A Pilot Study: The Association between Relationship Quality and Attributions and Resentment Among Alzheimer’s Disease Caregivers

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Pacific University

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A Pilot Study: The Association between Relationship Quality and Attributions and Resentment Among Alzheimer’s Disease Caregivers

Abstract
In this pilot study, seven caregivers of loved ones with Alzheimer’s disease completed an online survey involving the following variables: internal and external attribution, caregiver resentment, and pre-morbid and current relationship quality. Given the small number of participants and a Bonferroni adjustment to correct for experiment-wide error, no significant associations were found using Pearson correlations. However, significant trends were present for current relationship quality and caregiver resentment level; internal attributions and resentment level; and internal attributions and pre-morbid relationship quality. A follow-up study is planned to look further into these associations with a greater number of participants, in order to aid in the development of treatments and interventions.

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A PILOT STUDY: THE ASSOCIATION BETWEEN RELATIONSHIP QUALITY AND ATTRIBUTIONS AND RESENTMENT AMONG ALZHEIMER’S DISEASE CAREGIVERS

A THESIS
SUBMITTED TO THE FACULTY
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BY
HEATHER E. DUMSER

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MASTER OF SCIENCE IN CLINICAL PSYCHOLOGY

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APPROVED:
BJ Scott, PsyD, Chair
# TABLE OF CONTENTS

<table>
<thead>
<tr>
<th>Section</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>ABSTRACT</td>
<td>ii</td>
</tr>
<tr>
<td>TABLES</td>
<td>iii</td>
</tr>
<tr>
<td>ACKNOWLEDGMENTS</td>
<td>iv</td>
</tr>
<tr>
<td>INTRODUCTION</td>
<td>1</td>
</tr>
<tr>
<td>REVIEW OF THE LITERATURE ON CAREGIVER BURDEN AND RESENTMENT</td>
<td>2</td>
</tr>
<tr>
<td>ON FAMILY RELATIONSHIPS AND RELATIONSHIP QUALITY</td>
<td>4</td>
</tr>
<tr>
<td>ON ATTRIBUTION THEORY</td>
<td>5</td>
</tr>
<tr>
<td>Attribution theory in Alzheimer’s disease</td>
<td>9</td>
</tr>
<tr>
<td>METHOD</td>
<td>14</td>
</tr>
<tr>
<td>RESULTS</td>
<td>17</td>
</tr>
<tr>
<td>DISCUSSION</td>
<td>20</td>
</tr>
<tr>
<td>REFERENCES</td>
<td>22</td>
</tr>
</tbody>
</table>
Abstract

In this pilot study, seven caregivers of loved ones with Alzheimer’s disease completed an online survey involving the following variables: internal and external attribution, caregiver resentment, and pre-morbid and current relationship quality. Given the small number of participants and a Bonferroni adjustment to correct for experiment-wide error, no significant associations were found using Pearson correlations. However, significant trends were present for current relationship quality and caregiver resentment level; internal attributions and resentment level; and internal attributions and pre-morbid relationship quality. A follow-up study is planned to look further into these associations with a greater number of participants, in order to aid in the development of treatments and interventions.
TABLES

Participant Demographic Variables.................................................................17

Care Recipient Demographic Variables............................................................18

Associations between Internal and External Attributions, Caregiver Resentment, and Pre-morbid and Current Relationship Quality.................................................................19

Raw Score Means and Standard Deviations......................................................19
Acknowledgements

I would like to thank Duke University for allowing me to use a portion of the CERAD Behavior Rating Scale for Dementia free of charge and also Pierre Tariot, Jim Mack, and Marian Patterson for developing this measure.
A Pilot Study: The Association between Relationship Quality and Attributions and Resentment among Alzheimer’s Disease Caregivers

According to the Alzheimer’s Association (2009), nearly 10 million Americans provided 8.5 billion hours of unpaid caregiver services to individuals with Alzheimer’s disease (AD) last year, saving the nation $94 million. AD causes a person to have difficulty forming new memories and, as the condition worsens, the individual experiences disorientation and confusion, wanders, and displays impaired judgment and inappropriate behavior. The care recipient also may become aggressive and suspicious of others, causing further strain on the caregiver (Cuijpers, Hosman, & Munnichs, 1996). An informal caregiver is usually someone related to the care recipient (e.g. spouse, sibling, son, daughter) or a close friend or neighbor (Gallagher-Thompson, Lonergan, Holland, China, & Ashford, 2009). The most common caregiver profile is of a married, middle-aged woman with a high school education, who also works a full-time job (Alzheimer’s Association). The primary caregiver is likely in charge of finances, negotiating the healthcare system, and assisting the care recipient in daily activities (Haley et al., 2008). This can easily cause caregivers to feel emotionally and physically taxed, interfering with both caregivers’ and care recipients’ quality of life.

Given that caregivers of those with AD face many difficulties, many studies (e.g., Willner and Smith, 2007; Quinn, Clare, and Woods, 2009) have sought to determine which factors contribute to caregiver stress and burden, including relationship quality and attributional factors. In this paper, first the literature on caregiver burden, quality of family relationships, and attribution theory will be briefly reviewed. Then, attribution theory as it relates specifically to caregivers for those with AD will be considered. However, it appears that no study has yet examined relationship quality, attribution, and caregiver burden together. The goal of this study
was to explore how relationship quality and attribution theory interact with caregiver burden and resentment, since research in this area may provide information that contributes to better interventions and services for caregivers of those with AD.

**Caregiver Burden and Resentment**

Caregiving is a complicated process that requires the caregiver to adapt to the situation and reprioritize his or her responsibilities (Raina et al., 2004). It is comprised of positive and negative aspects. For instance, the caregiver may gain fulfillment from taking care of the care recipient, as well as a greater sense of companionship. At the same time, the effect of caregiving often leads to caregiver burden. Caregiver burden refers to “the extent to which caregivers perceive their emotional or physical health, social life, and financial status as suffering as a result of caring for their relative” (Neundorfer, 1991, p. 49). Caregiver burden may contribute to the fact that 80% of caregivers report experiencing chronic fatigue, depression, or anger (Mittelman et al., 1995). Even professional caregivers, who generally are well-trained and educated about AD, report low job satisfaction. Caregivers who are at less risk for isolation and have greater access to resources and support still struggle, illuminating how difficult the life of an informal caregiver can be (Lippa, 2007).

The caregiver role can cause the caregiver to feel helpless and overwhelmed as the care recipient’s needs trump the caregiver’s own needs for rest and recreation (Zarit, Anthony, & Boutselis, 1987). This may lead to isolation of the caregiver, resulting in fewer self-care activities and less social support. Also, the care recipient’s personality may change as a result of his or her condition worsening, causing a sense of loss and sadness for the caregiver (Cuijpers et al., 1996). AD Caregivers often feel great longing for the person whom the care recipient was in the past (Sanders, Ott, Kelber, & Noonan, 2008). Some researchers believe the grief experienced
by AD caregivers is similar to bereavement because the care recipient slowly loses his or her identity. Therefore, the grief is on a different level than those caring even for someone who is terminally ill but whose mind remains intact. In addition, as the disease progresses, care recipients often become increasingly agitated and aggressive, leading to problematic behaviors and interactions. One study comprised of primarily AD caregiver-care recipient dyads in Japan found that regardless of frequency or duration, particular problematic behaviors (e.g., unusual motor behavior, irritability, and aggression) caused the caregiver greater burden (Matsumoto et al., 2007).

Stress and depression associated with caregiver burden can result in poorer mental and physical health as well as a lower quality of caregiving (Monahan, Green, & Coleman, 1992; Neundorfer; Scharlach, 1987; Zarit et al.). For example, in a study of 199 spousal caregivers, researchers found that level of problematic behaviors was positively correlated with resentment, heightened depression, and anxiety (Croog, Burleson, Sudilovsky, & Baume, 2006). Many studies have demonstrated a link between caregiver burden and higher levels of the stress hormone cortisol, as well as a greater risk for cardiovascular disease (Gallagher-Thompson et al., 2009).

Moderating factors may offset the burden caregivers experience (Scharlach, 1987). For example, if caregivers find fulfillment in their roles, this may decrease some of the stress and fatigue associated with caregiving. In addition, social support is a protective factor for caregiver wellness (Raina, 2008). Some research has suggested that simply having one confidante in the caregiver’s life can dissipate much of the depression associated with caregiver burden (Scharlach, 1987). The type of coping style the caregiver employs also affects how well he or she is able to manage the many demands of caregiving. For instance, Mausbach et al. (2006) found
that caregivers who had personal mastery (i.e., a belief that they had autonomy over their life and its events) were better able to combat stressors associated with caregiving. To this end, therapy groups that address the needs of AD caregivers and provide tools for coping are helpful in facilitating a higher quality of life for both caregiver and care recipient (Raina, 2008).

**Family Relationships and Relationship Quality**

The history and quality of the relationship between caregiver and care recipient may affect both the level of care provided as well as the level of caregiver burden experienced (Quinn, Clare, & Woods, 2009). For instance, if one person has unrealistically high expectations of the other, this can cause turmoil and a decreased supportive environment, especially with respect to caregiving (Hewitt, Flett, & Mikail, 1995). Williamson et al. (1998) found an interesting outcome for cancer caregivers and the nature of their relationships and responses to their spouses. The researchers observed how 75 caregivers responded to the increased assistance they had to provide their spouses. The researchers also administered the Mutual Communal Behaviors Scale to caregivers in order to determine levels of responsiveness to their partner’s needs. Communal relationships were characterized as relationships involving two individuals who reciprocate love, care, and support. Spouses with relationships characterized as close and intimate were saddened by the decrease in affectionate activities, whereas spouses in noncommunal relationships were saddened by the decrease in personal activities, often leading to resentment of the care recipient.

Another study measured 142 spousal caregivers’ pre-morbid relationships with their care recipients, 50% of whom had some form of dementia (Williamson, Shaffer, & The Family Relationships in Later Life Project [FRILL], 2000). They found that caregivers in dyads exhibiting less communal behavior prior to the onset of illness provided care that was less
helpful and were more likely to engage in behaviors associated with maltreatment (e.g., displaced anger and neglect) than the care provided by caregivers from the dyads exhibiting greater communal behaviors. Caregivers from less communal relationships also experienced higher levels of depression.

Another study demonstrated that when a dyad’s history lacked intimacy, there was greater likelihood of caregiver depression (Morris, Morris, Brittonpeter, & Britton, 1988). The relationship history between caregiver and care recipient also can affect the caregiver’s mental and physical health. Uchino, Kiecolt-Glaser, and Cacioppo (1994) studied the relationships between 31 caregivers and care recipients before the onset of AD, along with the caregiver’s cardiovascular stress response. Two years later, the researchers administered a timed math test to the participants and found that caregivers who were involved in more affectionate relationships demonstrated fewer increases in heart rate and lower blood pressure than those with a less intimate relationship.

A review of 15 studies by Quinn et al. (2009) concentrating on relationship quality and dementia caregivers demonstrated a clear link between the caregiver’s perceptions of the care recipient and the relationship dynamic. Many studies suggested that care recipient problematic behaviors affected the caregiver’s conceptualization of the relationship. The review concluded that research examining the historical relationship between the individuals was limited.

Attribution Theory

Each day we must make sense of the actions of others (Heider, 1958). This generally leads us to attempt to deduce the causes leading up to particular outcomes. We tend to make attributions about the cause or intent behind others’ actions in order to understand the behavior and determine the social implications. The need to perceive causation behind others’ behaviors
is fundamental to attribution theory (Jones, 1979; Kelley & Michela, 1980). A prominent aspect of this theory is fundamental attribution error, which is the tendency to explain others’ behaviors based primarily on internal personality characteristics rather than on situational variables (Bohner, Bless, Schwarz, & Strack, 1988; Jones, 1979). For example, in one study observers of a simulated game show rated the questioners as more knowledgeable than the contestants, even though the positions had been randomly assigned (Jones, 1979). In addition, researchers have concluded that causal reasoning is employed more often when a situation is unexpected or perceived as negative. Errors also are relatively easy to make when intentionality is assumed based on cues that appear to the observer to indicate intent (e.g. facial movement or gestures); therefore, the observer believes the individual had control over the situation even though the cues may have no connection to the action (Fleming & Darley, 1989).

Many versions of attribution theory have arisen over the last half century and differ slightly from one another (Weiner, 2008). According to most, causal ascription refers to the perceived cause. Ability and effort are examples of causal ascriptions, and they can affect a person’s emotions and expectations (Weiner, 1985). Weiner broke attribution theory down into three components: locus, stability, and control. These three components are assessed independently of one another. Whether the cause is attributed to internal or external reasons is referred to as the locus of causality (Heider, 1958; Tomlinson & Mayer, 2009; Weiner, 1985). Partaking in an activity due to a desire to help would be considered an internal reason, whereas participating in an activity due to pressure from an outside party would be considered an external reason (Kelley & Michela, 1980). Another example might involve a situation where one attributes either lack of ability (i.e. an internal attribute) or ineffective teaching (i.e. an external factor) to a student receiving a low test score (Ross, Bierbrauer, & Polly, 1974).
Stability refers to how likely it is assumed that the cause will remain; therefore, this component enables an individual to make better predictions about similar situations in the future (Heider, 1958). One study suggested that classmates are less likely to help (e.g. provide class notes) someone who was depicted essentially as lazy or “lacking effort” as opposed to lacking in ability. The researchers concluded that classmates felt fewer obligations to help someone who was perceived as having control over the situation and had chosen to be (and will remain) lazy (Barnes, Ickes, & Kidd, 1979).

As may be seen from the above example, there can be overlap in how one assesses stability and controllability in a particular situation (Barnes et al., 1979). However, controllability also affects ones attributions independently. The amount of controllability an individual is perceived to have over a particular situation affects how much blame others place on him or her (Heider, 1958). Antecedents are considered based on the perceiver’s beliefs, information, and motivation attributed to person whose actions are being assessed. In this respect, the perceiver’s judgment of the intent behind an action may be determined by the consequences of the action. For example, if the behavior is compliant or helpful, often the perceiver views the intent behind the behavior as positive.

With respect to caregiving, Willner and Smith (2008) evaluated multiple studies that applied different aspects of attribution theory to caregiving, with mixed results. Although they had hypothesized that lower stability of care recipient behaviors would result in greater hope for the caregiver due the possibility of change, no study supported this hypothesis. Rather, a study by Dagnan and Cairns (2005) found that greater stability of challenging mental health symptoms and behaviors resulted in hospital staff exhibiting greater sympathy for individuals, because they believed the care recipients were not responsible for the onset and continuation of the behaviors.
In turn, this caused the staff to provide more care. That is, greater stability led to conclusions about low controllability and was associated with the helpers being more sympathetic to those with mental disabilities. Attributional components may be experimentally manipulated. For example, one study found that after staff members were educated, they rated controllability and stability lower with regard to problematic behaviors exhibited by those with Down’s Syndrome or AD (Kalsy, Heath, Adams, & Oliver, 2007).

Some literature suggests that attribution theory misses the mark with respect to making clear the differentiation between explanations based on causes, versus the reason a person provides for their behaviors (Harvey & Tucker, 1979; Potter & Edwards, 1990). In addition, critics have argued that attribution theory does not consider how linguistics factor into attributions. For example, Hilton and Slugoski (1986) argued that attribution theory is flawed because it assumes a person arrives at a point of view using common sense, whereas they posit that a person actually uses non-logical reasoning to make attributional hypotheses. After all, individuals often believe they have control over outcomes even when the outcome is strictly based on chance alone, such as rolling dice (Fleming & Darley, 1989). Kanazawa (1992) believed that expectancy alone determined causal attribution, regardless of whether the outcome was positive or negative, and that negative outcomes are explored more often simply because human beings do not expect them. Lastly, Rosati et al. (2001) posited that a component not highlighted enough in attribution theory is that of intentionality. These arguments have merit, but it is argued that they do not altogether deplete the value and relevance of attribution theory as currently employed (Williamson et al., 2005; Willner & Smith 2008). There remains convincing reasons for investigating these variables with respect to why caregivers experience burden,
resentment, and subsequent health effects, especially when caring for loved ones with AD (Polk, 2005)

**Attribution theory in Alzheimer’s disease.** Attribution theory tells us that, when the outcome of an action is negative, an observer is more likely to place responsibility on the person involved (Sebald, 2010). Therefore, if the responsibility for particular behaviors is placed solely on the dementia care recipient, this can cause the caregiver to lose trust in the care recipient (Tomlinson & Mayer, 2009). In this regard, it is imperative to note that once an attribution is made, it often shapes future perceptions as well (Ross, Leppner, & Hubbard, 1975). This potentially leads to an ongoing cycle of distrust and strained relationships, resulting in less support and care. However, Wadley and Haley (2001) found that subjects reading a vignette were more sympathetic, understanding, and willing to help someone demonstrating disruptive and inconsiderate behaviors when the individual was labeled with AD or major depression, compared to an individual with no label.

Cook, Ahrens, and Pearson (1995) conducted a study of AD caregivers’ attributions and levels of depression. In this study, 93 family caregivers from local support groups participated, with the information being gathered via mail and telephone interview. Caregiver depression was assessed using the Beck Depression Inventory-Second Edition, Older Person’s Pleasant Events Schedule, and Older Person’s Unpleasant Events Schedule. Attributions were assessed using the Older Person’s Attributional Style Questionnaire and Caregiver’s Attribution Scale for Problem Behaviors. The Index of Independence in Activities of Daily Living was administered to collect data regarding patient status. Multiple regression analysis was used to examine associations between all variables and depression. Cook et al. found that unpleasant events explained 18% of the variance in depression, \( F(1, 89) = 20.22, p < .001 \). Pleasant events explained 16% of the
variance \( F(1, 88) = 16.83, p < .001 \). Lastly, attributions made for specific events predicted 5% of the variance in depression \( F(1, 90) = 4.76, p < .05 \). The researchers concluded that caregivers who attributed problematic behaviors by the care recipients to be stable had higher levels of depression, but this effect was found only for specific problematic behaviors (e.g., falsely accusing caregiver) and not for general events.

Another study examined dementia caregiver attributions and depression as well as resentment (Martin-Cook, Remakel-Davis, Svetlik, Hynan, & Weiner, 2003). In this study, 37 participants completed four rating scales related to care recipient problematic behaviors and their own levels of depression and resentment (Caregiver Resentment Scale, Center for Epidemiologic Studies Depression Scale, Steinmetz Control Scale, and the Neuropsychiatric Inventory). The caregivers then participated in a psychoeducational treatment group or control group for four weeks. Assessments were administered at baseline and weeks 6 and 14. Correlations for all of the variables and two factorial ANOVAs were used to analyze the data. In this study, no significant differences were found between the treatment and control groups on any of the variables. However, for both groups, correlation analyses suggested that caregivers who internally attribute problematic behaviors had higher levels of resentment and depression \( r = .65, p < .01 \).

Levy, Hillygus, Lui, and Levkoff (2000) studied illness attributions and caregiver burden among dementia caregivers. Forty participants in the study included equal numbers of Chinese, Latino, African, and Caucasian Americans who were identified as primary caregivers for family members with dementia. An interviewer asked participants about the cause of their loved ones’ dementia and ascertained locus of control and perceived permanence of the condition. Evaluators determined whether the causes given reflected temporary (e.g., diet) or permanent
(e.g., genes) reasons, and if they reflected internal or external attributions. Using Pearson correlations, a higher level of burden was associated with more attributions in general for their loved ones’ disease ($r = .36$, $p < .03$), level of internal attributions ($r = .40$, $p < .02$), and more temporary attributions ($r = .48$, $p < .01$). This last finding was contradictory to the researchers’ hypotheses and the existing attribution literature. These associations were consistent across education levels, income, and ethnic membership. The researchers concluded that individuals who assign more attributions, especially internal ones, to dementia are likely to experience more depression and place more blame on themselves if they attribute dementia to temporary causes.

Williamson et al. (2005) looked at the relationship between attributions and caregiver resentment. They speculated that caregivers experienced less stress and resentment when they attributed the cause of care recipients’ behaviors to external factors. The researchers utilized 103 caregiver-care recipient dyads in a cross-sectional study. The care recipients were classified as having a predominant condition of either cognitive impairment (CI) or physical disability (PD). Regression analysis resulted in finding a significant association between resentment and behaviors associated with internal attributions ($\beta = .21$, $p < .001$). The researchers interpreted the results of the study as showing that, when caregivers interpret care recipient behaviors as due to their own “fault” rather than due to the illness, the caregivers are either more attentive or withdraw and provide the minimum care possible. Also, the researchers found that the amount of care provided for manipulative and controlling care recipients increases if these behaviors are CI-related.

Relationships between caregivers and care recipients that were filled with conflict and animosity before the onset of illness (AD or cancer) have been associated with greater caregiver burden and resentment (Williamson & Shulz, 1990, 1995). It is believed that the history of the
relationships between caregivers and care recipients is useful in pinpointing the source of resentment (Williamson et al., 2005). Aspects of the relationship that might provide helpful information include a historically-strained relationship, difficult or incompatible personalities, and length of time the parties have known one another.

Prior research has found evidence of caregiver burden associated with caregivers attributing problematic behaviors as under the care recipient’s control (Polk, 2005). Fewer studies have examined how relationship history affects caregiver perceptions and quality of life (Williamson et al., 2005). It appears that no studies to date have examined pre-morbid Alzheimer’s disease caregiver-care recipient relationships in conjunction with the present relationship, level of caregiver burden, and type of attributions made (Williamson et al.; Willner & Smith, 2007).

In the present study associations were explored between five variables—specifically, caregiver internal and external attributions, caregiver resentment, and relationship quality (pre-morbid and current). It was hypothesized that there would be significant negative associations between both pre-morbid and current relationship quality as measured by the McMaster Family Assessment Device (FAD) and external attributions as measured by the CERAD Behavior Rating Scale for Dementia (CERAD BRSD). It was hypothesized that there would be significant negative relationships between both pre-morbid and current relationship quality (as measured by FAD) and internal attributions (as measured by the Steinmetz Control Scale). Additionally, it was hypothesized that there would be a significant positive relationship between caregiver resentment and internal attributions and a significant negative relationship between resentment and external attributions. Lastly, it was hypothesized that there would be significant positive associations between both pre-morbid and current relationship quality (as measured by the FAD)
and caregiver resentment (as measured by the Zarit Caregiver Burden Scale and resentment scale).
Method

Male and female caregivers, 18 years or older, were recruited. Caregivers had to provide the majority of care (20 or more hours per week, three or more days per week, or live with the care recipient) for an individual with Alzheimer’s disease. The primary caregiver also had to provide care that is ongoing and consists of responsibilities that are considered instrumental and basic. Those who are not primary caregivers or are paid for their services were excluded. Those who could not read English or reported caring for someone with another form of dementia or condition other than Alzheimer’s disease were excluded. Participants are recruited through the greater Portland area Craigslist, Willamette Weekly, local and online caregiver support groups, Alzheimer’s Association Oregon Chapter, and the American Psychology Association Rehabilitation Psychology listserv. The 30-minute anonymous survey was administered online via SurveyMonkey.com. Included in the survey was a question about which stage of AD the care recipient was in currently. For this question, the seven-stage model developed by Reisberg and Franssen (1999) was used and stages were further described. The stages are as follows: normal; normal aged forgetfulness; mild cognitive impairment; mid stage AD; moderate stage AD; moderately severe AD; and severe AD.

Pre-morbid and current relationship quality was measured using the McMaster FAD (Epstein, Baldwin, & Bishop, 1983). The McMaster FAD measures general family functioning and the extent to which family members as a unit communicate with one another. The General Functioning scale consists of 12 items using a Likert-type scale (0= strongly agree, 4= strongly disagree). A lower score on this measure indicates higher general family functioning. The scale was found to have a Cronbach alpha of .92. The measure as a whole has good test-retest reliability and appears to accurately discern between healthy and unhealthy family relationships
(Miller, Epstein, Bishop, & Keitner, 1985). This scale was administered twice, once to measure pre-morbid family relationships and the other to measure current family relationships. Pre-morbid relationship quality was assessed retrospectively, using modified directions that directed participants to consider the relationship quality before the onset of illness.

Caregiver resentment was measured using seven items from the Caregiver Burden Scale (Zarit, Reever, & Bach-Peterson, 1980) and ten items from a resentment scale by Thompson et al. (2005). Prior analyses have established that these scales taken together (as the Caregiver Resentment Scale) are psychometrically sound (Williamson et al., 2000). Both scales are comprised of Likert-type scales (1 = never, 5 = almost always), asking how often caregivers feel resentful or how often a specific feeling or thought arises. Williamson et al. (2005) found Cronbach’s alpha for this measure to be .92.

Based on Williamson et al. (2005) procedures, external and internal attribution were measured using a prior method that researchers have used traditionally (i.e., caregivers were not asked to assign blame). Instead, two measures were used to differentiate between internal and external attributions. Behavior attributed to stable characterological features was measured using the modified Steinmetz Control Scale (Steinmetz, 1988). This seven-item measure used a Likert-type scale (0=never, 5=always), asking caregivers such things as if the care recipient uses their illness to gain control or attempt to manipulate others. Williamson et al. found Cronbach’s alpha to be .84 for this measure. Conversely, behavior associated with being cognitively impaired (e.g., having a diagnosis of AD) was measured by seven items from the CERAD Behavior Rating Scale for Dementia (BRSD; Mack & Patterson, 1997). This measure assesses problematic behaviors frequently exhibited by those with AD in the past month, such as wandering or becoming agitated, using a Likert-type scale (0= has not occurred, 4= 16 or more
days). This is a widely used dementia research measure, and Ramsden (2005) found that validity and reliability were adequate. Cronbach’s alpha was .76 for the Williamson et al. study.
Results

Ten individuals completed the online survey, but three were excluded because they endorsed being paid or providing care for less than three days per week. Participants were predominantly Caucasian. One of the caregivers identified as Native American and was caring for someone of the same ethnicity. Four out of seven participants were male (see Table 1). Almost 90% of the participants reported caring for their loved ones five or more days each week and had provided care for three years or longer. The care recipients were in AD stages four to seven (see Table 2).

Table 1

**Participant Demographic Variables**

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Table 2

*Care Recipient Demographic Variables*

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<tr>
<td>61-70 yrs old</td>
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</tr>
<tr>
<td>71-80 yrs old</td>
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<td>3</td>
</tr>
<tr>
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<td>1</td>
</tr>
<tr>
<td>91-100 yrs old</td>
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<td>1</td>
</tr>
<tr>
<td>Ethnicity</td>
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</tr>
<tr>
<td>Caucasian</td>
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<td>5</td>
</tr>
<tr>
<td>Native American</td>
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<td>1</td>
</tr>
<tr>
<td>Stage of AD</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
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<td>5</td>
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<td>3</td>
</tr>
<tr>
<td>7</td>
<td>0</td>
<td>1</td>
</tr>
</tbody>
</table>

The results were analyzed using Pearson product moment correlations, with a Bonferroni correction so that the alpha was set at \( \alpha = .005 (\text{.05}/8) \) in order to decrease the likelihood of Type I error.

Given the low number of participants and Bonferroni correction, no significant correlations were found in this study; therefore, no hypotheses were proven. However, some trends were noted. There was a positive correlation between current relationship quality (with higher scores on the FAD indicating less functional family relationships) and caregiver resentment level \( (r = .78, p < .05) \) (see Table 3). There were also some other interesting trends. For instance, positive correlations were found for level of internal attributions and both
resentment level and pre-morbid relationship quality ($r = .702, p = .078; r = .702, p = .079$). The means and standard deviations for each measure are presented in Table 4.

Table 3

*Associations between Internal and External Attributions, Caregiver Resentment, and Pre-morbid and Current Relationship Quality*

<table>
<thead>
<tr>
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</thead>
<tbody>
<tr>
<td>Internal Att.</td>
<td>-</td>
<td>.220</td>
<td>.702</td>
<td>.702</td>
<td>.224</td>
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<tr>
<td>External Att.</td>
<td>-</td>
<td>-.183</td>
<td>.096</td>
<td>-.384</td>
<td>-</td>
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<tr>
<td>Resentment</td>
<td>-</td>
<td>-</td>
<td>.495</td>
<td>.784*</td>
<td>-</td>
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<tr>
<td>Premorbid Rel.</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>.425</td>
<td>-</td>
</tr>
<tr>
<td>Current Rel.</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
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</tbody>
</table>

*p < .05

Table 4

*Raw Score Means and Standard Deviations*

<table>
<thead>
<tr>
<th>Measure</th>
<th>Mean (sd)</th>
</tr>
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<tbody>
<tr>
<td>Steintmetz Control Scale</td>
<td>18.29 (8.79)</td>
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<tr>
<td>CERAD Behavior Rating Scale for Dementia</td>
<td>10.86 (2.27)</td>
</tr>
<tr>
<td>Caregiver Resentment Scale</td>
<td>27.71 (11.38)</td>
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<tr>
<td>McMaster Family Assessment Device (premorbid functioning)</td>
<td>24.86 (8.36)</td>
</tr>
<tr>
<td>Family Assessment Device (current functioning)</td>
<td>27.14 (4.38)</td>
</tr>
</tbody>
</table>
Discussion

The results of this study suggest that some associations demonstrate promise for further analysis. Specifically, the data suggest that as the current relationship quality decreases, the amount of caregiver resentment increases. This suggests that a strained caregiver-care recipient relationship may lead to increased resentment by the caregiver. This would be consistent with Uchinos et al. (1994) and Williamson et al. (1998; 2000) findings of associations between relationship quality and caregiver stress, resentment and care quality.

In addition, caregiver resentment increased with the level of internal attributions, suggesting that when caregivers perceive problematic behaviors as within their loved ones’ control rather than primarily a result of AD, they experience more resentment. This would be consistent with studies by Levy et al. (2000), Martin-Cook et al. (2003), and Williamson et al. (2005) that found similar associations; specifically, the level of internal attributions was associated with caregiver burden, depression, and resentment. Lastly, a strained pre-morbid relationship tended to be associated with a greater level of internal attributions. This trend supports research that suggests a link between internal attributions and relationship quality (Quinn et al., 2009). The trends found in the present study are areas for further research.

A significant limitation in this study was the small sample size. Interestingly, the participants did not fit the characteristic family caregiver as depicted by the Alzheimer’s Association (i.e., middle-aged women; 2009). In this study, more than half of caregivers were male, and the majority were above 60 years old. Only one of the female caregivers was middle-aged. This might have affected the results, and a greater number of participants might reflect a more “typical” demographic distribution. However, as the prevalence of AD cases increases, it
might be that caregiver profiles are changing. In any event, a larger sample is likely to be more representative of the population of interest.

An additional limitation of this study is that it is less than ideal to collect data retrospectively about pre-morbid relationship quality. The caregivers might not remember and accurately describe their relationships with loved ones before the onset of AD. In addition, the nature of their current relationships could have skewed how they rated their relationship quality prior to AD. Butz (1981) discussed the benefits and disadvantages of using retrospective versus panel data, and in the end, he concluded that if panel data were not possible, retrospective data were better than no data at all. Considering that few studies have explored pre-morbid relationships variables in caregiver-care recipient dyads, any information on relationships, whether retrospective or longitudinal, contributes to the minimal literature on the subject. However, statistical methods of correcting for error inherent in retrospective data might be explored in future studies.
References


