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# The Protective Roles Of Primary And Secondary Control Strategies Among Familial Caregivers Of Older Adults With Dementia

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THE PROTECTIVE ROLES OF PRIMARY AND SECONDARY CONTROL  
STRATEGIES AMONG FAMILIAL CAREGIVERS OF OLDER ADULTS WITH  
DEMENTIA

by

Nicole Brenda Haverstock  
Bachelor of Arts, Brandon University, 2011

A Thesis

Submitted to the Graduate Faculty

of the

University of North Dakota

in partial fulfillment of the requirements

for the degree of

Master of Arts

Grand Forks, North Dakota

December  
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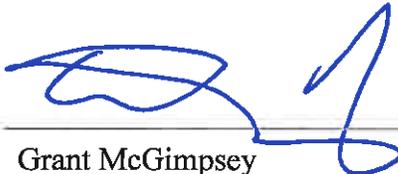
This thesis, submitted by Nicole Brenda Haverstock in partial fulfillment of the requirements for the Degree of Master of Arts from the University of North Dakota, has been read by the Faculty Advisory Committee under whom the work has been done and is hereby approved.

  
\_\_\_\_\_  
Joelle Ruthig, Ph.D.

  
\_\_\_\_\_  
F. Richard Ferraro, Ph.D.

  
\_\_\_\_\_  
Joseph Miller, Ph.D.

This thesis is being submitted by the appointed advisory committee as having met all of the requirements of the School of Graduate Studies at the University of North Dakota and is hereby approved.

  
\_\_\_\_\_  
Grant McGimpsey  
Dean of the School of Graduate Studies

8/17/16

\_\_\_\_\_  
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## PERMISSION

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Nicole Brenda Haverstock  
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*To my parents Bev and Jack,  
my sister Jenna,  
and my grandparents Ernie and Gail  
for their love and encouragement.*

## ABSTRACT

Caring for an older family member with dementia can be extremely stressful, often resulting in diminished psychological health. Prior research has shown that a strong sense of control protects well-being during stressful times. Therefore, greater perceived control may serve to buffer the effects of stress on familial caregivers' psychological health. According to control theorists (Heckhausen & Schulz, 1995; Rothbaum, Weisz, & Snyder, 1982), a general sense of control is maintained through a dual process involving direct attempts to change the environment (i.e., primary control strategies) and attempts to inwardly adjust cognitions to align with the environment (i.e., secondary control strategies). The present study applied this dual process model of perceived control to familial caregivers of an older adult with dementia. Participants were 51 primary familial caregivers who completed either an online or paper and pencil survey assessing their use of primary and secondary control strategies, their overall sense of control, and several measures of well-being. The results showed that greater use of the secondary control strategy of positive reappraisal predicted a stronger sense of control in general. In turn, this stronger sense of general control predicted greater life satisfaction and more positive emotions, as well as less perceived stress and fewer depressive symptoms. Findings contribute to a better understanding of the protective role of control strategies among dementia caregivers.

## **CHAPTER I**

### **INTRODUCTION**

Older adults with dementia often require extensive care and can place tremendous psychological, emotional, physical, and financial burden on familial caregivers (e.g., Connell, Janevic, & Gallant, 2001). Given that an estimated 65.7 million people worldwide will suffer from dementia by 2030 (Prince et al., 2013) and that the majority of older adults with dementia are cared for at home by family members (Alzheimer's Association, 2014), it is imperative to understand how familial caregivers cope with caregiving-related stress. The main objective of the current study was to apply the dual process model of perceived control (Heckhausen & Schulz, 1995; Rothbaum, Weisz, & Snyder, 1982) to examine psychosocial factors that serve to protect familial dementia caregivers against stress, thereby contributing to better psychological well-being and greater life satisfaction.

#### **Dementia in Later Life**

Dementia is a general term for a variety of diseases and conditions that are characterized by a decline in memory or other cognitive skills, including language and learning, as a result of neuron damage and death in the brain (Alzheimer's Association, 2014; Centers for Disease Control and Prevention, 2013). Alzheimer's disease is the most common type, accounting for an estimated 60 to 80 percent of dementia cases (Alzheimer's Association, 2014). Difficulty with short-term memory, apathy, and depression are often early clinical symptoms. In advanced stages, individuals fail to

recognize loved ones, experience impaired communication, disorientation, confusion, poor judgement, behavioral change, and eventually become bed-bound and require 24-hour care (Alzheimer's Association, 2014). Most individuals are cared for at home by family members; in fact, there are currently more than 15 million informal caregivers of people with Alzheimer's disease and other dementias in the United States (Alzheimer's Association, 2014).

Although dementia is not a result of normative aging, advanced age is the greatest risk factor, with most people diagnosed at 65 years of age or older (Alzheimer's Association, 2014). The first baby boomers turned 65 in 2011 and the youngest cohort will reach the age of 65 by 2030. This age group will account for approximately 72 million people, or 19% of the total U.S. population (Vincent & Velkoff, 2010). The projected prevalence of Alzheimer's disease alone is expected to reach 7.1 million by 2025 – a 40% increase from the estimated 5 million older Americans who currently live with the disease (Hebert, Weuve, Scherr, & Evans, 2013). Therefore, more people moving into later adulthood will contribute to a sharp increase in prevalence of older adults with dementia and caregivers needed to meet their daily needs.

### **Caregiver Stress and Coping**

Informal caregiving is the act of providing unpaid assistance to another individual and attending to their daily needs. This may involve helping with instrumental (e.g., household chores) or basic (e.g., bathing) activities of daily living, administering medications, and managing behavioural problems (Alzheimer's Association, 2014). Caring for a loved one with dementia is often a major source of distress for other family members (e.g., Razani et al., 2014). More than one-third of dementia caregivers agree

that they “had no choice in becoming a caregiver,” suggesting greater perceived burden among these individuals (Alzheimer’s Association, 2014, p.57). The majority of caregivers are women, who are in their early to mid- fifties and who are providing care for a parent. These caregivers are often balancing other demands, such as family- and work-related responsibilities. Most familial caregivers are employed, married or cohabitating, and about one-third has at least one child under the age of 18 living at home (Bouldin & Andresen, 2010). In addition, almost one-quarter of caregivers live with their loved one with dementia and provide 24-hour care, seven days a week (Alzheimer’s Association, 2014).

In terms of psychological well-being, familial dementia caregivers experience greater burden of care in terms of hours of care and number of tasks performed (National Alliance for Caregiving & AARP, 2009), higher levels of stress (Bertrand, Fredman, & Saczynski, 2006), and more depressive symptomology (Fisher et al., 2011) compared to nondementia caregivers and noncargivers (Oken, Fonareva, & Wahbeh, 2011). In particular, dementia caregivers exhibit significant physiological stress at morning awakening (de Vugt et al., 2005). In addition, risk of depressive symptoms, such as feelings of loneliness, hopelessness, and loss of interest, have been shown to increase steadily over time (Ornstein, Gaugler, Zahodne, & Stern, 2014), and caregivers of older adults with dementia also experience lower levels of life satisfaction (Sequeira, 2013). Similarly, negative emotions such as grief (Sanders, Ott, Kelber, & Noonan, 2008) and hostility (Razani et al., 2014) have been reported among familial caregivers.

When asked about the most difficult aspects of caring for a family member with dementia, caregivers indicate being most distressed by the delusions, agitation, and

irritability present in the individual with dementia (Fauth & Gibbons, 2014). Spousal caregivers report that the loss of their relationship, uncertainty about the future, and lack of control over the disease and its consequences are especially challenging (O'Shaughnessy, Lee, & Lintern, 2010). Finally, aside from the psychological burden placed on familial caregivers, the “combination of loss, prolonged distress, physical demands of caregiving, and biological vulnerabilities of older caregivers” contribute to an increased risk for physical health problems and mortality among caregivers (Schulz & Martire, 2004, p. 242).

Because caring for a loved one with dementia is so stressful, understanding how caregivers respond to stress in this context can provide insight into how to lessen the negative impact on their subsequent psychological well-being. Familial dementia caregivers attempt to manage the behavioral and psychological symptoms of the care recipient in a variety of ways: encouraging the person with dementia to engage in activities such as going for walks, drives, and day trips; administering medications despite concerns about effectiveness for symptom management; identifying behavioral triggers (e.g., caregiver frustration leads to agitation in the person with dementia); and infantilizing by coaxing or reprimanding the person with dementia (Moore, Ozanne, Ames, & Dow, 2013).

Existing literature on coping among caregivers largely focuses on the psychological benefits of problem-focused and emotion-focused coping strategies (Cooper, Katona, Orrell, & Livingston, 2008; Kneebone & Martin, 2003). The Transactional Model of Stress and Coping (Folkman, Lazarus, Pimley, & Novacek, 1987) is limited to these two types of coping strategies. However, additional coping strategies

not assessed within the transactional model may benefit caregivers in managing the stress associated with their caregiving role. Fortunately, other theoretical perspectives, such as the dual process model of control (Heckhausen & Schulz, 1995; Rothbaum et al., 1982), encompass a wider range of both internally- and externally-directed coping strategies that may benefit familial dementia caregivers. Previous research examining this wider range of control strategies and resulting sense of control among dementia caregivers is limited and warrants further investigation.

### **A Sense of Control**

A basic human motivation is the desire to actively influence outcomes and events in one's daily life (Skinner & Chapman, 1984). A sense of control has traditionally been defined as perceived contingency between one's external actions and subsequent outcomes (Rotter, 1966). According to Weiner (1985), attributing outcomes to controllable causes will increase goal-directed behavior. For example, familial dementia caregivers who attribute administering medications as being controllable are likely to be diligent at this task in attempt to manage behavioral and psychological symptoms and avoid symptom exacerbation in their loved one.

Previous research has demonstrated the benefits of a sense of control to psychological well-being. A greater sense of control has been found to be associated with lower levels of distress (Bailis, Segall, Mahon, Chipperfield, & Dunn, 2001; Thompson et al., 1998, 2006), fewer negative emotions (Ruthig, Chipperfield, Perry, Newall, & Swift, 2007; Thompson, Nanni, & Levine, 1994), less depressive symptomatology (Bailis et al., 2001; Thompson et al., 1994), better emotional well-being in stressful situations (Thompson & Collins, 1995), greater life satisfaction (Lang & Heckhausen, 2001; Ruthig

et al., 2007), more frequent positive emotions (Freund & Baltes, 1998; Lang & Heckhausen, 2001; Ruthig, Trisko, & Chipperfield, 2014), and better overall quality of life (Hasson-Ohayon, Walsh, Roe, Kravetz, & Weiser, 2006). In contrast, a sense of control is inversely related to hospital admissions and mortality (Chipperfield et al., 2012).

Despite the clear benefits to psychological well-being in general, and during stressful situations in particular, there is a paucity of research examining the protective role of a sense of control in the domain of dementia caregiving. One exception is a study by O'Rourke et al. (2010) that found that a sense of control among spouses of persons with Alzheimer's disease predicted fewer subsequent depressive symptoms. Similarly, another study assessed a sense of control among informal dementia caregivers and found that a greater sense of control was associated with enhanced quality of life (Graff et al., 2007). In a third study of familial dementia caregivers, greater expectancies of control were negatively correlated with helplessness and perceived burden (Contador, Fernández-Calvo, Palenzuela, Miguéis, & Ramos, 2012).

Each of the above examples of the limited research on a sense of control among familial dementia caregivers utilized the traditional conceptualization of perceived control that focuses solely on external actions and outcomes. That traditional conceptualization has been expanded by several control theorists, starting with Rothbaum et al. (1982). These authors posited that inward behaviors such as passivity, withdrawal, and submissiveness are not necessarily signs of relinquished control as interpreted by helplessness theorists (e.g., Abramson, Seligman, & Teasdale, 1978), but that they may be a way of sustaining control when environmental influence is difficult or impossible.

Likewise, Chipperfield et al. (2012) refer to a psychological state of being “in control” that exists both when influencing environmental outcomes is and is not perceived as possible. Rather than feeling helpless and overwhelmed, individuals with a strong sense of control believe that they can either directly change their situation or change their appraisals of it (Wrosch, Heckhausen, & Lachman, 2000). This expanded conceptualization of a sense of control has not previously been systematically applied to the context of dementia caregivers. For the purposes of the current study, a sense of control was based on this expanded conceptualization in terms of referring to a psychological state resulting from either outwardly influencing the environment or from inwardly adjusting one’s cognitions to fit with the environment. Following is a discussion of the internally and externally directed processes that contribute to a sense of control.

### **Primary and Secondary Control Strategies**

Clearly, a strong sense of control is associated with optimal psychological adjustment, even under stressful circumstances (e.g., Ruthig et al., 2007; Thompson & Collins, 1995). As such, it is imperative to understand how individuals maintain or regain a sense of control in challenging situations. Two prominent theoretical frameworks of perceived control, namely Rothbaum et al.’s (1982) Two-Process Model of Perceived Control and Heckhausen and Schulz’s (1995) Life-Span Theory of Control, view maintaining and regaining a sense of control as a dual process involving primary and secondary control strategies. Primary control strategies involve action directed outward to the external world, whereas secondary control strategies involve action directed inward on the self (Heckhausen & Schulz, 1995). Primary control strategies may include persistence and investment of time or effort, and are direct attempts to change one’s

social or physical environment to fit with a desired outcome (Wrosch et al., 2000). For example, an individual who is caring for a family member with dementia may engage in the primary control strategies of actively seeking support or gathering information about the disease in an attempt to maintain his or her sense of control in the caregiving role.

In contrast, secondary control strategies consist of adjusting cognitions when individuals perceive their present circumstances as unchangeable (Wrosch et al., 2000) and such strategies may include acceptance, positive reappraisal, lowering aspirations, and disengagement (Chipperfield, Perry, Bailis, Ruthig, & Chuchmach, 2007; Heckhausen & Schulz, 1995). For example, the familial dementia caregiver may engage in the secondary control strategy of deriving purpose and meaning in life as their loved one's caregiver or they may alter their expectations about the relationship they have with the dementia patient. These examples illustrate attempts to gain a sense of control and sustain it during the progression of the disease without outwardly attempting to alter external outcomes.

Both of the Two-Process Model of Perceived Control (Rothbaum et al., 1982) and the Life-Span Theory of Control (Heckhausen & Schulz, 1995) acknowledge that individuals shift between primary and secondary strategies in order to sustain an overall sense of control. They also recognize that the preferred strategies shift as stressors and individual constraints change. That is, as direct outward influence diminishes in a situation, an individual may need to shift from primary to secondary control strategies to maintain an overall sense of control (Heckhausen & Schulz, 1995). Thus, availability of both types of control strategies is considered optimal (Chipperfield, Perry, & Menec, 1999; Wrosch et al., 2000). Indeed, a study of older adults found that those who engaged

in a combination of primary and secondary control strategies when adjusting to age-related challenges enjoyed more positive emotions and experienced lower levels of stress (Haynes, Heckhausen, Chipperfield, Perry, & Newall, 2009).

Primary and secondary control strategies are particularly important in maintaining a sense of control in stressful situations, such as caring for a loved one with dementia. The use of control strategies is positively associated with subjective well-being (e.g., Wrosch et al., 2000). Therefore, caregivers who have access to primary and secondary control strategies, and are effective in using them when most appropriate, should have a strong sense of control and optimal psychological well-being. Although past research has not applied the dual process model to systematically examine use of control strategies as contributors to an overall sense of control and psychological well-being among dementia caregivers, a handful of studies have examined specific types of control strategies used by these caregivers. For example, a study by Papastavrou, Kalokerinou, Papacostas, Tsangari, and Sourtzi (2007) showed that caregivers who used more of the primary control strategy of problem-solving experienced less burden. Likewise, use of the primary control strategies of seeking information and social support have been found to be associated with dementia caregiver resilience in terms of less reported suicidal ideation (O'Dwyer, Moyle, & van Wyk, 2013). Additionally, Williams, Morrison, and Robinson (2014) conducted a qualitative analysis based on a small sample of dementia caregivers and found that those who engaged in the primary control strategies of planning ahead and time management reported a stronger sense of control in the caregiving role.

Aside from specific primary control strategies, familial caregivers who use the secondary control strategy of positive reappraisal also reported less burden and

depression (Papastavrou et al., 2011). A meta-analysis concluded that familial dementia caregivers who used the secondary control strategy of acceptance experienced lower levels of anxiety and depression (Li, Cooper, Bradley, Shulman, & Livingston, 2012). Likewise, Black, Schwartz, Caruso, and Hannum (2008) found that older spousal dementia caregivers utilized the secondary control strategy of finding meaning in their caregiving role in response to their changing circumstances and perceived lack of control.

Together, the limited research examining specific types of primary or secondary control strategies suggest that use of such strategies benefits the psychological well-being of familial caregivers of people with dementia. However, no prior research has systematically applied the dual process theoretical framework of control to examine how both primary and secondary control processes contribute to an overall sense of control among dementia caregivers. This line of research is worthy of consideration given that prior intervention efforts have shown that a sense of control is malleable and can be enhanced, leading to diminished levels of depression, negative affect (Zautra et al., 2012), anxiety, and perceived stress (Hintz, Frazier, & Meredith, 2014). This research supports the clinical implications of the present study by demonstrating that a sense of control can be enhanced. If a sense of control is related to psychological well-being among dementia caregivers, then teaching caregivers primary and secondary control strategies will contribute to protecting their psychological well-being from the negative impact of the stress associated with their caregiving role.

### **Purpose of the Present Study**

The present study focused on primary and secondary control strategies and a sense of control in buffering against stress and poor psychological health among familial

dementia caregivers. Specifically, by applying the dual process model of control (Heckhausen & Schulz, 1995; Rothbaum et al., 1982), primary and secondary control strategies were examined as predictors of an overall sense of control, both within the caregiving role and in general. This overall sense of control was then examined in relation to various well-being indices: perceived stress, depressive symptoms, suicidal ideation, life satisfaction, and discrete positive and negative emotions (see Figure 1 below).

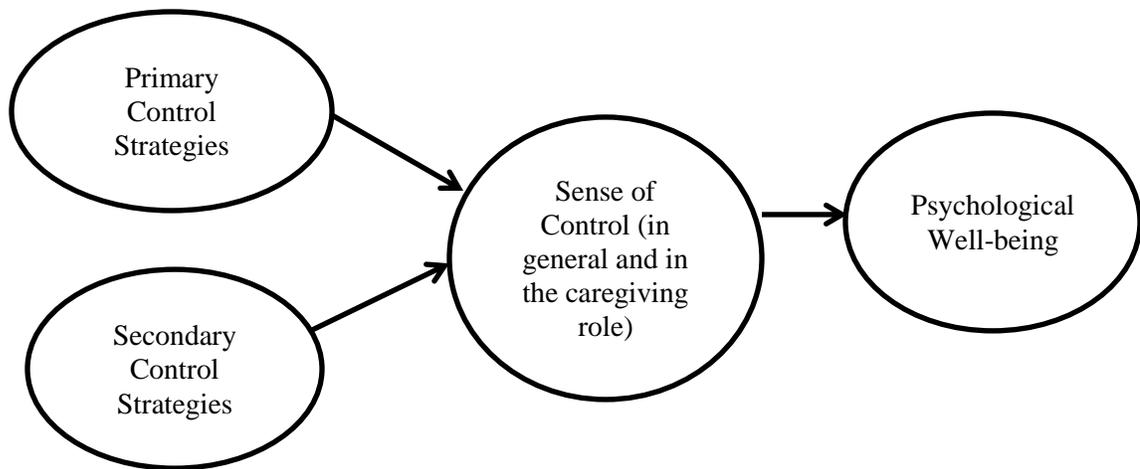


Figure 1. A dual process model of control strategies, overall sense of control, and psychological well-being.

Hypothesis 1: Based on the dual-process model of control (Heckhausen & Schulz, 1995; Rothbaum et al., 1982), greater use of primary and secondary control strategies among familial caregivers of people with dementia was expected to predict a stronger sense of control in general and within the caregiving role.

Hypothesis 2: A greater sense of control (in general and within the caregiving role) will be positively associated with life satisfaction and positive emotions among familial caregivers of people with dementia.

Hypothesis 3: A greater sense of control (in general and within the caregiving role) will be negatively associated with perceived stress, depressive symptoms, suicidal ideation, and negative emotions among familial caregivers of people with dementia.

In addition to the above hypotheses, the caregivers' age, relationship to the care recipient (spouse vs. other family member), whether the care recipient lives with the caregiver, length of time in the caregiver role, and the number of instrumental activities of daily living (Lawton & Brody, 1969) that the caregiver performs for the care recipient were examined as potential covariates. Additional demographic information assessed included gender, race, geographic region, education level, marital status, employment status, household income, and whether the caregiver has additional dependents (e.g., child or adult dependent). Though not formally hypothesized, the current study also explored which types of primary and secondary control strategies are used most frequently by caregivers, and whether primary and secondary control strategies differ in the extent to which they are associated with an overall sense of control and each component of psychological well-being.

## **CHAPTER II**

### **METHOD**

#### **Participants and Procedure**

The study included 51 individuals who identified as the primary caregiver to a family member with dementia who was 60 years or older and not living in a hospital or long-term care facility. Given that the vast majority of dementia care recipients are age 60 or older (Bouldin & Andresen, 2010), the sample is likely to be reflective of caregivers in the general population.

The study was added to the Alzheimer's Association TrialMatch database following Institutional Review Board approval and subsequent internal review. The TrialMatch database is accessed by over 180,000 people through the Alzheimer's Association website and offers individuals, including caregivers, the opportunity to participate in dementia-related research. Data was collected online through the Alzheimer's Association TrialMatch database for 28 participants. The study was also added to the Alzheimer Society of Manitoba's website, eNewsletter, and Research Matters flyer. The eNewsletters are circulated to 1,700 email addresses, and the flyers are distributed to attendees at family education events, support groups, and other education events directed to professionals. Sixteen additional participants gave consent and completed the survey online. There were additional caregivers who visited the online survey, but for various reasons did not complete. Overall, of the 86 individuals who visited the online survey, 51% completed it and 49% did not.

Five participants were also recruited from two local caregiver support groups. The researcher attended at least one of the monthly meetings for each group to briefly explain the study and request participation. Lastly, two patients at local Sanford Health clinic locations were informed of the study by their neurologist or neuropsychologist. Individuals from both venues were given the survey to complete at their convenience and return by mail. Some support group members elected to complete and return the survey prior to leaving the meeting. Included with the survey was a study information sheet explaining the research and that the data collected would be anonymous.

In sum, 44 participants completed the study online and seven participants completed the hard copy survey form of the study, for a total of 51 participants on which all subsequent analyses were based.

## **Measures**

**Control strategies.** Primary and secondary control strategies associated with caring for a person with dementia were assessed using the 12-item Assessment of Strategy Use (Step 3; Chipperfield et al., 2007). Participants were instructed that sometimes caregivers experience difficulties in the caregiving role and then asked how frequently they engage in specific coping strategies when they have difficulty with tasks associated with caring for their loved one with dementia (0 = *never*, 1 = *rarely*, 2 = *sometimes*, 3 = *often*, 4 = *almost always*). Primary control strategies were assessed with three items related to task persistence (TP; e.g., “exert more effort in order to do the tasks associated with providing care”) and three items related to task modification (TM; e.g., “continue to try to do the tasks associated with providing care for your loved one, but do them less often”). Secondary control strategies were assessed with three items related to

positive reappraisal (PR; e.g., “look for a positive side to your struggle”) and three items related to goal disengagement (GD; e.g., “see the tasks associated with providing care for your loved one as being less important than you once did”).

In order to assess additional primary and secondary control strategies that may be relevant to the caregiving role, four items from the Measurement Instrument for Primary and Secondary Control Strategies (from the survey Midlife in the United States, MIDUS; Wrosch et al., 2000) were included. These items were modified in order to conform to the instructions and response options in Chipperfield et al. (2007). For example, one item assessing a primary control strategy was changed from “When faced with a bad situation, I do what I can do to change it for the better” (Wrosch et al., 2000) to “do what you can to change it for the better.” The other three items assessed secondary control strategies (i.e., “find you usually learn something meaningful,” “find a different way of looking at things,” and “remind yourself that you can’t do everything”; see Appendix A).

**Sense of control.** A single item was used to assess an overall sense of control (Chipperfield et al., 2012; Chipperfield & Greenslade, 1999). Specifically, participants rated how they generally feel about their level of control in life (1 = *almost totally out of control*, 10 = *totally in control*). As in prior research (Chipperfield et al., 2012), this item was selected to intentionally avoid reference to a particular context or implication about influence or lack of influence. Prior research has demonstrated construct validity of this single-item measure in terms of its positive correlation with a 9-item measure of perceived direct influence ( $r = .66, p < .001$ ) and with a 9-item measure of perceived control in the absence of direct influence ( $r = .34, p < .001$ ; Chipperfield et al., 2012).

Participants also rated how they feel about their level of control within their caregiving role using a single item with the same 10-point response scale (see Appendix B).

**Psychological well-being.** In order to assess their psychological well-being, participants completed the following measures of perceived stress, depressive symptoms, suicidal ideation, life satisfaction, and discrete emotions.

*Perceived stress* was assessed by having participants respond to the 14-item Global Perceived Stress Scale (Cohen, Kamarck, & Mermelstein, 1983) by rating how often they felt or thought a certain way during the last month using a 5-point Likert scale (0 = *never*, 1 = *almost never*, 2 = *sometimes*, 3 = *fairly often*, 4 = *very often*; see Appendix C). Perceived stress scores were obtained by reverse scoring the seven positive items (e.g., “In the last month, how often have you been able to control irritations in your life?”), and then summing all items. Cohen et al. (1983) reported an average reliability of  $\alpha = .85$  across three samples.

The shortened 10-item Center for Epidemiological Studies Depression Scale (CESD-10; Andresen, Malmgren, Carter, & Patrick, 1994) asked participants to rate the frequency of *depressive symptoms* during the past week using a 4-point Likert scale (0 = *rarely or none of the time*, 1 = *some of the time*, 2 = *moderate amount of time*, 3 = *most or all of the time*; see Appendix D). The scores were obtained by reverse scoring the two positive items (e.g., “I felt hopeful about the future”), and then summing all items. Higher scores indicated greater depressive symptomology (e.g., “My sleep was restless” and “I felt lonely”). Prior research based on samples of community-dwelling older adults indicates adequate internal reliability of the CESD-10 (i.e.,  $\alpha = .79$ ; Ruthig et al., 2014).

Participants' *suicidal ideation* during their time as a caregiver was assessed using two items adapted from the intensity subscale of the Columbia-Suicide Severity Rating Scale (C-SSRS; Posner et al., 2009). Specifically, participants were asked to rate the frequency and duration of suicidal ideation using 6-point Likert scales. For example, frequency was assessed by asking participants how many times they have had thoughts of suicide as a dementia caregiver (0 = *never*, 1 = *once a month or less*, 2 = *few times per month*, 3 = *once a week*, 4 = *few times per week*, 5 = *daily or almost daily*); response options for this question were modified in order to assess less frequent suicidal thoughts among caregivers. A single item assessing proximity of suicidal ideation, using the same 6-point Likert scale format, was created for the purposes of the current study (see Appendix E). The three items were summed, with higher scores indicating more intense suicidal ideation. If no suicidal ideation was endorsed then the participants were given an intensity rating of zero (Nilsson et al., 2013).

A single item was used to assess *life satisfaction* (Ruthig et al., 2007). Specifically, participants rated their present satisfaction with life using a 5-point Likert-type scale (1 = *very unsatisfied*, 5 = *very satisfied*; see Appendix F). Prior research has demonstrated construct validity of this single-item measure in terms of its positive correlation with a 20-item measure of life satisfaction (Chuchmach, 2002).

In addition, *discrete emotions* were measured by having participants respond to the 20-item Positive and Negative Affect Schedule (PANAS; Watson, Clark, & Tellegen, 1988) by rating how often they felt a certain way during the past few days using a 5-point Likert scale (1 = *very slightly or not at all*, 2 = *a little*, 3 = *moderately*, 4 = *quite a bit*, 5 = *extremely*; see Appendix F). Responses to the positive emotions (e.g., determined) were

summed to create a total score so that higher scores indicated more frequent positive emotions. Likewise, responses to each negative emotion items (e.g., irritable) were summed. Watson et al. (1988) reported Cronbach's alphas of .88 and .85 for positive and negative affect, respectively.

**Sociodemographics.** The following sociodemographic information was also collected to examine the potential associations with caregiver well-being: caregiver age, relationship to the care recipient, whether the care recipient lives with the caregiver, length of time in the caregiver role, number of instrumental activities of daily living (Lawton & Brody, 1969) that the caregiver performs, gender, race, geographic region, education level, marital status, employment status, household income, and whether the caregiver has additional dependents (see Appendix G).

## CHAPTER III

### RESULTS

#### Preliminary Analyses

The majority of the 51 primary caregivers of a family member with dementia who participated in the study were female (88%), Caucasian (92%), in a committed relationship (76%), not currently working, had earned at least an Associate's degree, and had a total household income before deductions of \$40,000 or over. Participants ranged in age from 31 to 82 years old ( $M = 57.71$ ) and had been caregiving for an average of three and a half years, assisting with an average of four instrumental activities of daily living. Most (63%) caregivers were the daughter of their loved one with dementia, and were not responsible for additional dependents. The majority of care recipients were female (71%) and living with their caregiver (see Table 1).

Table 1. Sociodemographics of Familial Dementia Caregivers.

Variables	<i>M</i> ( <i>n</i> )	<i>SD</i> (%)	Range
Age	57.71	13.10	31-82
Number of years caregiving	3.50	3.37	<1-19
Number of ADLs assisting with	4.14	2.44	0-9
Relationship to care recipient:			
Spouse	(14)	(29)	-
Other family member	(35)	(71)	-
Gender: Female	(43)	(88)	-

Table 1 cont.

Variables	<i>M</i> ( <i>n</i> )	<i>SD</i> (%)	Range
Race:			
African American	(3)	(6)	
Asian	(1)	(2)	
Caucasian	(44)	(92)	-
Geographic region (US data):			
Midwest	(13)	(37)	-
Northeast	(12)	(34)	-
South	(8)	(23)	-
West	(2)	(6)	-
Education: Associate's degree or higher	(33)	(67)	-
Marital status:			
Single, never married	(5)	(10)	
Married or cohabitating	(37)	(76)	-
Widowed	(2)	(4)	
Divorced or separated	(5)	(10)	
Employment status:			
Fully retired or never employed	(25)	(51)	-
Working full-time, part-time, or casually	(24)	(49)	-
Total household income \$40,000 and over	(36)	(75)	-
No additional dependents	(38)	(79)	-
Care recipient			
Gender: Female	(35)	(71)	-
Lives with caregiver	(31)	(63)	-

Table 2 shows the descriptive statistics for each of the individual control strategies examined. The primary control strategy used most often by caregivers was doing what they could to change their caregiving tasks for the better ( $M = 2.94$ ), whereas modifying the frequency of the caregiving tasks was used least often ( $M = 1.69$ ). A paired-samples t-test indicated that the average frequencies of use between these two

strategies were significantly different,  $t(50) = 7.10, p < .001$ . Looking for a positive side to their struggle was the secondary control strategy used most frequently ( $M = 2.96$ ), whereas downgrading the necessity of the caregiving tasks was used least frequently ( $M = 1.10$ ). The average frequencies of use for the two strategies were significantly different,  $t(50) = 10.39, p < .001$ . The average frequencies of use for the primary and secondary control strategies used most often did not significantly differ,  $t(50) = 0.15, p = .881$ .

Table 2. Descriptive Statistics of Primary and Secondary Control Strategies.

	<i>M</i>	<i>SD</i>	Range
Primary Control Strategies			
Persist at task as always	2.84	0.95	1-4
Increase effort exertion	2.76	0.76	1-4
Endorse ability attribution	2.67	0.82	1-4
Modify task components	2.04	1.02	0-4
Modify task timing	2.43	0.94	1-4
Modify task frequency	1.69	0.95	0-4
Change it for the better	2.94	0.68	1-4
Secondary Control Strategies			
Downgrade personal expectations	1.24	0.92	0-3
Downgrade task importance	1.39	1.02	0-4
Downgrade task necessity	1.10	0.81	0-3
Look for a positive side	2.96	0.89	1-4
Reduce/reserve effort	1.80	0.87	0-4
Endorse optimistic social comparison	2.37	1.23	0-4
Learn something meaningful	2.43	1.01	0-4
Find a different way of looking at things	2.69	0.76	1-4
Remind self that I can't do everything	2.27	0.92	0-4

To examine the psychometric structure of the control strategies, separate principal component exploratory factor analyses using varimax rotation of the seven primary control strategies and nine secondary control strategies were conducted. Table 3 shows the results of the principal component analysis of the seven primary control items in which a two-factor solution emerged that was largely consistent with Chipperfield and Perry's (2006) theoretical constructs. The primary control items loaded onto factors reflecting task persistence (Factor 1) and task modification (Factor 2), explaining 51% of the total variance. Given that the additional item from Wrosch et al. (2000; i.e., "do what you can to change it for the better") conceptually fits with task modification, it was expected that this item would load onto Factor 2. Surprisingly, it loaded onto Factor 1 to reflect task persistence. One task modification strategy (modifying task timing) was omitted due to double-loading. Removal of this item resulted in an increase in total variance explained from 51% to 55% and inter-item reliability for the task modification primary control strategy composite significantly improved from  $\alpha = .54$  to  $\alpha = .64$ . See Table 3 for individual item loadings. Composite scores were also created using the mean of the four task persistence items ( $\alpha = .55$ ). Overall, task persistence ( $M = 2.80$ ,  $SD = 0.53$ ) was used more frequently than task modification ( $M = 1.86$ ,  $SD = 0.84$ ),  $t(50) = 5.98$ ,  $p < .001$ .

Regarding the factor analysis for secondary control strategies, endorsing optimistic social comparison, reminding oneself that one cannot do everything, and reducing/reserving effort were each removed due to double loading. Removal of these three items resulted in a two-factor structure of secondary control strategies reflecting positive reappraisal (Factor 1) and goal disengagement (Factor 2), and an increase in the

total variance explained from 54% to 69%. Item loadings for both factors are detailed in Table 3. Composite scores were subsequently created by calculating the mean of the three positive reappraisal items ( $\alpha = .79$ ) and the three goal disengagement items ( $\alpha = .73$ ). Overall, positive reappraisal ( $M = 2.68, SD = 0.76$ ) was used more frequently than goal disengagement ( $M = 1.24, SD = 0.75$ ),  $t(48) = 8.59, p < .001$ . The primary and secondary control composites used most frequently did not significantly differ,  $t(50) = 1.03, p = .307$ .

Table 3. Factor Loadings of Primary Control and Secondary Control Strategies.

Factor	Task Persistence	Task Modification
Primary control strategies		
Increase effort exertion	0.736	-0.040
Change it for the better	0.722	-0.081
Endorse ability attribution	0.690	-0.174
Persist at task as always	0.344	-0.461
Modify task components	0.031	0.831
Modify task frequency	-0.149	0.829
Factor	Positive Reappraisal	Goal Disengagement
Secondary control strategies		
Find a different way of looking at things	0.857	-0.162
Learn something meaningful	0.852	-0.027

Table 3 cont.

Factor	Positive Reappraisal	Goal Disengagement
Secondary control strategies		
Look for a positive side	0.803	-0.108
Downgrade task importance	-0.015	0.890
Downgrade task necessity	-0.137	0.866
Downgrade personal expectations	-0.117	0.644

Table 4 shows the descriptive statistics for each of the psychological well-being measures. Regarding their overall sense of control and psychological well-being, caregivers reported a moderate sense of control in general ( $M = 6.29$ ) that did not significantly differ from their sense of control within the caregiving role ( $M = 5.80$ ),  $t(50) = 1.53$ ,  $p = .132$ . Overall, caregivers were fairly satisfied with life ( $M = 3.20$ ), despite experiencing moderate levels of stress ( $M = 28.41$ ) and depressive symptoms ( $M = 10.98$ ). They reported having few to no suicidal thoughts ( $M = 1.24$ ). Positive emotions ( $M = 30.60$ ) were experienced more often than negative emotions ( $M = 23.14$ ),  $t(49) = 4.43$ ,  $p < .001$ . Feeling determined was the most frequently experienced positive emotion ( $M = 3.46$ ,  $SD = 0.99$ ), whereas feeling excited was the least frequent positive emotion ( $M = 2.46$ ,  $SD = 0.93$ ),  $t(49) = 6.86$ ,  $p < .001$ . Feeling distressed was the most frequent negative emotion ( $M = 2.86$ ,  $SD = 1.16$ ), whereas feeling ashamed was the least frequent negative emotion ( $M = 1.62$ ,  $SD = 1.10$ ),  $t(49) = 5.82$ ,  $p < .001$ .

Table 4. Descriptive Statistics of Psychological Well-Being Measures.

Measures	<i>M</i>	<i>SD</i>	Range	Possible Range	Alpha
General Control	6.29	1.97	2-10	1-10	-
Caregiver Control	5.80	2.20	1-10	1-10	-
Perceived Stress	28.41	8.22	6-44	0-56	.91
Depressive Symptoms	10.98	6.01	0-25	0-30	.84
Suicidal Ideation	1.24	2.29	0-8	0-15	.84
Life Satisfaction	3.20	0.85	2-5	1-5	-
Positive Emotions	30.60	7.08	15-46	20-100	.89
Negative Emotions	23.14	7.66	10-43	20-100	.89

Bivariate correlations among the sociodemographics, control strategy composites (i.e., task persistence, task modification, positive reappraisal, and goal disengagement), sense of control (in general and within the caregiving role), and psychological well-being measures are reported in Table 5. As expected, a general sense of control and within the caregiving role were positively related ( $r = .41$ ). A general sense of control was associated with greater life satisfaction ( $r = .54$ ) and more positive emotions ( $r = .49$ ), as well as negatively associated with perceived stress ( $r = -.60$ ), depressive symptoms ( $r = -.42$ ), and negative emotions ( $r = -.36$ ). Similarly, sense of control within the caregiving role was associated with more positive emotions ( $r = .30$ ), and less perceived stress ( $r = -.42$ ), negative emotions ( $r = -.36$ ), and suicidal ideation ( $r = -.30$ ). In terms of primary control strategies, greater engagement in task persistence was associated with more positive emotions ( $r = .28$ ) and less perceived stress ( $r = -.28$ ), whereas engagement in

task modification was associated with greater perceived stress ( $r = .32$ ). Task persistence was negatively related to task modification ( $r = -.31$ ). In terms of secondary control strategies, positive reappraisal was associated with more positive emotions ( $r = .59$ ), greater life satisfaction ( $r = .37$ ), and a stronger sense of control in general ( $r = .32$ ), but negatively associated with perceived stress ( $r = -.54$ ), depressive symptoms ( $r = -.34$ ), and negative emotions ( $r = -.30$ ). In contrast, goal disengagement was associated with greater perceived stress ( $r = .32$ ) and depressive symptoms ( $r = .28$ ), and negatively associated with life satisfaction ( $r = -.30$ ), positive emotions ( $r = -.30$ ), and sense of control within the caregiving role ( $r = -.30$ ) and in general ( $r = -.29$ ).

None of the sociodemographics were consistently associated with sense of control (in general and within the caregiving role) or the psychological well-being measures. Therefore, sociodemographics were only included as covariates in the main analyses when their correlation to the criterion variable under investigation was greater than .30. Specifically, caregiver gender was included in predicting depressive symptoms ( $r = .32$ ). Household income was included in the models predicting negative emotions ( $r = -.39$ ) and sense of control within the caregiving role ( $r = .32$ ). Finally, the number of instrumental activities of daily living was included in the models predicting suicidal ideation ( $r = .38$ ) and negative emotions ( $r = .31$ ).

Table 5. Bivariate Correlations among Socio-demographics, Control Variables, and Well-Being.

	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
1. Age	.09	-.33*	-.78**	.09	-.19	.16	-.63**	.14	-.46**	.39**	.27	.22	-.24	.21	.03	.18	.14	-.21	-.23	-.24	.13	.09	-.29*
2. Yrs caring	—	.32*	.02	.02	.21	-.09	-.11	.07	-.08	-.07	.04	.09	-.16	-.04	-.03	-.05	-.19	.11	.13	.08	-.13	-.11	.16
3. ADLs	—	—	.26	.17	-.05	-.04	-.05	-.17	-.18	-.28	.18	.15	.03	-.09	-.15	-.12	-.06	.18	.23	.38**	-.23	-.19	.31*
4. Relationship	—	—	—	-.32*	.01	-.36*	.44**	-.13	.33*	-.60**	-.48**	-.16	.12	-.02	-.27	-.08	.09	.16	.17	.06	-.09	-.02	.14
5. Gender	—	—	—	—	.13	.21	-.12	-.09	-.04	-.10	.29*	.20	.11	-.18	.26	-.11	.06	.13	.32*	.24	-.22	-.22	.24
6. Education	—	—	—	—	—	.01	.34*	.23	.16	.03	-.17	-.04	.05	-.28	.33*	-.30*	-.22	.29*	.20	.22	-.29*	-.28	.16
7. Married	—	—	—	—	—	—	-.01	.24	-.06	.05	.35*	.07	-.28*	-.15	.17	.02	-.09	-.05	-.02	.03	.05	-.02	.16
8. Employed	—	—	—	—	—	—	—	.19	.54**	-.26	-.35*	-.32*	.24	-.10	.10	-.18	-.20	.20	.01	.02	.00	-.05	.01
9. Income	—	—	—	—	—	—	—	—	.02	.00	.07	-.19	-.19	-.08	-.02	.13	.32*	-.18	-.30*	.01	.11	.03	-.39*
10. Dependents	—	—	—	—	—	—	—	—	—	-.10	-.34*	-.17	.35*	.04	.38**	-.20	-.19	.09	.03	-.01	.03	.07	.08
11. Recipient gender	—	—	—	—	—	—	—	—	—	—	.30*	-.06	.12	.16	.31*	.13	-.28	-.25	-.18	-.02	.09	.22	-.14
12. Lives with caregiver	—	—	—	—	—	—	—	—	—	—	—	-.05	-.15	-.22	.11	.09	-.01	-.11	-.08	-.08	-.05	-.20	-.05

Table 5. cont.

	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	
13.Task persistence																								
14.Task modification																								
15.Positive reappraisal																								
16.Goal disengagement																								
17.General control																								
18.Caregiver control																								
19.Stress																								
20.Depression																								
21.Suicidal ideation																								
22.Life satisfaction																								
23.Positive emotions																								
24.Negative emotions																								

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

## Main Analyses

Hypothesis 1, that greater use of primary and secondary control strategies will predict a stronger sense of control in general and within the caregiving role, was tested using a linear regression model in which primary and secondary control strategies were the predictors and a general sense of control was the criterion variable. This analysis was repeated for sense of control within the caregiving role as the criterion variable and household income as a covariate (see Table 6). The overall model predicting sense of control in general was marginally significant,  $R^2 = .18$ ,  $F(4, 44) = 2.42$ ,  $p = .063$ . Greater use of the secondary control strategies composite of positive reappraisal predicted a stronger sense of control in general ( $\beta = .30$ ,  $p = .051$ ). The overall model predicting sense of control within the caregiving role was not significant,  $R^2 = .20$ ,  $F(5, 41) = 1.98$ ,  $p = .102$ .

Table 6. Regression Analyses for Hypothesis 1: Predicting General and Caregiver Control.

Predictor	General Control				Caregiver Control			
	B	SE	<i>B</i>	<i>t</i>	B	SE	<i>B</i>	<i>t</i>
Task Persistence	-0.23	0.58	-.06	-0.40	-0.18	0.67	-.04	-0.27
Task Modification	-0.53	0.39	-.23	-1.35	0.11	0.47	.04	0.23
Positive Reappraisal	0.78	0.39	.30*	2.01	0.30	0.44	.10	0.68
Goal Disengagement	-0.31	0.44	-.12	-0.71	-0.86	0.50	-.30	-1.72
Household Income	–	–	–	–	0.49	0.23	.32*	2.15
	$R^2 = .18, p = .063$				$R^2 = .20, p = .102$			

Note. \* $p \leq .05$

Hypothesis 2, that a greater sense of control (in general and within the caregiving role) will be positively associated with life satisfaction and positive emotions, was tested using a linear regression model in which sense of control in general and within the caregiving role were the predictor variables for life satisfaction. This analysis was repeated for positive emotions as the criterion variable (see Table 7). The overall model predicting life satisfaction was significant,  $R^2 = .29$ ,  $F(2, 48) = 9.78$ ,  $p < .001$ . A stronger sense of control in general predicted greater life satisfaction ( $\beta = .54$ ,  $p < .001$ ). The overall model predicting positive emotions was also significant,  $R^2 = .25$ ,  $F(2, 47) = 7.77$ ,  $p = .001$ . A stronger sense of control in general predicted more positive emotions ( $\beta = .44$ ,  $p = .003$ ).

Table 7. Regression Analyses for Hypothesis 2: Predicting Life Satisfaction and Positive Emotions.

Predictor	Life Satisfaction				Positive Emotions			
	B	SE	<i>B</i>	<i>t</i>	B	SE	<i>B</i>	<i>t</i>
General Control	0.23	0.06	.54**	4.02	1.59	0.50	.44*	3.16
Caregiver Control	0.00	0.05	.01	0.06	0.35	0.45	.11	0.79
	$R^2 = .29$ , $p < .001$				$R^2 = .25$ , $p = .001$			

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

Hypothesis 3 states that a greater sense of control (in general and within the caregiving role) will be negatively associated with perceived stress, depressive symptoms, suicidal ideation, and negative emotions. It was tested using a linear regression model in which sense of control in general and within the caregiving role were the predictor variables for perceived stress. The same regression model was repeated for the additional criterion variables of depressive symptoms (including caregiver gender as a

covariate), suicidal ideation (including number of instrumental activities of daily living as a covariate), and negative emotions (including household income and number of instrumental activities of daily living as covariates).

Table 8 shows the results of the regression analyses for Hypothesis 3. The overall model predicting perceived stress was significant,  $R^2 = .39$ ,  $F(2, 48) = 15.51$ ,  $p < .001$ . A stronger sense of control in general predicted less perceived stress ( $\beta = -.51$ ,  $p < .001$ ). The overall model predicting depressive symptoms was also significant,  $R^2 = .32$ ,  $F(3, 45) = 7.02$ ,  $p = .001$ . A stronger sense of control in general predicted fewer depressive symptoms ( $\beta = -.40$ ,  $p = .005$ ), whereas being a male caregiver more depressive symptoms ( $\beta = .29$ ,  $p = .027$ ). The overall model predicting suicidal ideation was significant,  $R^2 = .22$ ,  $F(3, 47) = 4.32$ ,  $p = .009$ . The more instrumental activities of daily living that the caregiver assisted their loved one with, the greater the caregiver's suicidal ideation ( $\beta = .36$ ,  $p = .008$ ). Finally, the overall model predicting negative emotions was significant,  $R^2 = .33$ ,  $F(4, 43) = 5.22$ ,  $p = .002$ . The more instrumental activities of daily living that the caregiver assisted with, the more negative emotions the caregiver experienced ( $\beta = .26$ ,  $p = .044$ ). In addition, a lower household income marginally predicted more negative emotions ( $\beta = -.26$ ,  $p = .059$ ).

Table 8. Regression Analyses for Hypothesis 3: Predicting Perceived Stress, Depressive Symptoms, Suicidal Ideation, and Negative Emotions.

Predictor	Perceived Stress			Depressive Symptoms			Suicidal Ideation			Negative Emotions					
	B	SE	t	B	SE	t	B	SE	t	B	SE	t			
General Control	-2.12	0.51	-5.1***	-4.14	-1.25	0.42	-2.96	-0.01	0.17	-0.01	-0.07	-0.92	0.54	-2.3	-1.70
Caregiver Control	-0.79	0.46	-2.1	-1.73	-0.32	0.37	-0.87	-0.28	0.15	-0.27+	-1.91	-0.54	0.50	-1.5	-1.06
Caregiver Gender	-	-	-	5.21	2.28	2.29*	2.29	-	-	-	-	-	-	-	-
Number of ADLs	-	-	-	-	-	-	-	0.34	0.12	.36***	2.76	0.83	0.40	.26*	2.07
Household Income	-	-	-	-	-	-	-	-	-	-	-	-1.38	0.71	-2.6+	-1.94
	$R^2 = .39, p < .001$			$R^2 = .32, p = .001$			$R^2 = .22, p = .009$			$R^2 = .33, p = .002$					

Note. + $p \leq .06$ . \* $p < .05$ . \*\* $p < .01$ . \*\*\* $p < .001$

## **CHAPTER IV**

### **DISCUSSION**

The aging population in the United States will continue to result in an increased prevalence of older adults with dementia and family caregivers who are responsible for their daily needs. Therefore, identifying ways to protect and maintain the well-being of familial caregivers of dementia patients is critical. The current study applied the dual process model of perceived control (Heckhausen & Schulz, 1995; Rothbaum et al., 1982) to examine psychosocial factors that serve to protect familial caregivers against the stress associated with caring for a loved one with dementia, thereby contributing to better psychological well-being and greater life satisfaction.

The familial caregivers in the current study were moderately burdened with the responsibility of assisting their loved one with an average of four instrumental activities of daily living, with tasks related to medication adherence, going outdoors, washing or grooming, and dressing being the most common. In addition, most dementia patients lived with the familial caregiver who had been providing them with care for an average of three and a half years, although this ranged from less than a year up to 19 years. The majority of caregivers were Caucasian, middle-aged women in a committed relationship who had earned at least an Associate's degree and were not currently balancing the demands of dementia caregiving with childcare or work-related responsibilities.

In terms of their overall well-being, familial caregivers reported a moderate sense of control in general and within the caregiving role. They were satisfied with life and experienced positive emotions (e.g., determination) more often than negative emotions (e.g., distress). The caregivers also reported few to no suicidal thoughts, despite having moderate levels of stress and depressive symptoms.

### **Control Strategies and Predicting a Sense of Control**

Familial caregivers utilized a variety of primary and secondary control strategies in order to sustain a general sense of control as they navigated their role in providing care for their loved one with dementia. This finding is consistent with prior research showing that individuals engaged in a combination of primary and secondary control strategies (Chipperfield et al., 1999), which tends to benefit their psychological well-being (Haynes et al., 2009). Caregivers in the current study most often utilized both the primary control strategy of doing what they could to persist at their caregiving tasks, such as put forth greater effort, and the secondary control strategy of positive reappraisal, which involves trying to focus on the positive or finding the “silver lining” in a difficult situation. Moreover, greater engagement in task persistence was associated with greater use of positive reappraisal.

In contrast to the most frequently used control strategies, task modification (e.g., altering the frequency of the task) and goal disengagement (e.g., downgrading the necessity of the tasks) were the least often utilized primary and secondary control strategies, respectively. Task modification and goal disengagement were also positively associated with each other. Conversely, task persistence was negatively associated with task modification. This suggests that as caregivers endorse their own ability and exert

more effort in order to complete the tasks just as they always have, they are less likely to limit the parts of the tasks that they attempt or to take on the tasks less frequently.

After exploring the use of various primary and secondary control strategies, these strategies were examined as predictors of both a general sense of control and a sense of control within the caregiving role. Hypothesis 1, that greater use of primary and secondary control strategies will predict a stronger sense of control in general and within the caregiving role, was partially supported. Only the secondary control strategies composite of positive reappraisal predicted a stronger sense of control in general. This finding is consistent with Heckhausen and Schulz's (1995) and Rothbaum et al.'s (1982) dual process model, although the theoretical framework also suggests that the use of primary control strategies contributes to an overall sense of control.

Perhaps the reason that only secondary control strategies contributed to a sense of control among dementia caregivers in the current study is because they perceived their present circumstances as unchangeable given the progression of the disease and the unpredictable behavior of their loved ones. Therefore, adopting primary control strategies may not help to maintain a sense of control because direct influence over their situation may be viewed as impossible. It is possible that caregivers may benefit from the use of primary control strategies in the early stages of their caregiving role, but as their loved one deteriorates and their energy and resources become depleted they are more likely to turn to secondary control strategies to cope. This reasoning is supported by past research acknowledging that control strategies may shift over time as stressors and individual constraints change (Heckhausen & Schulz, 1995; Rothbaum et al., 1982; Wrosch et al., 2000). Nevertheless, the current finding that secondary control strategies predict a

stronger sense of control is encouraging, as the caregivers in this study were most likely to utilize positive reappraisal and look for a positive side to their struggle as one of their preferred strategies. Prior research has also shown that familial caregivers who use the secondary control strategy of positive reappraisal reported less depression (Papastavrou et al., 2011).

Primary and secondary control strategies did not predict a stronger sense of control within the caregiving role. A possible explanation for this lack of a predicting relationship is that caregivers may simply not be distinguishing between a general sense of control and a domain specific caregiving sense of control. Another possibility is that other control strategies not assessed in the current study are more salient to perceived control in the caregiving role. In particular, Rothbaum et al. (1982) described two control strategies that may be utilized when confronted with tasks of moderate difficulty that the individual does not feel they have the ability to overcome. The first is predictive secondary control, whereby individuals attribute limited ability to being unable to influence events and avoid disappointment. Vicarious secondary control is another strategy that involves relinquishing control to a powerful other in which the individual identifies (Rothbaum et al., 1982). This strategy may be relevant to caregivers to whom religiosity is valued because their sense of control may be derived from their association with a higher power who is viewed as having the ability to influence their situation. It is possible that strategies such as these would better predict a sense of control within the caregiving role. Overall, this finding suggests a need for further exploration of a variety of primary and secondary control strategies when examining a sense of control as it specifically pertains to the caregiving role.

## **Predicting Caregiver Well-Being**

After exploring predictors of a sense of control in general and within the caregiving role, both types of control were examined as predictors of psychological well-being. Hypothesis 2 was partially supported, as a stronger sense of control in general, but not within the caregiving role, predicted greater life satisfaction and more positive emotions. This finding is consistent with past research demonstrating that a greater sense of control is associated with greater life satisfaction and more positive emotions (Freund & Baltes, 1998; Lang & Heckhausen, 2001; Ruthig et al., 2007, 2014), as well as better emotional well-being (Thompson & Collins, 1995) and quality of life (Hasson-Ohayon et al., 2006). Prior research specific to dementia caregivers has also shown that a greater sense of control was associated with enhanced quality of life (Graff et al., 2007).

Hypothesis 3 was also partially supported. Again, a stronger sense of control in general, but not within the caregiving role, predicted lower perceived stress and fewer depressive symptoms. This finding is in line with prior research showing that a greater sense of control is associated with lower levels of distress and less depressive symptomatology (Bailis et al., 2001; Thompson et al., 1994, 1998, 2006). Similarly, a sense of control has been found to predict fewer depressive symptoms among spouses of individuals with Alzheimer's disease (O'Rourke et al., 2010).

Caregiver gender was also associated with depressive symptoms. Male caregivers were more likely to report symptoms of depression than were female caregivers. This finding may be due to male caregivers being more likely to both provide care for a spouse (vs. parent or other family member) with dementia (67% of men were caring for a spouse compared to only 23% of women in the current study) and live with the care recipient

(100% of men compared to only 58% of women in the current study). The burden of caring for a spouse with dementia is exacerbated by the difficulty of adjusting to a changing relationship with an intimate partner. Relationships that were once an equal partnership become viewed by spousal caregivers as increasingly dependent (O'Shaughnessy et al., 2010). The stress may be intensified among spouses because of the experiences that are unique to a romantic relationship and not typically shared with parents or other family members. For example, spouses are losing a potentially life-long partner who they have lived with for several decades, who contributed financially to the household, and who once helped in raising children. Spouses of patients with mild dementia often report being depressed by their situation and disruptions in their social life, household routines, and sleep (Brækhus, Øksengård, Engedal, & Laake, 1998). However, this explanation of the link between male caregivers and greater depressive symptomology should be interpreted with some caution given that male caregivers made up only 12% of the sample. It is also notable that while this finding is consistent with research by Brækhus et al. (1998) who found that husbands had significantly higher depressive caregiver stress than wives, it is in contrast to previous research on dementia caregivers that has either shown no gender differences in depressive symptoms (Gallicchio, Siddiqi, Langenberg, & Baumgarten, 2002) or suggested that spousal dementia caregivers who are women are significantly more depressed than men (Ashley & Kleinpeter, 2002).

The number of instrumental activities of daily living the caregiver assisted with was associated with more suicidal ideation and more negative emotions. Prior research has shown that the number of tasks performed and hours of care is related to greater

burden among familial dementia caregivers (National Alliance for Caregiving & AARP, 2009). Therefore, it is possible that the demands placed on caregivers are so substantial that their psychological well-being suffers, they begin to resent their caregiving role, and the thought of ending their own life provides some relief from their responsibilities. In line with this reasoning is prior research showing that suicidal thoughts increase among caregivers who are fatigued or overwhelmed, and suicide is viewed as a “release from the relentless demands of caring” (O’Dwyer et al., 2013, p. 755). Another explanation is that the number of activities of daily living in which the care recipient requires assistance is related to a progressive deterioration in functioning. The care recipient’s decline in memory (e.g., no longer recognizing the caregiver) coupled with the realization that their loved one’s needs will eventually surpass the care that they are able to provide likely places tremendous stress on the familial caregiver and contributes to negative emotions, a sense of failure, and suicidal ideation. Lastly, a lower household income among caregivers marginally predicted more negative emotions. This could be due to the inability to afford, or financial strain resulting from, in-home support to assist in caring for their loved one as well as respite services that allow the caregiver uninterrupted time to go grocery shopping, perform household chores, or engage self-care activities.

### **Clinical Implications**

The current study has demonstrated that greater use of the secondary control strategy of positive reappraisal predicted a stronger sense of control in general, which in turn predicted better psychological well-being among familial dementia caregivers. Therefore, interventions should focus on promoting the use of control strategies in order to improve psychological well-being. Given that positive reappraisal predicts a stronger

sense of control in general, interventions should focus on targeting this type of secondary control strategy in order to protect the sense of control and lessen the negative impact of caregiver burden. The current study suggests that helping caregivers to view their situation in a different way, to derive meaning from their role, and to focus on the positive are some of the strategies that will contribute to a greater sense of control. In fact, studies have demonstrated that a sense of control can be improved using an attribution-based cognitive intervention (e.g., Perry, Stupnisky, Hall, Chipperfield, & Weiner, 2010).

Moreover, prior research has shown that a sense of control is malleable and can be enhanced. For example, Hintz et al. (2014) developed an online intervention that increased a sense of control using education about control and the associated benefits, testimonials from past intervention participants, and exercises to practice applying control to stressful situations. This has implications for caregivers in terms of both secondary and tertiary prevention because it suggests that interventions designed to strengthen a sense of control will be advantageous at any stage of the caregiving process.

The current study also found that male caregivers are more likely to suffer from depressive symptoms, suggesting a need for outreach mental health services among this population. Furthermore, given that assisting with more instrumental activities of daily living predicts more suicidal ideation and negative emotions, it is important for familial caregivers to receive support from outside services (e.g., in-home personal care to provide assistance with bathing, dressing, and toileting). Education to increase the awareness of what support is available, as well as improvements in affordability and

accessibility of services, will be important considerations in order to alleviate the caregiving burden.

### **Limitations and Future Directions**

The current study was based upon a relatively small sample, which consisted of predominantly Caucasian women of middle socioeconomic status. Future research should focus on recruiting larger samples that are more demographically diverse and include a larger proportion of male caregivers. Such efforts would contribute to greater power to detect significant relationships among control strategies, a sense of control, and well-being outcomes, more generalizable results, and a greater capacity to examine the needs of male caregivers and the degree to which they overlap with those of female caregivers. The current results suggest that men might be differentially impacted by the caregiving role, and it is important that this be examined in subsequent research.

Additional limitations include self-report data and participant self-selection. One potential issue with self-report data relates to errors in recall. For example, participants may have had difficulty remembering the depressive symptoms they experienced during the past week or they may have been inaccurate in estimating the number of instrumental activities of daily living in which they assist their loved one. Social desirability is another potential issue, particularly with the questions related to suicidal ideation, and some caregivers may have minimized the extent to which they were struggling. Although using an anonymous survey was an attempt to diminish the likelihood of socially desirable responding it may still be a concern. Furthermore, it is likely that the caregivers who are severely struggling due to the demands placed on them had neither the time nor the

energy to participate. Perhaps providing additional incentive such as respite would facilitate greater likelihood of such caregivers participating in similar future research.

Future research should also compare dementia caregivers who are currently caring for a loved one at home versus after the loved one has moved to a long-term care facility. The results would contribute to a greater understanding of how caregivers cope depending on the situation. If poor psychological well-being is found among caregivers even after their loved one has been institutionalized and much of the caregiver burden has been lifted, then this would indicate the importance of continued intervention to strengthen a sense of control among this caregiving group. As previously indicated, subsequent research should examine a variety of primary and secondary control strategies in order to determine which ones are most relevant to dementia caregivers and their well-being. Longitudinal studies are also needed to investigate whether the use of primary and secondary control strategies, as well as a sense of control in general and within the caregiving role, changes overtime.

Overall, the current study contributes to the caregiving literature by applying the dual process model of control (Heckhausen & Schulz, 1995; Rothbaum et al., 1982) to the context of familial caregivers of loved ones with dementia. The results provide support for interventions that are aimed at enhancing the secondary control strategy of positive reappraisal in order to foster a stronger sense of control and in turn, better overall psychological well-being. Ideally, research will continue to investigate the efficacy and effectiveness of interventions designed to strengthen a sense of control, and these interventions will be implemented early on in order to protect against the psychological health consequences related to the caregiver burden.

## APPENDICES

## APPENDIX A

### DEMENTIA FAMILY CAREGIVERS SURVEY

#### CONTROL STRATEGIES

We want to learn more about a variety of issues related to caring for a loved one with dementia. The following questions will ask about your beliefs and feelings. You are under no obligation to answer questions that you would prefer not to. However, your answers will be of great assistance in our research. Thank you again for giving us your time and assistance by participating in this very important study. Also, we again want to assure you of complete confidentiality.

**We would like to ask about your beliefs and feelings regarding your role as a caregiver of a loved one with dementia. For the following questions, please circle the number that represents your response.**

**Sometimes caregivers experience difficulties in this caregiving role. When you have difficulty with tasks associated with caring for your loved one with dementia, how often do you...?**

	Never	Rarely	Sometimes	Often	Almost Always
1. ...expect less of yourself (PR: downgrade personal expectations)	0	1	2	3	4
2. ...continue doing them just as you always have (TP: persist at task as always)	0	1	2	3	4
3. ...exert more effort in order to do them (TP: increase effort exertion)	0	1	2	3	4
4. ...see these tasks as being less important than you once did (GD: downgrade task importance)	0	1	2	3	4
5. ...tell yourself that you can still do these tasks if you try (TP: endorse ability attribution)	0	1	2	3	4

6. ...tell yourself that it is just not necessary to do these tasks (GD: downgrade task necessity)	0	1	2	3	4
7. ...look for a positive side to your struggle (PR)	0	1	2	3	4
8. ...try to do only some parts of them that you can still do (TM: modify task components)	0	1	2	3	4
9. ...allow yourself more time to complete them (TM: modify task timing)	0	1	2	3	4
10. ...continue to try to do these tasks, but do them less often (TM: modify task frequency)	0	1	2	3	4
11. ...expend less effort on these in order to reserve your energy for more important things (GD: reduce/reserve effort)	0	1	2	3	4
12. ...tell yourself that others your age have worse problems (PR: endorse optimistic social comparison)	0	1	2	3	4
13. ...do what you can to change it for the better	0	1	2	3	4
14. ...find you usually learn something meaningful	0	1	2	3	4
15. ...find a different way of looking at things	0	1	2	3	4
16. ...remind yourself that you can't do everything	0	1	2	3	4

**APPENDIX B**

**SENSE OF CONTROL**

17. Thinking of your life in general, please circle a number to rate how you feel about your overall level of control:

Almost totally out of control										Totally in control
1	2	3	4	5	6	7	8	9	10	

18. Please circle a number to rate how you feel about your level of control in your dementia caregiving role:

Almost totally out of control										Totally in control
1	2	3	4	5	6	7	8	9	10	

## APPENDIX C

### PERCEIVED STRESS

**The following questions ask you about your feelings and thoughts about various things that have happened in your life during the last month. In each case, please circle a number to indicate how often you felt or thought a certain way.**

*During the last month how often have you...*

	Never	Almost never	Sometimes	Fairly often	Very often
19. ...been upset because of something that happened unexpectedly?	0	1	2	3	4
20. ...felt that you were unable to control the important things in your life?	0	1	2	3	4
21. ...felt nervous and "stressed"?	0	1	2	3	4
22. ...dealt successfully with irritating life hassles?	0	1	2	3	4
23. ...felt that you were effectively coping with important changes that were occurring in your life?	0	1	2	3	4
24. ...felt confident about your ability to handle your personal problems?	0	1	2	3	4
25. ...felt that things were going your way?	0	1	2	3	4

26. ...found that you could not cope with all the things that you had to do?	0	1	2	3	4
27. ...been able to control irritations in your life?	0	1	2	3	4
28. ...felt that you were on top of things?	0	1	2	3	4
29. ...been angered because of things that happened that were outside of your control?	0	1	2	3	4
30. ...found yourself thinking about things that you have to accomplish?	0	1	2	3	4
31. ...been able to control the way you spend your time?	0	1	2	3	4
32. ...felt difficulties were piling up so high that you could not overcome them?	0	1	2	3	4

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## APPENDIX D

### DEPRESSIVE SYMPTOMS

The next items address how you are feeling about yourself these days. In each case, please indicate how often you felt this way *during THE PAST WEEK*.

<i>During the past week...</i>	Rarely or none of the time (less than 1 day)	Some of the time (1-2 days)	Moderate amount of time (3-4 days)	Most or all of the time (5-7 days)
33. I was bothered by things that don't usually bother me.	0	1	2	3
34. I had trouble keeping my mind on what I was doing.	0	1	2	3
35. I felt depressed.	0	1	2	3
36. I felt that everything I did was an effort.	0	1	2	3
37. I felt hopeful about the future.	0	1	2	3
38. I felt fearful.	0	1	2	3
39. My sleep was restless.	0	1	2	3
40. I was happy.	0	1	2	3
41. I felt lonely.	0	1	2	3
42. I could not get going.	0	1	2	3

## APPENDIX E

### SUICIDAL IDEATION

43. How many times have you had thoughts of suicide as a dementia caregiver?

Never	Once a month or less	Few times per month	Once a week	Few times per week	Daily or almost daily
0	1	2	3	4	5

44. When was the last time you had thoughts of suicide as a dementia caregiver?

Never	More than a year ago	Within the last year	Within the last month	Within the last week	Within the last day
0	1	2	3	4	5

45. When you have these thoughts related to your caregiving role, how long do they last?

Does not apply	Fleeting – few seconds or minutes	Less than 1 hour/some of the time	1-4 hours/a lot of time	4-8 hours/most of the day	More than 8 hours/persistent or continuous
0	1	2	3	4	5



59. ...ashamed	1	2	3	4	5
60. ...inspired	1	2	3	4	5
61. ...nervous	1	2	3	4	5
62. ...determined	1	2	3	4	5
63. ...attentive	1	2	3	4	5
64. ...jittery	1	2	3	4	5
65. ...active	1	2	3	4	5
66. ...afraid	1	2	3	4	5

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## APPENDIX G

### SOCIODEMOGRAPHICS

67. How old are you? \_\_\_\_\_ years
68. What is your relationship to your loved one with dementia?  
\_\_\_\_ Spouse      \_\_\_\_ Other family member, please specify \_\_\_\_\_
69. Does your loved one with dementia currently live with you? \_\_\_\_ No    \_\_\_\_ Yes
70. How long have you been the primary caregiver for your loved one with dementia?  
\_\_\_\_\_ years
71. What is your gender? \_\_\_\_ Female      \_\_\_\_ Male
72. What is the gender of your loved one with dementia? \_\_\_\_Female      \_\_\_\_Male
73. Which of the following racial categories best describes you?  
\_\_\_\_ African American      \_\_\_\_ Asian      \_\_\_\_ Caucasian  
\_\_\_\_ Hawaiian/Pacific Islander      \_\_\_\_ Latin American      \_\_\_\_ Native American
74. In what region of the United States do you reside?  
\_\_\_\_ Midwest      \_\_\_\_ Northeast      \_\_\_\_ South      \_\_\_\_ West
75. What is your highest level of education completed?  
\_\_\_\_ Less than a high school diploma      \_\_\_\_ Bachelor's degree  
\_\_\_\_ High school diploma/GED      \_\_\_\_ Master's degree  
\_\_\_\_ Some college      \_\_\_\_ PhD/MD/JD  
\_\_\_\_ Associate's degree
76. What is your current marital status?  
\_\_\_\_ Single, never married      \_\_\_\_ Married/Cohabiting  
\_\_\_\_ Widowed      \_\_\_\_ Divorced/Separated
77. Are you currently employed?  
\_\_\_\_ No (fully retired or never employed)  
\_\_\_\_ Yes (full-time, part-time, or casually)

78. What is your best estimate of your total household income before deductions last year?

- Less than \$5,000
- \$5,000 - \$9,999
- \$10,000 - \$14,999
- \$15,000 - \$19,999
- \$20,000 - \$24,999
- \$25,000 - \$29,999
- \$30,000 - \$34,999
- \$35,000 - \$39,999
- \$40,000 and over

79. Are you a caregiver to any additional dependents (e.g., child or adult)?  No  
 Yes

**Do you assist your loved one with dementia with each of the following tasks?  
(Circle 1 for Yes or 0 for No)**

80. Do you assist your loved one with...?

	Yes	No
a) Going up and down the stairs	1	0
b) Getting around the house	1	0
c) Going outdoors	1	0
d) Getting in and out of bed	1	0
e) Washing or bathing or grooming	1	0
f) Dressing and putting shoes on	1	0
g) Eating	1	0
h) Taking medication or treatment	1	0
i) Using the toilet	1	0

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