the discrepancy between the linked items on Desired Control-Short Form Part I (Desire) and the Desired Control-Short Form Part II (Expectancy). The mean score was 9.17 ( $SD = 5.52$ ) and ranged from -2 to 23. The vast majority of the participants appear to experience limitations on control. Drozdick (2003) reported in her dissertation study that assisted living residents demonstrated greater discrepancies between desired and actual control than community residents, although both community dwelling older adults and assisted living residents had less control than

they desired. Means and standard deviations of assisted living residents ( $N = 18$ ) from Drozdick's study for this discrepancy were similar to the sample in the present study.

#### *Anger (Anger-Hostility of the POMS)*

About 30% scored 0 on this scale reporting no anger experience during the past week including the day of study participation. The mean of 4.07 ( $SD = 5.43$ ) was similar to the mean of 4.4 ( $SD = 4.7$ ) found in a sample of 170 older adults (Nyenhuis et al., 1999) which has been used as the POMS geriatric normative sample. Different norms are available for men and women in Nyenhuis et al.'s study. The mean for men in the current study is 4.11 ( $SD = 5.58$ ) and the mean of 3.9 ( $SD = 4.5$ ) was found in a sample of 73 men. The mean for women in the present study is 4.06 ( $SD = 5.43$ ) and the mean of 4.7 ( $SD = 4.9$ ) was found in a sample of 97 women.

Before performing data analyses, all data described above were screened as recommended by Tabachnick and Fidell (2001). One of the assessment variables, Anger-Hostility of the POMS, had an uneven distribution and required transformation to bring it within normal distribution. A logarithmic transformation was conducted and a log of the Anger-Hostility scale (L-anger) resulted in a normal distribution. Table 2 provides the zero-order correlations between variables used in this study including transformed scores for Anger-Hostility scale.

#### Tests of Hypotheses

Two statistical tests were conducted on the data to test the hypotheses proposed in this study.

Table 2

*Intercorrelations Between Perceived Care, Perceived Decisional Involvement, Functional Impairment, GDS-SF, Desired Control-Short Form, Personal Control, Anger-Hostility of the POMS, and L-anger*

	1	2	3	4	5	6	7	8	9
1. Perceived Care	1.00	-.046	-.102	-.364**	.160	.282*	-.087	-.455**	-5.61**
2. Perceived Decisional Involvement		1.00	-.125	-.064	-.028	-.010	-.021	.116	.106
3. Functional Impairment			1.00	.174	.018	-.105	.115	.053	-.024
4. GDS-SF				1.00	-.270*	-.459**	.131	.375**	.430**
5. DC-SF Desire					1.00	.497**	.610**	-.238*	-.168
6. DC-SF Expectancy						1.00	-.384**	-.361**	-.342**
7. Personal Control							1.00	.076	.133
8. Anger-Hostility								1.00	N/A
9. L-anger									1.00

*Note.* GDS-SF = Geriatric Depression Scale Short Form; DC-SF = Desired Control-Short Form; POMS = Profile of Mood States; L-anger = Log of Anger-Hostility of the POMS; N/A = Not meaningful. 2-Tailed Significance Levels \* $p < .05$ . \*\* $p < .01$ .

### *Hypothesis 1*

Hypothesis 1 stated, as the score of Anger-Hostility of the POMS increases, the score on the GDS-SF will also be increased. This was tested by using Pearson correlation coefficient between these two scores and was evaluated through one-tailed test of significance. Instead of using scores on Anger-Hostility of the POMS, transformed scores of the Anger-Hostility, L-anger, were used. As predicted, the correlation between these two scales was significant, and it was both positive and moderate in size,  $r(82) = .43, p < .01$ . Therefore, individuals in this sample who reported experience of anger were also likely to report depressive mood symptoms.

### *Hypothesis 2*

Hypothesis 2 predicted that Perceived Decisional Involvement, Functional Impairment, Perceived Care, and Personal Control (discrepancy between desired and actual personal control) would each account for significant variance in residents' experience of anger. This was tested by calculating a multiple linear regression with scores on the Perceived Decisional Involvement, Functional Impairment, Perceived Care, and Personal Control as predictors and the L-anger as the criterion variable. The results of the multiple regression analysis are shown in Table three. The regression equation with all four predictors was significantly related to experience of anger,  $R^2 = .34$ , adjusted  $R^2 = .30$ ,  $F(4, 77) = 9.73$  at  $p < .001$  level. In other words, the overall model is significant, and it accounts for about 34% of the variance in experience of anger. When all four predictor variables are entered together; however, only one of the individual predictors appears to be making a significant unique contribution to the model. Results revealed that

Table 3

*Multiple Regression Analysis for Variables Predicting L-anger*

Variable	<i>R</i>	<i>R</i> <sup>2</sup>	<i>F</i>	$\beta$
Model 1	.579	.336	9.730***	
Perceived Care				-.558***
Perceived Decisional Involvement				.072
Functional Impairment				-.083
Personal Control				.095

Note. \*\*\* $p < .001$ .

the beta weight of this equation is  $-.56$ , illustrating that Perceived Care accounts for 56% of the variance. Perceived Decisional Involvement, Functional Impairment, and Personal Control were not significant predictors of anger experience.

### Supplemental Analyses

In the present study, the length of residency in assisted living facilities ranged from one month to eight years, with a mean of 25.8 ( $SD = 25.85$ ) months. This raised further three questions. The first question was whether or not the variability or possible variability of implications with the length of time in residency. To investigate this, participants' length of residency in assisted living was divided into three groups, recent (up to 7 months), mid-term (8 to 32 months), and long-term (33 to 96 months). The one-way ANOVA was calculated examining the effect of the length of residency on scores on L-anger. The  $F$  score on L-anger revealed no significant mean differences between these three groups. In Hypothesis 2, about 34% of the variance of L-anger was predicted by perceived care. Further analysis was conducted to understand the connection between L-anger and perceived care with regards to the length of residency. As shown in Table 4, the connection between L-anger and perceived care was stronger in the long-term group compared to those in the recent and mid-term groups.

The second question was whether or not the impact of Perceived Decisional Involvement is more significant with regards to how long residents have been in the assisted living facility. The one-way ANOVA was calculated examining the effect of decisional involvement between three residency groups. No significant length of residency differences was found on the score on Perceived Decisional Involvement.

Table 4

*Regression Coefficients of Perceived Care on L-anger in Three Groups of the Length of Stay*

Length of Stay	$\beta$	SE	$R^2$	F
Recent (n = 27)	-.525**	.033	.276	9.517**
Mid-term (n = 26)	-.512**	.050	.262	8.536**
Long-term (n = 27)	-.698***	.033	.488	23.796***

Note. \*\* $p < .01$ . \*\*\* $p < .001$ .

In addition, the regression analysis was conducted to evaluate predicting ability of Perceived Decisional Involvement on L-anger with three length of residency groups. The results of this analysis revealed that Perceived Decisional Involvement did not have significant predicting ability on L-anger with regards to how long residents have been in the assisted living facility.

The third question was whether or not the impact of Personal Control is more significant among newcomers. The one-way ANOVA was calculated examining the effect of Personal Control between three residency groups. No significant length of residency differences was found on the score on Personal Control. In addition, the regression analysis was conducted to evaluate predicting ability of Personal Control on L-anger with three length of residency groups. The results of this analysis revealed that Personal Control did not have significant predicting ability on L-anger with regards to how long residents have been in the assisted living facility.

Interestingly, as illustrated in Table 2, the criterion variable is also correlated with the Desired Control-Short Form Expectancy, and the correlation coefficient between L-anger and Desired Control-Short Form Expectancy is  $-.342$  and statistically significant at the  $.01$  level. A regression model that includes Desired Control-Short Form Expectancy as a predicting variable may contribute unique information. As a result, a new model was tested with perceived care and Desired Control-Short Form Expectancy as predicting variables. About 32% of the variability is predicted by perceived care alone, and 12% of the variability is predicted by Desired Control-Short Form Expectancy alone. A combination of these two can also efficiently predict about 35% of the variability in anger,



$R^2 = .352$ , adjusted  $R^2 = .335$ ,  $F(2, 79) = 21.443$  at  $p < .001$  level. This, however, is not much different from the original model that predicts about 34% of the variability in anger.

Further analysis was conducted to understand the connection between L-anger and Desired Control-Short Form Expectancy with regards to the length of residency. The connection between L-anger and Desired Control-Short Form Expectancy was only significant in the recent group. About 40% of the variability is predicted by Desired Control-Short Form Expectancy,  $R^2 = .402$ , adjusted  $R^2 = .378$ ,  $F(1, 25) = 16.824$  at  $p < .001$  level. Thus, the score on the Perceived Care level alone is a good predictor of anger among overall residents in assisted living facilities, but the resident's perception of his or her ability to control certain aspect of his or her life can efficiently predict anger when he or she is a recent resident of an assisted living facility.

### Summary

Based on the statistical analyses conducted on the data from the current study, Hypothesis 1 was supported as predicted. There is a positive relationship between depression and anger. Hypothesis 2, however, was only partially supported with Perceived Care being the only significant predictor of anger. Contrary to the study prediction, three predicting variables (Perceived Decisional Involvement, Functional Impairment and Personal Control) were not found to be significant predictors of anger experience. Further analysis determined that the relationship between anger and perceived care was stronger for those who have been residing in assisted living facilities a long time. In regard to Perceived Decisional Involvement, there was no difference between three residency group means. This was also true for Personal Control.

Furthermore, both Perceived Decisional Involvement and Personal Control were not found to be significant predictors of anger regardless of the length of residency. Although Personal Control variable was not a significant predictor in this study, Desired Control-Short Form Expectancy, which measured the resident's perception of his or her ability to control certain aspect of his or her life, was found to efficiently predict anger when he or she is a recent resident of an assisted living facility.

## CHAPTER V

This chapter presents a discussion of the results of the present study and the implications of the study. Limitations of the study and recommendations for future research are also provided.

### Discussion

Depression is one of the common problems among the elderly. Anger is known to be associated with depression. As discussed in Chapter I, the link between different types of anger and depression have been explored by researchers, but only a few studies (e.g., Johnson & Wilborn, 1991; Weitzman et al., 2002) were conducted with older adults. Furthermore, Cohen and colleagues (2003) and Mitchell and Kemp (2000) were the only researchers whose study somewhat addressed the relation between anger and depression among residents of assisted living facilities. Currently, there are no studies that have been published that specifically evaluate the relationship between anger and depression among residents of assisted living facilities. The purpose of this study, therefore, was to explore the direct link between anger and depression and to examine four predicting variables of anger. This research found empirical evidence that there is a positive relationship between anger experience and depression among residents of assisted living facilities.

In recent studies, depression has been identified as a risk factor for increasing rate of discharge to nursing homes, as well as a higher rate of mortality (Watson et al., 2003). Findings from the current study may appear to provide some answers for what causes

depression. However, the result of this study cannot imply cause and effect due to the study's correlational nature. Thus, it is logical to examine who is more at risk of anger because properly dealing with anger may help reduce the chances of developing a severe depressive mood. As described in Chapter IV, about 34% of the variability in anger seemed to be assumed by a set of four predicting variables (Perceived Care, Perceived Decisional Involvement, Functional Impairment, and Personal Control). However, when all these four predictor variables are entered together, only one variable, Perceived Care, seems to be making a significant unique contribution to the model. About 58% of the variability can be predicted by Perceived Care alone, and three other predictor variables were not found to be significant predictors of anger experience.

A plausible explanation for why these three predicting variables were not found to be significant may have to do with the nature of these variables. For example, impairment in function is one of the major reasons for many residents to consider moving to assisted living facilities. Involvement in decisional making is something that these residents have already gone through before coming to their current residence. Personal Control, or perceptions that one has control over his or her environment, may be influenced by the concept of assisted living facilities. In other words, residents may be more accepting of assuming less personal control by relying on staff for care and/or simply have less desire to control due to living in a community setting. In sum, these three variables relate to issues that often occur prior to coming to their current residence in assisted living facilities; whereas, perceived care targets residents' current perceptions of daily issues. Anger experience may be better reflected by current issues than those of the past.

In the present study, Perceived Care was measured by a single question, "On a

scale of 1 to 10, how satisfied are you with the care provided by your assisted living facility?" On this question, residents evaluated their overall perceptions towards the care provided by their assisted living facilities. A higher number represents stronger satisfaction. Many residents, who provided reasons for not giving a perfect 10 on this scale, appeared to emphasize their experiences around food services and interaction with staff and administration. In assisted living facilities, residents are provided with three meals a day and a significant portion of their day will be spent in the dining room being served by wait staff. It is understandable that they used their experience around food services to measure their care level because this is one of the places where they have direct interaction with staff at assisted living facilities. Likewise, administrative staff and aides are an integral part of assisted living facilities and have direct interaction with the residents daily. The key here seems to be residents' interpretation of how well they feel they are treated or cared for by those who interact with them daily at the assisted living facility.

Anger in the present study was measured by the Anger-Hostility scale of the POMS. As described in Chapter IV, this measure's outcome had an uneven distribution and had to be transformed in order to proceed with quantitative data analysis. Although there were several outliers, including the two extremes that were more than three standard deviations from the mean, the majority of the study participants (90%) fell within  $\pm 1.5$  standard deviations from the mean. In the POMS's technical manual, using  $\pm 1.5$  standard deviations from the mean is suggested as common cut-points for cases requiring special attention (McNair & Heuchert, 2003). Surprisingly, approximately 47% male ( $n = 9$ ) and 25% female ( $n = 16$ ) scored 0 on this scale indicating not even a single occasion where

they felt “annoyed” during the past week including the day of study participation. On the other hand, these individuals often revealed an experience that relates to anger after completion of the study participation during our casual conversation. Furthermore, some of those who scored 0 were observed to be “annoyed” by needing to answer to this measure, but did not admit to having such experience. This observation suggests that these elderly individuals may be considering expressing or relating anger inappropriate. This has important implications for staff and professionals working with the residents in assisted living facilities; some residents may downplay their experience of anger, contrary to their true experience.

In conclusion, the results of this study indicate that residents of assisted living facilities who report anger experience are also likely to report symptoms of depression. Residents’ anger experience is best predicted by their perception of care from their assisted living facilities, which many of them associate with their interpretation of food services and relationship with staff and administration. The study also revealed unexpected incidental finding that some of the residents may underreport their anger experience, which further highlights the role of anger. Therefore, the findings presented here found anger as a significant issue among residents of assisted living facilities, and it encourages the implementation of appropriate interventions to decrease residents’ anger.

#### Implications of the Present Study

There are several clinical implications for the present study. First, interventions that help control or alleviate residents’ experiences of anger need to be implemented. For example, if a resident is found to be experiencing a significant level of anger, he or she

may benefit from individual psychotherapy, peer groups, workshops that discuss coping skills, and/or setting up a meeting with a representative of assisted living facilities. One of the assisted living facilities where this research was conducted has a monthly discussion group where residents express their concerns. A consulting psychologist runs the group and provides opportunities for residents to express their thoughts and voice what they have been feeling. Staffing a full-time mental health professional may not be a current common practice; however, it is worth exploring as evidenced by higher mental health problems among these residents.

Another important implication is staff training. In the current study, almost one in every four residents was considered depressed, and those who reported experiencing depressive symptoms appeared to score high on the anger scale. When asked about perception of care, many of the residents shared their experiences around food services and how they feel about the way staff and administration treat them. It is very important for the staff to be educated that there is a relationship between anger and depression and that their day-to-day interaction with residents has significant impact on the residents' emotional experience. It is critical for them to be aware of their behavior and its consequences when interacting with these residents. Overall, the key here is to provide an environment where residents feel connected, respected, and cared for.

In addition to offering staff training on how to best work with residents, it is also important to train staff to be able to identify signs that require special attention. Observations from this study suggested participants had a tendency to minimize their anger experience. It is an advantage for those who interact with residents daily (e.g., nurses and health aides) to be able to pick up on changes. Therefore, any staff that has

seen or noticed a change in the resident's emotional state for a certain duration, with or without a preceding event, should be encouraged to bring it to an appropriate person's (e.g., supervising nurse, mental health professionals) attention.

### Limitations of the Study

Despite some of the empirical evidence found in the current study, there are limitations that need to be addressed. The current study relied on participants' self report to measure variables used in this study. Self reporting is unlikely to be bias free. Furthermore, some of the participants were legally blind and had to have the questionnaire orally presented to them. Having to respond verbally may have produced different outcomes compared to those who self-administered and completed the measure. In addition, some of the questions in the Desired Control-Short Form required reversed scoring, and as a result, these questions appeared to be somewhat confusing. Therefore, answers obtained in this study may not have accurately captured participants' responses.

As explained in the discussion section in this chapter, the present study used the single question predictor of perceived care. Many of the participants spoke about their own criteria when evaluating their overall perception toward the care from the facility (e.g., food service and interaction with staff and administration). Although some themes have emerged, it is unclear how much variability exists among this predictor. Given the significance of this particular variable, considering a measure with subscales to explore perceived care may have provided additional useful information.

Another limitation is that the results obtained from this study cannot be generalized to all residents of assisted living facilities. Participants of this study were pre-



screened by using the MMSE cut-off score based on his or her age and education level and an ability to complete the demographic questionnaire form. No one was excluded nor withdrew from the study once they were officially recruited into the study. Therefore, results are likely to be generalized to many individuals including residents with mild to moderate cognitive impairment, but results may not apply to those with a severe level of cognitive impairment. In addition to this, the present study did not consider possible differences related to residents' current use of psychotropic medication and physical disabilities and conditions.

#### Recommendations for Future Research

As the number of elderly individuals grows, more people will be utilizing this type of long term care service. There seems to be an increase in the number of published studies that investigated mental health issues in assisted living facilities, but little is known. Therefore, there is a continued need for research specifically for the elderly who reside in the assisted living facility. The current study provided empirical evidence that there is a positive relation between depression and anger. It is important to find out how best one can identify residents with anger experience. Although Personal Control measured by the discrepancy between the Desired Control-Short Form Part I and Part II was not found to be significant, many residents expressed their sense of loss of control due to giving up driving. Thus, future research should include impact of sense of loss in control regarding giving up driving.

Another important factor to consider is linkages between depression and discharge rate to nursing homes and higher mortality rate that have been previously

reported (Watson et al., 2003). Future research might focus on predicting health and survival of the residents by conducting longitudinal follow-ups including information such as, residents' physical disabilities, medical diagnoses, and use of psychotropic medications.

It is also recommended to include qualitative measures as insightful information was obtained while conversing casually after the study participants. In addition, obtaining behavioral observations from family and staff members who are assigned to the resident will be helpful, especially because many residents appeared to be minimizing their experience when filling out the Anger-Hostility scale. Furthermore, some of the participants demonstrated difficulty in deciding on the answer choice on the measures used in the current study. Considering higher rate of cognitive impairment in assisted living facilities, using qualitative techniques and others' input to aid the data collected on quantitative measures may strengthen the significant findings of the study.

Lastly, future studies should explore participants' mental health history. It is useful to know when interpreting the results whether or not residents who scored high on depression and/or anger scales are utilizing mental health services. Among anger related studies, personality trait is known to influence anger experience. "High trait anger individuals experience more frequent and more intense state anger" (Deffenbacher et al., 1996, p. 131). It is worthwhile to investigate the impact of personality on residents' experience of anger in assisted living facilities and to replicate the study by controlling for personality.

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Appendix A  
Demographic Questionnaire



Research ID#: \_\_\_\_\_

Date Completed: \_\_\_\_\_

### Demographic Questionnaire

1. Date of Birth: \_\_\_\_\_
2. Current marital status:           Married  
  Divorced  
  Widowed  
  Other (Specify: \_\_\_\_\_ )
3. Gender:                               Male  
  Female
4. Race & Ethnicity: \_\_\_\_\_
5. What is your highest education level? \_\_\_\_\_
6. What was your former occupation? \_\_\_\_\_
7. When did you enter an assisted living facility? \_\_\_\_\_
8. Where did you live before entering an assisted living facility?  
  
Private Residence  
Independent Living  
Hospital  
House of a relative  
Other:
9. In your opinion, why did you enter an assisted living facility?  
  
\_\_\_\_\_
10. On a scale of 1 to 10, how satisfied are you with the care provided by your assisted living facility? (Higher number represents stronger satisfaction.)  
  
\_\_\_\_\_

11a. Was it your decision to come live in an assisted living facility?

1	2	3
No		Yes

11b. Did others consult with you much about the decision to come stay in an assisted living facility?

1	2	3
No		Yes

11c. Do you feel that you influenced the decision to come here?

1	2	3
No		Yes

11d. How much input would you say that you had in the decision to come live in an assisted living facility?

1	2	3
None		A great deal

\*11a through 11d are adopted from Davidson & O'Connor's (1990) the Perceived Control Measure.