QUALITY OF RELATIONSHIP AND QUALITY OF LIFE:
A COMPARISON BETWEEN CARE RECIPIENTS
AND THEIR CAREGIVERS

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A THESIS

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ABSTRACT

The relation between quality of relationship ratings and quality of life ratings was investigated among rural-dwelling vulnerable elders living with chronic health conditions and their informal caregivers. Care recipient (i.e., vulnerable elders) and caregiver dyads rated the amount of strain specific to their caregiving relationship, and agreement within dyads was assessed using a Person $r$ correlation. Well-being of all participants was evaluated using a measure examining weighted satisfaction across 16 life domains (e.g., health, goals and values, love, neighborhood). For those dyads with longitudinal data, exploratory analyses were applied to assess the impact of a psychological intervention to affect the association between quality of relationship and quality of life.

The correlation between care recipient and caregiver relationship ratings was strong and positive, indicating parallel strain within dyads. There was no significant association between quality of relationship and quality of life measures, but reliability among measures was found within this rural, older adult sample suggest that use of these measures is reliable within a rural sample. Notably, the Quality of Life Inventory (QOLI), a measure that has been normed for adults but not been extensively evaluated within older adult populations, exhibited good internal consistency with the older adult care recipients, providing support for use of this measure within an older adult sample.
DEDICATION

This thesis is dedicated to all those who helped and guided me through the process of creating this manuscript; from the nascent beginnings of my research question to the finalization of this document. In particular, I would like to dedicate this to my family, my friend Erica, and my cat (Persi) for cheering me on throughout the process—even when hours of writing and data analysis made me somewhat undesirable to be around.
LIST OF ABBREVIATIONS AND SYMBOLS

α  Cronbach’s index of internal consistency

$df$ Degrees of freedom: number of values free to vary after certain restrictions have been placed on the data

$M$ Mean: the sum of a set of measurements divided by the number of measurements in the set

$p$ Probability associated with the occurrence under the null hypothesis of a value as extreme as or more extreme than the observed value

$r$ Pearson product-moment correlation

$t$ Computed value of $t$ test

$<$ Less than

$=$ Equal to
ACKNOWLEDGMENTS

I would like to take this opportunity to thank those who have helped me throughout this research project. Foremost, I would like to thank Forrest Scogin, the chair of my committee, for the access to the PEARL dataset as well as his invaluable research expertise and sense of humor of which I drew upon on multiple occasions. I would also like to thank all of my committee members, Avani Shah and Rebecca Allen, for their ongoing support, input, constructive criticism, and questions. Additionally, I would like to thank my fellow lab members who aided me by lending me their ears and eyes, providing advice when necessary, and sharing personal stories about their own thesis journey. Your input inside and outside of lab meetings was always appreciated and helped restock my motivation when stores were low. My sincere thanks to you all; this research project would not have been possible without your contributions and support.
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Chapter 1—Introduction

An estimated nineteen percent of adults in the United States provide informal care to a family member or friend aged 50 years or older. On average, these caregivers are 50 years of age themselves and caring for someone 77 years of age (National Alliance for Caregiving, 2009). In the last few decades, caregiving research has been afforded heightened attention in the gerontological literature. A large portion of these studies have focused on caregivers of older adults with progressive cognitive decline, such as those living with dementia or Alzheimer’s disease. However those with chronic health conditions (e.g. arthritis, cancer), hereafter referred to as vulnerable elders, may also require the aid of informal caregivers. Furthermore, the impact of relationship quality on the caregiving dyad’s sense of well-being may be differentially affected in non-dementia caregiving dyads where cognitive decline plays little to no role in the caregiver and care recipient’s appraisal of their relationship quality. As such, further investigation into the relationships within non-dementia care recipient populations receiving care from informal caregivers is indicated.

The present study was conducted to address the question: Does the self-appraisal of relationship quality within caregiving dyads relate to overall quality of life in both caregivers and their vulnerable elder care recipients? Research about the specific needs and characteristics of vulnerable elders and their caregivers is growing, but research sensitive to context will also be necessary to design effective interventions for at risk populations. Individuals living in rural areas are often farther from healthcare facilities, and formal (paid) caregiving resources may be
less accessible due to decreased availability or financial issues. Consequently, the impact on caregivers of rural-dwelling, vulnerable elders may be distinct from those in urban areas. As such, the current study will make a further nuanced contribution to the caregiving literature by examining rural-dwelling caregivers/care recipients’ perception of their relationship and its relation to their individual well-being. Before going further into the importance of investigating the influence of their relationship on outcomes, a basic understanding of the known or suspected effects associated with the act of caregiving is prudent.

The Effects of Caregiving

The role of caregiver is dynamic. It can saturate, undermine, or buttress the well-being of an individual in a multitude of ways. Consequently, researchers have taken an active interest in gauging to what extent and in what ways caregiving has an effect on physical, emotional, and psychological health. The resultant findings are mixed.

Caregivers have been found to be at increased risk of mortality, with one study finding caregivers to be at 63% higher risk than non-caregiver controls (Christakis & Allison, 2006; Schulz & Beach, 1999). Furthermore, witnessing the deterioration of a loved one is distressing not only for the caregiver, but for non-caregiving others (such as family members or friends) in attendance (Schulz, O’Brien, Bookwala, & Fleissner, 1995). Those caring for individuals with dementia may be especially burdened as they must actively witness both the cognitive and physical deterioration of a loved one. Behavior problems brought on or exacerbated by the care recipient’s cognitive impairments often provide the dementia caregiver with fewer opportunities for positive experiences compared to caregivers providing aid to older adults without cognitive issues (Pinquart & Sorenson, 2004). The emotional strain and physical fatigue associated with
providing care, in turn, can negatively impact the overall relationship. It is important however to clarify that it is not the state of cognitive impairment itself that directly impacts the relationship, but the frequency of associated disruptive behaviors (Yates, Tennstedt, & Chang, 1999). This highlights that it is problems associated with caregiving that primarily bring on negative outcomes. Thus, caregivers of vulnerable elders who also experience high levels of problems with the caregiving relationship may be similarly burdened, while caregivers of those with dementia who exhibit a low frequency of disruptive behaviors may have increased likelihood of positive experiences.

Though much of the early work on caregiving primarily assessed the presence or lack of negative effects, later research revealed beneficial effects can also arise. One study expanding upon previous work evaluating mortality risk in caregivers found that the act of caregiving can actually decrease mortality risk when caregivers are providing active care, but do not perceive their role as overly stressful (Brown et al., 2009). Caregivers and care recipients have also been found to report that the caregiving experience has brought them closer together (Jo, Brazil, Lohfeld, & Willison, 2007). Furthermore, the act of helping has been found to promote well-being (Post, 2007), and the indirect benefits of helping behaviors are often hypothesized to be the cause of caregiving health benefits, such as reduced mortality risk. With some caregivers experiencing negative outcomes, and others positive, obtaining a clearer view of which factors tip the scale in a particular direction would be helpful.

The effects of caregiving are not solely limited to the caregiving context but can permeate other areas of the life outside of the caregiving context. Accordingly, including measures of general well-being in caregiving research will assess a facet of health in care recipients and caregivers that is both directly and indirectly affected by the caregiving relationship.
Furthermore, the relation between relationship quality and overall well-being may be bidirectional and context dependent, warranting additional fine tuning as more is learned about the dynamics of caregiving.

Some researchers have argued that measurements of well-being and caregiver burden are actually “sides of the same coin” while others have argued that they are related but distinct constructs (George & Gwyther, 1986; George, 1994; Stuckey, Neundorfer, Smyth, 1996; Stull, Kosloski, & Ketcher, 1994). Poulin, Brown, Ubel, Smith, Jankovic, and Langa (2010) found that time on call (time spent poised to provide informal care activities as they occur) could predict negative outcomes, and that time spent helping predicted positive outcomes, but not vice versa. Therefore, regardless of where the line between burden and well-being falls, studies investigating whether a certain variable predicts caregiving outcome should consider the variable’s effect on both positive and negative outcomes. Simply measuring a lack or abundance of negative affect without an assessment of the positive would paint an incomplete picture. Moreover, reducing negative experiences is just as important to health as increasing positive experiences. The World Health Organization’s definition of health further supports this notion by stating that being healthy is not simply a lack of disease or infirmity, but the presence of physical, mental, and social well-being. It is prudent therefore to design future interventions that incorporate and foster variables found to decrease negative experiences as well as those that increase positive experiences among various facets of life and well-being.

Aims of the Current Study

The seemingly capricious valence of caregiving effects prompt us to dig deeper and scrutinize which factors promote positive effects, which put individuals at risk of negative
outcomes (such as depression, burnout, or institutionalization of the care recipient when he or she and associated caregivers would prefer care be administered in the home), and which factors may mediate or moderate the effects of caregiving. *Quality of relationship* has been suggested in the literature as playing an influential role in caregiving and may have implications for both positive and negative experiences. The relationship between a caregiver and care recipient can be very meaningful. It may be this perception of meaning and/or impact of the caregiving relationship that accounts for difficulties in completely separating measurements of caregiver burden and well-being.

The aim of the current study was twofold: To test the relation between caregiver and care recipient relationship ratings in a rural sample, and to test the relation between quality of relationship and overall quality of life. Sociodemographic information, a measure of relationship quality, a measure of quality of life, a measure of caregiver stress, and a comorbidity count from the Charlson Comorbidity Scale were pulled from the parent dataset Project to Enhance Aged Rural Living (PEARL; Scogin et al., 2007) and entered into the dataset created for the purposes of this study. Caregivers were identified within the PEARL dataset and matched with their care recipients through corresponding identification numbers. Two corresponding measures of relationship quality, one as rated by the caregiver and the second as rated by the care recipient, were included to provide complementary but distinct measurements of the caregiving relationship. An overall quality of life instrument, not specific to caregiving populations, was utilized to measure general subjective well-being in all participants.
Hypotheses

The following hypotheses were tested:

1. The total score of quality of relationship between caregivers and care recipients within the same dyad will correlate significantly, as indicated by an alpha less than $p = .05$.

2. Among caregivers, self-rated higher quality of relationship (as indicated by a higher total score) will positively and significantly ($p < .05$) correlate with scores on a quality of life measure.

3. Among care recipients, self-rated higher quality of relationship will positively and significantly $p < .05$ correlate with scores on a quality of life measure.

4. As the caregiver provides both a functional and social support role in the care recipient’s life, the caregiver’s rating of the relationship alone may relate to the care recipient’s quality of life. Therefore, it was hypothesized that among care recipients, the caregiver’s rating of quality of relationship will positively and significantly ($p < .05$) correlate with scores on the care recipient’s quality of life measure.

5. The following exploratory questions will also be addressed:
   
   a. Are there certain questions in the quality of relationship questionnaire upon which caregivers and care recipients tend to agree or disagree?
   
   b. Do ratings of the quality of relationship change over the course of the study?
Chapter 2—Methodology

The following was a secondary analysis of data from the Project to Enhance Aged Rural Living (PEARL). Primary participants in the parent study were vulnerable, rural-dwelling elders who took part in a home-delivered cognitive-behavioral therapy (CBT) intervention aimed at improving quality of life and reducing psychological symptoms. These individuals, hereafter referred to as care recipients, were not required to identify a caregiver to participate. For those who did (approximately 36 percent of participants), their caregivers also underwent assessments and participated in the intervention as treatment facilitators, but not as targeted recipients of the therapy intervention.

The current study included care recipient and caregiver dyads with complete Time 1 data. Main analyses were limited to a cross-sectional approach due to the low number of caregiving dyads remaining active throughout the course of the study and the unintended, unequal division of caregivers into treatment and control groups due to attrition. Therefore, while the current study’s main hypotheses cannot address the effectiveness of a CBT-intervention on the quality of life in vulnerable elder caregiving dyads, the findings remain meaningful to rural-dwelling, non-dementia caregiving dyads who likely have not yet participated in any form of psychological intervention. Additionally, the exploratory questions investigated among dyads with pre- and post-intervention data sub-sample provide some guidance to future research in examining intervention outcomes in caregiving dyads.
Parent Study Inclusion/Exclusion

Participation of caregivers in the parent study was contingent upon initial enrollment of their care recipients. Therefore, a brief description of care recipient recruitment and enrollment is requisite for both caregivers and the vulnerable elders (care recipients). Senior centers, church organizations, public and private home health-care agencies, hospitals with associated home health-care groups, service providers (e.g. pharmacists, physicians), and local print media (e.g. advertisements, feature stories) were utilized in recruitment of PEARL participants. Interested persons were contacted via phone, given a brief overview of the project, and assessed for project eligibility. To meet eligibility criteria, care recipients had to be 65 years of age or older; have a T score of 55 or below on the Quality of Life Inventory (QOLI; Frisch, 1992); using norms for non-patient adults, have a T score of 45 or above on the Global Severity Index (GSI) of the Symptoms Checklist-90-Revised (SCL-90-R; Derogatis, Rickels, & Rock, 1976); and have residence outside of Tuscaloosa and Montgomery, AL. If individuals self-reported a history of bipolar disorder, schizophrenia, or current substance abuse; were currently receiving psychotherapy; or had significant cognitive impairment as evaluated by the Mini Mental State Examination (MMSE; Folstein, Folstein, & McHugh, 1975), they were excluded from the study. Eligible PEARL participants were asked to identify a friend or family member that could serve as a treatment facilitator. A score of 24 or higher on the MMSE (or 16+ for those with less than a ninth-grade education) was the only inclusion criteria for these caregivers.

Participants

The majority of caregivers and care recipients were female and identified as African American. Caregivers reported higher levels of educational attainment and indicated greater
subjective income adequacy compared to care recipients. When surveying marital status, care recipients had a higher frequency of unmarried participants (58% unmarried) compared to caregivers (54% currently married). Refer to Table 1 for further detail.

Table 1. Participant characteristics of care recipients and caregivers.

<table>
<thead>
<tr>
<th>Characteristic</th>
<th>Care Recipients (n = 48)</th>
<th>Caregivers (n = 48)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>N</td>
<td>%</td>
</tr>
<tr>
<td><strong>Sex</strong></td>
<td></td>
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<tr>
<td>Female</td>
<td>35</td>
<td>72.9</td>
</tr>
<tr>
<td>Male</td>
<td>13</td>
<td>27.1</td>
</tr>
<tr>
<td><strong>Marital Status</strong></td>
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<td></td>
</tr>
<tr>
<td>Married</td>
<td>16</td>
<td>33.3</td>
</tr>
<tr>
<td>Never married</td>
<td>3</td>
<td>6.3</td>
</tr>
<tr>
<td>Divorced</td>
<td>1</td>
<td>2.1</td>
</tr>
<tr>
<td>Separated</td>
<td>3</td>
<td>6.3</td>
</tr>
<tr>
<td>Widowed</td>
<td>24</td>
<td>50.0</td>
</tr>
<tr>
<td><strong>Race/Ethnicity</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>African American</td>
<td>30</td>
<td>62.5</td>
</tr>
<tr>
<td>Caucasian</td>
<td>17</td>
<td>35.4</td>
</tr>
<tr>
<td>Native American</td>
<td>1</td>
<td>2.1</td>
</tr>
<tr>
<td><strong>Education</strong></td>
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<td></td>
</tr>
<tr>
<td>&lt; high school degree</td>
<td>33</td>
<td>68.8</td>
</tr>
<tr>
<td>High school degree/GED</td>
<td>8</td>
<td>16.7</td>
</tr>
<tr>
<td>&gt; high school</td>
<td>7</td>
<td>14.6</td>
</tr>
<tr>
<td><strong>Income Adequacy</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Not difficult</td>
<td>6</td>
<td>12.5</td>
</tr>
<tr>
<td>Not very difficult</td>
<td>8</td>
<td>16.7</td>
</tr>
<tr>
<td>Somewhat difficult</td>
<td>15</td>
<td>31.3</td>
</tr>
<tr>
<td>Very difficult to meet needs</td>
<td>16</td>
<td>33.3</td>
</tr>
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</table>

**Measures**

**MMSE.** Cognitive impairment was used as an exclusion criterion for both caregivers and care recipients. This was assessed by administration of the MMSE (30 possible points), but chosen cut-off scores were adjusted in respect to educational attainment if necessary. If individuals indicated less than a ninth-grade education, a score of 16 or less on the MMSE was used to indicate significant cognitive impairment. If individuals had completed ninth-grade or beyond, a cut-off score of 23 or lower was utilized. Reliability for MMSE at a cut-off score of
24 was show to have a reliability coefficient of 0.80 for Serials 7, with an internal consistency reliability of 0.76 (Lopez, Charter, Mostafavi, Nibut, & Smith, 2005).

**Demographic Questionnaire.** Educational attainment along with other sociodemographic information (age, sex, race/ethnicity, marital status, monthly income adequacy) and a subjective health status rating (from poor to excellent) were also collected for all participants through a self-report questionnaire.

**Quality of Relationship Questionnaire.** To assess the quality of relationship between the care recipient and caregiver, both individuals were asked to rate the degree to which they agreed (not at all, somewhat, or a great deal) to the same eight statements about their relationship in the Poulshock and Deimling (1984) Quality of Relationship Questionnaire, such as: “I have felt angry towards [C]” or “My relationship with [C] gives me pleasure”. In addition to these eight statements, caregivers also rated an additional three statements: (1) I feel that [care recipient] makes more requests than necessary, (2) I feel pressured between giving to [care recipient] and others in my family or in my life, and (3) I feel that [care recipient] can only depend on me. Reliability and validity have not been evaluated for this questionnaire and will therefore be conducted in the course of this study. Internal consistency on this measure was found to be moderately high among care recipients (Cronbach’s alpha = .71) and caregivers (Cronbach’s alpha = .71).

**Quality of Life Inventory.** The QOLI assesses the domains of creativity, community, health, helping, home, friendships, learning, love relationship, neighborhood, philosophy or life,
relationships with children, relationships with relatives, recreation, self-regard, standard of living, and work; sixteen domains in total. Individuals first rate the overall importance of the domain in question on their overall happiness on a 3-point Likert scale (0, not important; 1, important; or 2, extremely important), and subsequently rate the degree to which their needs, goals, and wishes in this area of their life are met. The individual indicates this by selecting one of six options: (-3) very dissatisfied, (-2) somewhat dissatisfied, (-1) a little dissatisfied, (+1) a little satisfied, (+2) somewhat satisfied, or (+3) very satisfied. There are no neutral response choices for importance or satisfaction rating scales. Individuals can also specify what impedes life satisfaction by writing in “problems that get in the way of your satisfaction”, but these responses will not be included in the current study. A weighted raw score is then computed by multiplying non-zero (those rated as important or extremely important) importance ratings with their corresponding satisfaction rating, adding the weighted domain scores, and dividing by the total number of non-zero domains. T-scores are then computed from these raw scores.

T-scores were calculated for QOLI scores of all (care recipient) participants in the parent study and reliability testing revealed a Cronbach’s alpha of 0.65 at Time 1, indicating questionable internal consistency (Scogin et al., 2007). Literature assessing the internal consistency of the QOLI typically falls between 0.79 and 0.89. Therefore there is some question as to how appropriate the QOLI is for assessing older adults. However, as the current study included caregivers who were not required to be 65 or older to be eligible for the study, the QOLI may still be appropriate within the caregiving sample. Cronbach’s alpha was computed for caregivers (α = .88) and care recipients (α = .76) separately, indicating that there was acceptable internal consistency within the QOLI among both older care recipient participants and their caregivers included in this study.
**Charlson Comorbidity Scale.** The Charlson Comorbidity Scale measures whether the following illnesses or conditions were present (coded as “1” for the presence of each surveyed condition) or absent (coded as “0”) in the care recipient sample: (1) myocardial infarction, (2) congestive heart failure, (3) peripheral vascular disease, (4) cerebrovascular disease, (5) dementia, (6) chronic pulmonary disease, (7) rheumatologic disease, (8) peptic ulcer disease, (9) mild liver disease, (10) uncomplicated diabetes mellitus, (11) diabetes mellitus with end organ damage, (12) hemiplegia or paraplegia, (13) renal disease, (14) any malignancy, (15) moderate to severe liver disease, (16) metastatic solid tumor, or (17) AIDS. A total count was summed to represent the weight of comorbid conditions that may have impacted the caregiving relationship and overall well-being rating of the care recipient.

**Caregiver Stressors-Revised.** The CS-R is a 25-item measure that examines caregiver stress by asking caregivers to indicate whether specific facets of stress occur: (0) never, (1) some of the time, (2) most of the time, or (3) all of the time. Items are then totaled to represent an overall measurement of stress with higher numbers indicating higher frequency of stress related to the act of caregiving (see Appendix A for a list of the 25 items). Reverse coding was implemented before computing total caregiver stress scores whenever applicable to ensure that higher numbers for all 25 items represented higher levels of stress. Reliability was acceptable within the sample with moderate internal consistency among caregivers (Cronbach’s α = .71).

**Procedure**

Caregivers and care recipients who participated in the parent study were given $25 gift cards for each assessment period (multiple assessments were given throughout the duration of
the intervention study). Measures were administered by research assistants in the homes of the care recipient, and to aid participants with low literacy and/or sensory abilities, assessments were given verbally and response cards were used. Fidelity to assessment protocol was established by reviewing twenty percent of audio-taped sessions.
Chapter 3—Results

Main Analyses

SPSS statistical software was used for all data analysis procedures. The quality of life measurement was screened for any missing data points, and when found to have two or more missing importance and/or satisfaction ratings, the data was excluded as this signifies an invalid assessment of the QOLI (Frisch, 1994). All selected data were examined for outliers, skew, and kurtosis before conducting the main analyses.

The first hypothesis tested whether the quality of relationship was rated similarly by both caregiver and care recipient within caregiving dyads. A positive relation was found using Pearson-\(r\) correlations within caregiving dyads, \(r = .44, n = 47, p = .002\). A paired-samples \(t\)-test was conducted to investigate which member of the dyad tended to indicate more strain in the relationship. It was found that caregivers (\(M = 12.31, SD = 2.93;\) minimum = 8, maximum = 21) indicated higher levels of overall strain in the relationship compared to care recipients (\(M = 11.34, SD = 2.57,\) minimum = 8, maximum = 21) rating the same paired relationship, \(t(46) = 2.04, p = .047\).

The second, third, and fourth hypotheses were tested by investigating whether the self-rated quality of life of the participant was positively correlated with their self-rated quality of relationship. No relation was found between quality of relationship and quality of life in care recipients (\(r = -.03, n = 47, p = .87\)), caregivers (\(r = -.21, n = 48, p = .15\)), or between the caregivers’ quality of relationship and the care recipients’ quality of life, (\(r = .01, n = 48, p = .87\)).
In conclusion, the findings suggest that the ratings of quality of relationship between caregivers and care recipients are similar, but do not significantly relate to the overall quality of life in rural vulnerable elders and their caregivers.

Ancillary and Exploratory Analyses

The ability of the current study to evaluate the relation between quality of life and quality of relationship in caregiving dyads across time was severely limited by full and partial attrition of caregiving dyad pairs over the course of the study. Though the care recipient may have remained an active participant in the CBT intervention, the caregiver may not have been available or interested in participating at each time of assessment. Conversely, due to the nature of the parent study, if the care recipient terminated their participation the caregiver was not pursued for post or follow-up assessment. The following analyses were pursued for exploratory purposes as they lack sufficient sample size to draw strong conclusions about the relation between quality of relationship and quality of life across time.

First, looking at just the Time 1 data, certain patterns emerged in how care recipients and caregivers differentially rated their relationship within the specific questions of the Quality of Relationship questionnaire. Though caregiving dyads evidenced high rates of agreement (see Figure 1), there were some questions that were endorsed more heavily by caregivers compared to care recipients. Overall, caregivers and care recipients tended to not endorse strain on their relationship, with few indicating some strain and even fewer indicating a great deal. Those who did indicate “somewhat” to “a great deal” were more likely to be caregivers than care recipients across all statements in the quality of relationship questionnaire (see Figures 2-9).
**Figure 1.** Frequency of agreement on quality of relationship questions 1-8.

**Figure 2.** Response choices to QoR question 1

**Figure 3.** Response choices to QoR question 2
Figure 4. Response choices to QoR question 3

Figure 5. Response choices to QoR question 4

Figure 6. Response choices to QoR question 5

Figure 7. Response choices to QoR question 6
Second, whether or not there was a significant change in the quality of relationship rating over time was examined. Fifteen care recipient and caregiver pairs had complete, matched measurements at Time 1 and Time 2, nine dyads had been randomized to wait list control and six had been randomized to the CBT treatment condition. Findings suggest that quality of relationship ratings did not significantly differ from Time 1 to Time 2 in either the waitlist control or treatment conditions (see Table 2).

| Table 2. Quality of relationship between Time 1 and Time 2. |
|---------------------------------|---------------|---------------|----------|-----|-----------|
|                                 | Time 1 Mean (SD) | Time 2 Mean (SD) | t       | df  | Sig. (2-tailed) |
| Treatment Condition             |                |                |         |     |              |
| Care Recipients                 | 11.83 (2.14)   | 13.33 (4.80)   | -0.85   | 5   | .43        |
| Caregivers                      | 13.00 (4.24)   | 13.67 (3.83)   | -0.47   | 5   | .66        |
| Waitlist Control                |                |                |         |     |              |
| Care Recipients                 | 9.67 (1.00)    | 12.11 (3.01)   | -2.23   | 8   | .06        |
Third, a separate measure of caregiver stress was applied to the caregivers in this study. It was found that quality of relationship positively correlated with caregiver ratings of stressors $r = .62, n = 43, p < .01$, indicating that as caregivers indicated elevated stressors in their role of caregiver, they also rated their relationship with their care recipient as more strained. This supports the principle that caregiver stress can have a negative impact on the relationship quality with their care recipient. The number of comorbid health conditions the vulnerable elders had was not found to relate to the measure of caregiver stress ($r = -.03, n = 35, p = .87$), or relationship quality as rated by both the caregiver ($r = .12, n = 38, p = .48$) and care recipient ($r = -.07, n = 37, p = .68$) and thus was not investigated as a moderator of quality of relationship.

Lastly, the reliability of the Quality of Life Inventory within the PEARL study care recipient subgroup was investigated. The Quality of Life Inventory has acceptable reliability for both clinical and non-clinical populations, but the normative sample utilized by the measure’s authors does not include a large subgroup of older adults. As such, establishing the reliability this measure within a rural-dwelling, vulnerable elder sample was warranted. Analysis of the overall PEARL care recipient sample suggests that the QOLI is a reliable measure when used in a diverse sample of vulnerable elders living in rural areas ($\alpha = .79$; See Table 3 for further detail). Removal of specific well-being domains did not improve reliability in the overall sample, and offered only minimal benefits when considered for specific race/ethnicity and phenotypic groups. Furthermore, internal consistency coefficients ranged from 0.74 to 0.84 across groups, such that African Americans evidenced the strongest QOLI reliability and Caucasian females had the lowest with all groups falling within an acceptable reliability range (i.e., 0.70 and above).
Table 3. Reliability of Quality of Life Inventory in PEARL care recipients (n = 187)

<table>
<thead>
<tr>
<th>QOLI Domains</th>
<th>African American</th>
<th>Caucasian</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Female</td>
<td>Male</td>
</tr>
<tr>
<td>Overall Reliability</td>
<td>.797</td>
<td>.840</td>
</tr>
</tbody>
</table>

Changes to reliability if listed item was deleted (below)

<table>
<thead>
<tr>
<th>QOLI Domains</th>
<th>African American</th>
<th>Caucasian</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Female</td>
<td>Male</td>
</tr>
<tr>
<td>Health</td>
<td>.791</td>
<td>.831</td>
</tr>
<tr>
<td>Self-Esteem</td>
<td>.780</td>
<td>.814</td>
</tr>
<tr>
<td>Goals</td>
<td>.774</td>
<td>.819</td>
</tr>
<tr>
<td>Money</td>
<td>.798</td>
<td>.851</td>
</tr>
<tr>
<td>Work</td>
<td>.791</td>
<td>.835</td>
</tr>
<tr>
<td>Play</td>
<td>.790</td>
<td>.825</td>
</tr>
<tr>
<td>Learning</td>
<td>.783</td>
<td>.823</td>
</tr>
<tr>
<td>Creativity</td>
<td>.792</td>
<td>.848</td>
</tr>
<tr>
<td>Helping</td>
<td>.773</td>
<td>.839</td>
</tr>
<tr>
<td>Love</td>
<td>.780</td>
<td>.835</td>
</tr>
<tr>
<td>Friends</td>
<td>.778</td>
<td>.820</td>
</tr>
<tr>
<td>Children</td>
<td>.796</td>
<td>.826</td>
</tr>
<tr>
<td>Relatives</td>
<td>.791</td>
<td>.843</td>
</tr>
<tr>
<td>Home</td>
<td>.795</td>
<td>.825</td>
</tr>
<tr>
<td>Neighborhood</td>
<td>.785</td>
<td>.827</td>
</tr>
<tr>
<td>Community</td>
<td>.786</td>
<td>.830</td>
</tr>
</tbody>
</table>
Chapter 4—Discussion

The hypotheses of the current study were partially supported. Caregivers and care recipients reported similar relationship quality, but there was no relation found between quality of caregiving relationship and overall quality of life. Quality of relationship has been found in the literature to buffer against caregiver burden (Goldsworthy & Knowles, 2008; Pearlin, Mullan, Semple, & Skaff, 1990; Yates et al., 1999). Whether the caregiver is a spouse, adult child, or child-in-law, higher quality of relationship has been positively related to well-being in caregivers (Merz & Huxhold, 2010), and has been documented as a mediator of caregiver stressors, overload, and depression (Yates, Tennstedt, & Chang, 1999). However if the quality of relationship is poor, possibly because caregiver burden is high, well-being can be negatively affected (Chapell & Reid, 2002; Stuckey, Neundorfer, & Smyth, 1996). Additionally, if satisfaction with the relationship is poor, the likelihood of caregiver distress is increased (Hui, Elliott, Martin, & Uswatte, 2011). The literature supports the notion that caregiving has an effect on well-being, but the findings of this study suggest that this impact may not be significant when assessing general well-being (i.e., with a quality of life measure non-specific to caregiving, without items directly related to the action or receipt of caregiving) in a sample of non-dementia, rural-dwelling elders living with chronic health conditions and their caregivers. However, given some of the study’s limitations, alternative explanations for non-significant findings should be considered.
First, the quality of life ratings were multifaceted, with participants indicating quality of life scores ranging from highly dissatisfied to highly satisfied across 16 themed quality of life domains and then weighting each domain by importance. This allowed participants to signify which domains most impacted their overall quality of life and allowed a greater range of response/score in the measurement of general well-being. Conversely, the quality of relationship ratings were skewed positively toward participants not endorsing negative aspects of the relationship (see Figures 2-9) and quality of relationship questions were limited to a non-weighted, 3-point scales. Therefore, caregivers and care recipients were unable to specify through this measure which aspects of the relationship were most salient and prominent in their overall perception of the relationship. Though caregiving dyads were found to rate their relationship similarly and were able to report strain in the relationship, the correspondence between the two questionnaires may have been limited by issues of limited range and weighted importance in the quality of relationship questionnaire.

Second, in addition to the restricted range of the quality of relationship questionnaire, the cross-sectional design limited the possibility of investigating the long-term effects of quality of relationship as a moderator or mediator of improvement in well-being. Traditionally, transition into the caregiving role has been marked by a loss of relationship reciprocity (Neufeld & Harrison, 1995; Pearlin, Mullan, Semple, & Skaff, 1990; Reid, Moss, & Hyman, 2005), with caregivers on average reporting high satisfaction with their prior relationships (Steadman, Tremont, & Davis, 2007). On the other hand, there is some evidence that the quality of the relationship prior to the initiation of caregiving can transpose itself onto the current relationship, and maybe even serve as a protective factor (Adams, McClendon, & Smyth, 2008). The past (pre-caregiving) relationship and well-being of caregivers and care recipients was not assessed in
the current study. Therefore it is beyond the power of the current study to comment on the past and current impact of relationship quality on quality of life during role transition (i.e., from non-caregiving relationship compared to caregiving relationship, or from caregiving relationship pre-psychological intervention compared to post-intervention). The possibility remains that relationship quality may be most salient to quality of life ratings during times of transition, and future studies involving caregivers and care recipients may benefit from assessment of relationship change.

Third, several researchers examining the caregiving relationship have questioned the effect of congruence or mutuality on relationship quality. This refers to the degree that caregivers and care recipients similarly rate their relationship quality and whether they perceive the relationship as mutually beneficial. As the participants included in the current study consisted of vulnerable elders with enduring health conditions, it is possible that the direct impact of caregiving relationship quality may have waned or stabilized over time, thus playing a less direct role in present assessments of overall quality of life. Though the subscales of the QOLI directly related to relationships and helping may remain directly impacted by the caregiving relationship over time, the other subscales of the QOLI may be only indirectly affected by the relationship.

Fourth, the vulnerable elders in the study did not suffer from pronounced cognitive impairments, which may help explain the strong correlation (see Figure 1) of the perception of the relationship within caregiver dyads. Zweibel and Lydens (1990) found that recent changes in the degree of care recipient need, or novelty of the caregiving role were associated with more incongruence. This cautions researchers from weighing the congruence of caregiving perceptions too heavily, especially in caregivers who are new to the role or have experienced a
recent change in their duties as caregiver. The caregiving dyads in the current study were not fettered by pronounced cognitive impairments, but by prolonged health conditions. This may have enabled dyads to have similar perceptions of their relationship given their cognitive ability and prolonged time spent stabilizing the caregiving relationship over the course of the illness.

If satisfaction with the relationship is poor, the likelihood of caregiver distress is increased (Hui, Elliott, Martin, & Uswatte, 2011). Alternatively, helping behaviors have been shown to be related to positive outcomes (Post, 2007). Additionally, Spruyette, Audenhove, and Lammertyn (2001) found that a poor quality of relationship was predictive of institutionalization, or moving the care recipient into a formal care facility. With many older adults wishing to “age in place” due to personal preferences, financial limitations, and/or lack of desirable alternatives, interventions to promote good quality of relationship may be vital in efforts to decrease rates of institutionalization as well as lessen the negative impact of caregiver burden and maximize the benefits of helping behaviors and being able to provide care to a loved one in need. Continuing research into the relation between relationship quality and overall well-being are therefore necessary in caregiving dyads with mild to no cognitive impairment.

In conclusion, it is possible that the impact of the quality of relationship on quality of life may not manifest clearly between caregiver and care recipient dyads but within them. Quality of relationship measures used in caregiving populations may benefit from including a measure of relationship change (pre and post-caregiving initiation). Quality of life and quality of relationship are inherently personal and subjective judgments whose relationship may play its biggest role across time and in affecting treatment response. Put differently, the relationship between quality of life and quality of relationship may not be direct, but better serve as a moderator or mediator of change in caregiving dyads who are receiving psychological
intervention. The correlation between care recipient and caregiver relationship ratings was strong and positive, suggesting similar strain in the relationship is experienced by both care recipient and caregiver and highlighting the importance of directing caregiving interventions toward both individuals in the non-demented dyad. There was no significant association between quality of relationship and quality of life measures, but internal consistency among measures (i.e., ranging between 0.70 and 0.90) was found within this rural, older adult sample suggesting that use of these measures is reliable within an older, rural sample.
References


Appendix

Caregiver Stressors-Revised

1. I can get a lot done during the day.
2. I worry about (Client).
3. I am able to relax.
4. I can count on having a block of time to use as I like.
5. I am exhausted when I go to bed at night.
6. I feel responsible for (Client).
7. I have more things to do than I can handle.
8. I am in control of my emotions.
9. I have difficulty concentrating on activities because of thoughts of (Client).
10. I have time just for myself.
11. I think about plans for arrangements for care of (Client).
12. I am patient with client.
13. The physical strain on me is more than I can take.
14. I feel confident that I am meeting the needs of (Client).
15. I feel more and more tense as the day goes on.
16. I wish I were free to lead a life of my own.
17. I feel competent in my ability to care for (Client).
18. I wish I could just run away.
19. I wish I could take more breaks during the day.
20. I feel that I am doing a good job as a caregiver.
21. I feel trapped by (Client’s) illness.
22. I don’t know what to expect from one hour to the next.
23. My patience is stretched to the limit.
24. Physically I am strong enough to do everything I have to do.
25. I feel if things continue like this, I will not be able to care for (Client) at home.