Exemplary Care as a Mediator of the Effects of Caregiver Subjective Appraisal and Emotional Outcomes

Grant M. Harris, MA,*1,2 Daniel W. Durkin, PhD,2,3 Rebecca S. Allen, PhD,1,2 Jamie DeCoster, PhD,4 and Louis D. Burgio, PhD2,5

1Department of Psychology, The University of Alabama, Tuscaloosa.
2Center for Mental Health and Aging, The University of Alabama, Tuscaloosa.
3Division of General Internal Medicine and Public Health, Center for Quality Aging, School of Medicine, Vanderbilt University, Nashville, Tennessee.
4Institute for Social Science Research, The University of Alabama, Tuscaloosa.
5School of Social Work, University of Michigan, Ann Arbor.

*Address correspondence to Grant M. Harris, MA, Center for Mental Health and Aging, The University of Alabama, P.O. Box 870315, Tuscaloosa, AL 35487-0315. E-mail: grantharris4@gmail.com

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Purpose: Exemplary care (EC) is a new construct encompassing care behaviors that warrants further study within stress process models of dementia caregiving. Previous research has examined EC within the context of cognitively intact older adult care recipients (CRs) and their caregivers (CGs). This study sought to expand our knowledge of quality of care by investigating EC within a diverse sample of dementia CGs.

Design and Methods: We examined the relation between CG subjective appraisal (daily care bother, burden, and behavioral bother), EC, and CG emotional outcomes (depression and positive aspects of caregiving [PAC]). Specifically, EC was examined as a possible mediator of the effects of CG subjective appraisals on emotional outcomes. Using a bootstrapping method and an SPSS macro developed by Preacher and Hayes (2008 Asymptotic and resampling strategies for assessing and comparing indirect effects in multiple mediator models), we tested the indirect effect of EC on the relation between CG subjective appraisals and CG emotional outcomes.

Results: Overall, EC partially mediates the relation between the subjective appraisal variables (daily care bother, burden, and behavioral bother) and PAC. Results for depression were similar except that EC did not mediate the relation between burden and depression. This pattern of results varied by race/ethnicity.

Implications: Overall, CGs’ perception of providing EC to individuals with dementia partially explains the relation between subjective appraisal and symptoms of depression and PAC. Results of this study suggest that interventions may benefit from training CGs to engage in EC to improve their emotional outcomes and quality of care.

Key Words: Coping, Dementia caregiving, Positive aspects of caregiving, Strength

Being the caregiver (CG) of an elderly family member is likely to be burdensome and has been shown to lead to detriments in emotional and physical health (Aneshensel, Pearlin, Mullan, Zarit, & Whitlatch, 1995; Christakis & Allison, 2006; Family Caregiver Alliance [FCA], 2006; Schulz & Beach, 1999; Vitaliano, Zhang, & Scanlan, 2003). Caring for someone with dementia is typically more stressful than caring for physically frail older adults without dementia who are not near the end of life (Clipp & George, 1993; Ory, Hoffman, Yee, Tennstedt, & Schulz, 1999). Furthermore, CGs of a family member with
dementia spend more time assisting their loved one with activities of daily living (ADLs) and instrumental activities of daily living (IADLs; Ory et al., 1999). Despite this burden, it has been shown that providing care may afford benefits to CGs, such as decreased mortality risk (Brown et al., 2009). Another potential benefit to CGs of providing care, particularly care that is perceived to be of high quality, to a loved one with dementia may be improved emotional functioning. The question then arises, how would a CG know when he or she provides high-quality care?

Quality of care is described as being multidimensional (Christie et al., 2009; Dooley, Schaffer, Lance, & Williamson, 2007). For example, Morrow-Howell, Proctor, and Dore (1998) focus on the adequacy of the care to meet the care recipient’s (CR) needs. Christie and colleagues, however, found differential relations between adequate caregiving, potentially harmful behaviors, and exemplary care (EC). Specifically, adequate care was not related to potentially harmful behaviors and displayed a small correlation to EC. In addition, potentially harmful behaviors showed a moderate negative relation to EC. These results support the notion that these constructs represent separate aspects of quality of care.

Exemplary care, a relatively new construct, has been defined as “communicating to care recipients that they are loved, respected, and worthy of special consideration” (Dooley et al., 2007 p. 360). Dooley and colleagues evaluated an 11-item scale assessing EC among a sample of community-dwelling, familial CGs providing care for their physically frail but predominantly cognitively intact CRs. The provision of and effects of providing care for loved ones with dementia and those without dementia are different (Clipp & George, 1993; Ory et al., 1999), and examining these potential differences represents one goal of this study. The examination of perceived quality-of-care provision is an important endeavor, given its potential effect on the outcome of the caregiving experience (Brown et al., 2009). To date, EC has not been examined within a sample of dementia CGs.

The REACH II study data (Belle et al., 2006) were collected from a sample of burdened dementia CGs that almost equally comprised African Americans, Caucasians, and Hispanics. Notably, Dooley and colleagues (2007) had a relatively diverse sample (i.e., 79% Caucasian, 17% African American, 3% Hispanic, etc.); however, they did not address the potential for racial/ethnic differences in EC. Although the stress process has been shown to be similar across ethnicities (FCA, 2006; Pearlin, Mullan, Semple, & Skaff, 1990), Hilgeman and colleagues (2009) found, using the REACH II sample, that African American CGs had significantly more role strain than Caucasian or Hispanic CGs and that Caucasians had greater intrapsychic strain than African Americans and Hispanics. Given these findings, the multiethnic REACH II database provides a unique opportunity to develop our understanding of the EC construct among three racial/ethnic groups that was not available in previous studies. Particularly novel is the inclusion of Hispanic dementia CGs who comprise one third of the participants.

Three constructs in the caregiving literature represent negative subjective appraisal: burden, daily care bother, and behavioral bother. Burden has been described as worry or anxiety (FCA, 2006). Daily care bother is the bother experienced by the CG as a result of providing assistance with ADLs and IADLs (Gitlin et al., 2005; Hilgeman, Allen, DeCoster, & Burgio, 2007). Daily care bother is the CG’s subjective experience of distress that stems from having to help the CR with things like shopping, taking care of finances, bathing, and eating. Behavioral bother is experienced by the CG as a result of a dementia CR’s memory-related, disruptive, and negative affect-related behaviors (Teri et al., 1992) such as asking the same question repeatedly, losing things, being aggressive with others, doing embarrassing things, and crying. Pinquart and Sörensen (2003) found that behavioral problems are the strongest source of distress in dementia CGs.

As stress process models suggest (Folkman, 1997; Pearlin et al., 1990), subjective appraisals are highly predictive of CG emotional and physical health outcomes, and may have a greater predictive ability than their objective counterparts (Gallagher-Thompson & Powers, 1997; Sun, Hilgeman, Durkin, Allen, & Burgio, 2009). For example, Sun and colleagues found that dementia CGs’ subjective sense of income adequacy compared with household income significantly predicted more self-reported depression symptoms and anxiety. Because of the importance of CG subjective appraisal and its association with emotional functioning, it is logical to examine the impact of engaging in EC behaviors as such behaviors may inoculate the CG against the full impact of negative subjective appraisal. Engaging in EC may
Hypotheses

Exemplary care represents one facet of a multidimensional quality of care. To date, research on EC has not been conducted using a diverse sample consisting entirely of dementia CGs. Stress process models generally state that an appraisal of a caregiving event is followed by a behavior—such as coping—and that an emotional outcome follows the behavior. Aspects of this process vary by race (Hilgeman et al., 2009). Our first question involves exploring how EC is related to the subjective appraisals (i.e., daily care bother, burden, and behavioral bother), depressive symptoms, and positive aspects of caregiving (PAC). For the whole sample and among each race/ethnicity, it is expected that EC will be inversely related to burden, daily care bother, behavioral bother, and depression. Alternatively, EC is expected to be positively related to PAC. Our second question involves exploring whether EC mediates the relation between CGs’ subjective appraisal and concurrent emotional outcomes such as depression and PAC. We propose that EC will mediate the relation between (a) burden and depression, (b) burden and PAC, (c) daily care bother and depression, (d) daily care bother and PAC, (e) behavioral bother and depression, and (f) behavioral bother and PAC. Racial/ethnic groups may vary in the extent that providing high-quality care explains the relations between subjective appraisal and emotional outcome within the caregiving experience. Finding such relations may facilitate development of culturally specific interventions to reduce caregiving stress and improve quality of care by teaching CGs how to engage in behaviors representing EC.

Methods

Sample and Procedures

We examined secondary data drawn from the baseline assessment for the REACH II project (http://ClinicalTrials.gov identifier: NCT00177489) supported through the National Institute on Aging and the National Institute of Nursing Research. REACH II was a unique multisite clinical trial that implemented and evaluated a multicomponent psychosocial intervention across five sites for six months. Data for 642 CG–CR dyads were collected in the randomized clinical trial at Birmingham, Memphis, Miami, Palo Alto, and Philadelphia. Of the 642 CGs included in the study, 21 were excluded due to missing baseline data. The remaining 621 participants were White/Caucasian, \( n = 212 \) (34.1%); Black/African American, \( n = 208 \) (33.5%); and Hispanic/Latino, \( n = 201 \) (32.4%). Although there are significant differences in age, \( F(2, 620) = 10.72, p < .001 \); education, \( F(2, 620) = 59.32, p < .001 \); and years providing care, \( F(2, 620) = 5.40, p < .01 \), among racial/ethnic groups, individuals who were excluded from the analyses due to missing data did not differ significantly from those included in the analyses. Of the participants included in analyses, approximately 83% were women and 41% were spouses.

Participants were recruited from multiple community organizations with special attention paid to the recruitment of minority CGs. Caregivers were included if they were at least 21 years old, living with or sharing cooking facilities with the CR, providing an average of four or more hours of care per day to a CR with at least two functional impairments of IADLs or one ADL impairment (Katz, Ford, Moskowitz, Jackson, & Jaffe, 1963; Lawton & Brody, 1969), providing care for at least the past six months, and reporting at least two symptoms of distress associated with caregiving (Belle et al., 2006). The CR had to have a diagnosis of Alzheimer’s disease or a related disorder or a Mini-Mental State Examination (MMSE; Folstein, Folstein, & McHugh, 1975 ) score of 23 or lower; however, bedbound CRs with a score of zero on the MMSE were excluded.

After obtaining informed consent from eligible participants, baseline data were collected during a face-to-face interview. Detailed information about the overall REACH II study, psychometric properties of all measures, recruitment procedures, and intervention outcomes are described elsewhere (Belle et al., 2006).

Measures

Caregiving Context.—Observed values for the caregiving context were taken from the REACH II baseline interview, including relationship to the CR, race/ethnicity, age, years providing care, CG gender, and education (Table 1). Caregivers were coded as either “spouse” or “non-spouse” for the final analyses based on the importance of this distinction in the caregiving literature (e.g., Miller & Guo, 2000).
Caregiver Health and Health Behaviors (modified by the REACH II investigators, http://ClinicalTrials.gov identifier: NCT00177489; Jenkins, Kreger, & Hurst, 1980; Schulz & Beach, 1999; Schulz et al., 1997): A single item from the Caregiver Health and Health Behaviors measure was used in this analysis to assess subjective health. Caregivers rated their health in general on a 5-point scale from excellent to poor. Scores range from 0 to 4, with higher scores indicating better perceived health.

Mini-Mental State Examination (Folstein et al., 1975): The MMSE measured the cognitive status of the CR by providing a brief assessment of a person’s orientation to time and place, recall ability, short-term memory, and arithmetic ability. Scores range from 0 to 30, with scores equal to or below 24 indicating cognitive impairment.

Subjective Appraisal.—Revised Memory and Behavior Problem Checklist (RMBPC)—Frequency (Teri et al., 1992): The RMBPC assessed the presence of 24 problem behaviors that the CR may have exhibited in the past week (e.g., trouble remembering recent events, asking the same question over and over). Caregivers rated the frequency of problem behaviors on a 4-point scale from 0 = not in the past week to 3 = daily or more often. A sum “frequency of problem behaviors” score is totaled and used as an objective measure of the presence of behavioral problems related to the dementia diagnosis. Cronbach’s alpha for this sample was .81.

RMBPC Conditional Bother Score (Teri et al., 1992): In the presence of a problem behavior (see RMBPC previously), CGs reported how bothered or upset they were by each behavior using a 5-point scale from 0 = not at all to 4 = extremely. The conditional bother score was calculated by dividing the sum “bother” scores by the number of endorsed problem behaviors. The final score had a range from 0 to 4, with higher scores indicating greater bother. Cronbach’s alpha for this sample was .86.

Activities of Daily Living (Katz et al., 1963) and Instrumental Activities of Daily Living Scale—Frequency (Lawton & Brody, 1969): The seven-item ADL Scale (Cronbach’s alpha in the current sample = .84) assessed the CR’s ability to perform basic tasks of daily functioning independently (e.g., bathing, dressing, toileting, eating, grooming, and transfer). Similarly, the 8-item IADL Scale (Cronbach’s alpha = .76) assessed the assistance needed to perform higher level tasks such as shopping, operating the telephone, preparing meals, doing housework or laundry, and managing finances or medications. Total level of assistance needed for ADLs and IADLs were summed separately, with higher scores indicating more functional impairment.

Daily Care Bother (Gitlin et al., 2005): Bother associated with the tasks of providing daily care or assistance with ADLs (Katz et al., 1963) was also computed. For each of the seven items that CGs provided assistance, CGs reported their level of upset on a 5-point scale from 0 = no upset to 4 = extremely upset. A total CG upset score was found.

Table 1. Means, Standard Deviations, and Ranges for Demographic and Study Variables

<table>
<thead>
<tr>
<th>Demographics/context</th>
<th>M</th>
<th>SD</th>
<th>Range</th>
</tr>
</thead>
<tbody>
<tr>
<td>Caregiver subjective health</td>
<td>2.13</td>
<td>1.07</td>
<td>0 to 4</td>
</tr>
<tr>
<td>Caregiver age</td>
<td>59.65</td>
<td>13.07</td>
<td>22 to 88</td>
</tr>
<tr>
<td>Caregiver education</td>
<td>12.61</td>
<td>3.01</td>
<td>0 to 17</td>
</tr>
<tr>
<td>Years caring for care recipient</td>
<td>4.75</td>
<td>7.12</td>
<td>0 to 58</td>
</tr>
<tr>
<td>Care recipient MMSE total score</td>
<td>12.53</td>
<td>7.34</td>
<td>0 to 29</td>
</tr>
<tr>
<td>Subjective stressors</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Behavioral bother</td>
<td>1.46</td>
<td>0.88</td>
<td>0 to 3.95</td>
</tr>
<tr>
<td>Burden</td>
<td>17.19</td>
<td>8.87</td>
<td>0 to 42</td>
</tr>
<tr>
<td>Daily care bother</td>
<td>0.74</td>
<td>0.78</td>
<td>0 to 3.75</td>
</tr>
<tr>
<td>Quality of care</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Exemplary care</td>
<td>26.53</td>
<td>4.70</td>
<td>0 to 33</td>
</tr>
<tr>
<td>Emotional outcomes</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>CESD total score</td>
<td>9.88</td>
<td>6.45</td>
<td>0 to 30</td>
</tr>
<tr>
<td>Positive aspects of caregiving</td>
<td>25.51</td>
<td>8.95</td>
<td>0 to 36</td>
</tr>
</tbody>
</table>

Note: MMSE = Mini-Mental State Examination; CESD = Center for Epidemiological Studies-Depression scale.
for daily care bother by averaging the amount of bother experienced across daily care tasks. Scores of average daily care burden can range from 0 to 4; higher scores indicate more bother. Cronbach’s alpha for this sample was .86.

Zarit Caregiver Burden Inventory (Bedard et al., 2001; Zarit, Orr, & Zarit, 1985): The 12-item abbreviated version of the Zarit Caregiver Burden Inventory (Cronbach’s alpha = .85) was used to assess burden (e.g., negative cognitive appraisals, emotional states, and behaviors) associated with caregiving (e.g., not enough time for oneself, not as much privacy). Caregivers rated each item on a 5-point scale from 0 = never to 4 = nearly always. Scores range from 0 to 48, with higher scores indicating higher reported burden.

Mediator.—Exemplary Care (Dooley et al. 2007): The Exemplary Care Scale contains 11 items (see Appendix) that ask the CG to report the extent to which he or she engages in activities (e.g., “I take the time to sit and talk with [CR],” and “I make sure the food [CR] likes is available for meals and snacks”) or refrain from engaging in activities (e.g., being overcritical, interrupting the CR) during interaction with the CR. Items are rated on a 4-point scale ranging from 0 = never to 3 = always. Total scores range from 0 to 33, with higher scores indicating increased EC. Cronbach’s alpha for this sample is .74. Dooley and colleagues concluded that it is a useful tool in the evaluation of quality of informal care for chronically ill people.

Emotional Outcomes.—Center for Epidemiological Studies-Depression scale (CESD; Radloff, 1977): Caregiver depression was assessed using the 20-item CESD scale (Cronbach’s alpha = .82), which asks about the frequency with which respondents have experienced depressive symptoms within the past week (e.g. “I was bothered by things that usually don’t bother me,” “I felt that everything I did was an effort”). Total scores range from 0 to 60, with higher scores indicating elevated levels of depressive symptoms. A score of 16 or greater indicates that the individual may have clinically significant depressive symptoms (Radloff, 1977).

Positive Aspects of Caregiving (Tarlow et al., 2004): The nine-item PAC scale (Cronbach’s alpha = .92) presented statements about the CG’s mental or affective state in the context of the caregiving experience. Responses were provided on a 5-point scale (0 = disagree a lot and 4 = agree a lot) and were designed to assess the perception of benefits within the caregiving context such as feeling more useful and feeling appreciated. Scores range from 0 to 36, with higher scores representing more positive appraisals of the caregiving situation.

Data Analysis

A confirmatory factor analysis (CFA) was conducted to examine the factor structure of the Exemplary Care Scale in a sample of dementia CGs. Due to our focus on potential racial/ethnic differences in this construct, we specified the model with a parsimonious one-factor solution. The CFA was conducted with AMOS in SPSS using maximum likelihood estimation. A multiple-groups analysis was conducted to examine measurement invariance between three race/ethnicities on the Exemplary Care Scale. Two models were created for this analysis: one in which all loadings were constrained to be equal across groups and one in which all loadings were free to vary across groups. A chi-square difference test was used to test for a significant difference between the constrained and unconstrained models. Measurement invariance would be demonstrated if there was not a significant difference between models.

In addition, we investigated the study hypotheses by testing the total indirect effect of subjective appraisal on emotional outcomes through EC. Six separate mediation analyses were conducted using the three predictor variables (daily care bother, burden, and behavioral bother) to predict the two outcome variables (CESD and PAC) while controlling for CG context variables (relationship to CR, sex, race/ethnicity, age, education, years caring for CR, and subjective health) and CR cognitive impairment for the entire sample. The same analyses were conducted on each racial/ethnic group separately.

Bootstrapping

We used bootstrapping procedures to obtain estimates and confidence intervals around the indirect effects to overcome potential problems caused by unmet assumptions in mediation analysis (Preacher & Hayes, 2008). We used an SPSS macro that accompanies the article by Preacher and Hayes on testing multiple mediation models to conduct the main analyses.

Calculation of the total indirect effects involved four steps (see Preacher & Hayes, 2008): (a) From our original data set of 621 cases, 5,000 bootstrap
samples were randomly generated using random sampling with replacement; (b) the regression coefficients ($a$ and $b$) and the indirect effect estimates ($ab$) were calculated based on this bootstrap sample; (c) by repeating this process 5,000 times, 5,000 estimates of the indirect effect of interest were obtained; and (d) the mean of the 5,000 indirect effect estimates was calculated. If a zero was not included in the 95% confidence interval of the estimate, we concluded that the indirect effect was statistically significant (Preacher & Hayes, 2008).

**Results**

**CFA and Measurement Equivalence Analyses**

Characteristics of the sample and variables of interest may be found in Table 1. Three indicators were used to assess model fit: chi-square ($\chi^2$), comparative fit index (CFI), and root mean square error of approximation (RMSEA). Acceptable fit indices were found for the one-factor model: $\chi^2(44) = 188.495$, $p < .001$, CFI = .852, RMSEA = .072. All items were significant estimates of the single factor (see Table 2). Notably, the large, significant chi-square index found for this model is likely a factor of the sample size and should not be interpreted as a sign of poor model fit (Kenny, 2010). For measurement equivalence testing, the following fit indices were found for the constrained and unconstrained models, respectively: $\chi^2(152) = 346.949$, $p < .001$, CFI = .810, RMSEA = .045; $\chi^2(132) = 333.553$, $p < .001$, CFI = .804, RMSEA = .049. A chi-square difference test was nonsignificant, $\chi^2_{diff}(20) = 13.936$. This suggests measurement equivalence across racial/ethnic groups.

**Bivariate Associations**

Table 3 displays the correlations among the study variables. As expected, daily care bother was positively correlated with depression ($r = .37$, $p < .01$) and negatively correlated with PAC ($r = -\cdot30$, $p < .01$). Burden and behavioral bother were also positively correlated with depression ($r = .59$, $p < .01$; $r = .40$, $p < .01$) and negatively correlated with PAC ($r = -\cdot42$, $p < .01$; $r = -\cdot33$, $p < .01$). Daily care bother ($r = -\cdot23$, $p < .01$), burden ($r = -\cdot27$, $p < .01$), and behavioral bother ($r = -\cdot16$, $p < .01$) were all negatively correlated with EC.

**Mediation Models**

The mediation models tested the indirect effect of subjective appraisals on emotional outcomes through EC, beyond the impact of caregiving context (represented by relationship to CR, gender, race/ethnicity, age, education, years caring for CR, and subjective health) and CR cognitive impairment. Table 4 displays the bootstrapped estimates, confidence intervals, and amount of variance explained for the indirect effects for the entire sample with race/ethnicity as a covariant.

Exemplary care was found to be a significant mediator in all of the full-sample models except for the effect of burden on depressive symptoms. As predicted, daily care bother, burden, and behavioral bother were negatively associated with EC, and EC in turn was negatively associated with depression and positively associated with PAC. Although the pattern held for the indirect effect of burden on depression, we cannot conclude that EC is a significant mediator of this relation because

<table>
<thead>
<tr>
<th>Item</th>
<th>Whole-sample estimate</th>
<th>Caucasian estimate</th>
<th>African American estimate</th>
<th>Hispanic/Latino estimate</th>
</tr>
</thead>
<tbody>
<tr>
<td>NOCRI</td>
<td>1.000</td>
<td>1.000</td>
<td>1.000</td>
<td>1.000</td>
</tr>
<tr>
<td>INCLU</td>
<td>0.616***</td>
<td>0.480***</td>
<td>0.609***</td>
<td>0.832***</td>
</tr>
<tr>
<td>FGODD</td>
<td>0.545***</td>
<td>0.515***</td>
<td>0.530***</td>
<td>0.582***</td>
</tr>
<tr>
<td>BANDC</td>
<td>0.554***</td>
<td>0.507***</td>
<td>0.558***</td>
<td>0.542***</td>
</tr>
<tr>
<td>GFOOD</td>
<td>0.386***</td>
<td>0.217***</td>
<td>0.465***</td>
<td>0.407***</td>
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<tr>
<td>ACHIL</td>
<td>0.804***</td>
<td>0.720***</td>
<td>0.788***</td>
<td>1.016***</td>
</tr>
<tr>
<td>SANDT</td>
<td>0.965***</td>
<td>0.806***</td>
<td>0.840***</td>
<td>1.385***</td>
</tr>
<tr>
<td>NOBUR</td>
<td>0.880***</td>
<td>0.836***</td>
<td>0.787***</td>
<td>1.171***</td>
</tr>
<tr>
<td>NOINT</td>
<td>0.978***</td>
<td>0.863***</td>
<td>0.910***</td>
<td>1.230***</td>
</tr>
<tr>
<td>DOTHI</td>
<td>0.981***</td>
<td>0.886***</td>
<td>0.827***</td>
<td>1.353***</td>
</tr>
<tr>
<td>UNHUR</td>
<td>0.867***</td>
<td>0.769***</td>
<td>0.860***</td>
<td>0.973***</td>
</tr>
</tbody>
</table>

*Full items can be found in the Appendix.

**Standardized estimates.

Unstandardized estimates.

***$p < .001$.
the confidence interval for the indirect effect includes zero (see Table 4).

Table 5 displays the results for White/Caucasian CGs. As in the full-sample model, EC was found to be a significant mediator in the daily care bother and behavioral bother models but not in the model examining the effect of burden on depressive symptoms and PAC.

Table 6 displays the results for Black/African American CGs. Exemplary care was found to be a significant mediator in two of the three models with PAC as an outcome (excluding the model with behavioral bother). Exemplary care was not a significant mediator in the models that included depressive symptoms as an outcome.

Table 7 displays the results for Hispanic/Latino CGs. Exemplary care was found to be a significant mediator in all of the models except for the effect of behavioral bother on PAC.

Discussion

Our findings suggest that, among dementia CGs, EC represents a relatively unified construct that helps explain the relations between subjective appraisals and concurrent emotional outcomes within the stress process. Moreover, the specific pattern of relations between subjective appraisal, EC, and emotional outcomes varies by race/ethnicity. Our findings extend the results of Christie and colleagues (2009) by addressing the perceptions of CGs themselves rather than the perceptions of CRs. Christie and colleagues used data from FRILL2 and eliminated CR data when participants were determined to be unable to respond due to cognitive or physical impairment. Thus, our analyses represent the first attempt to examine the construct of EC within the context of dementia.

Our first hypothesis regarding the pattern of correlation with EC was fully supported within the whole sample (Table 3). This pattern of relation held among White/Caucasian and Hispanic/Latino CGs. As expected, provision of EC was negatively related to daily care bother, burden, behavioral bother, and depression. Exemplary care was not a significant mediator in the models that included depressive symptoms as an outcome.

Table 7 displays the results for Hispanic/Latino CGs. Exemplary care was found to be a significant mediator in all of the models except for the effect of behavioral bother on PAC.

Table 4. Bootstrapped Estimates, Confidence Intervals, and Explained Variances for Tests of the Indirect Effects

<table>
<thead>
<tr>
<th>IV</th>
<th>DV</th>
<th>Effect of IV on M (a)</th>
<th>Effect of M on DV (b)</th>
<th>Direct effects (c')</th>
<th>Indirect effect (a × b),</th>
<th>confidence intervals</th>
</tr>
</thead>
<tbody>
<tr>
<td>DCB</td>
<td>CESD: R² = .27*</td>
<td>-1.31 (.25)*</td>
<td>-0.16 (.05)**</td>
<td>2.61 (.31)*</td>
<td>0.08 to 0.40</td>
<td></td>
</tr>
<tr>
<td>Burden</td>
<td>CESD: R² = .42*</td>
<td>-0.14 (.02)*</td>
<td>-0.08 (.04)</td>
<td>0.40 (.03)*</td>
<td>-0.01 to 0.03</td>
<td></td>
</tr>
<tr>
<td>Behavioral bother</td>
<td>CESD: R² = .30*</td>
<td>-0.73 (.23)*</td>
<td>-0.19 (.05)*</td>
<td>2.69 (.27)*</td>
<td>0.05 to 0.27</td>
<td></td>
</tr>
<tr>
<td></td>
<td>PAC: R² = .25*</td>
<td>-0.70 (.23)*</td>
<td>0.43 (.07)*</td>
<td>-1.77 (.39)*</td>
<td>-0.56 to -0.10</td>
<td></td>
</tr>
</tbody>
</table>

Notes: Values within parentheses indicate standard error. PAC = positive aspects of caregiving; CESD = Center for Epidemiological Studies-Depression scale; DCB = daily care bother; IV = independent variable; M = mediator; DV = dependent variable; R² = adjusted R².*Significant point estimate.

*p < .01. **p < .05.
be inferred from cross-sectional data, the pattern of associations in this study provide support for the notion that engaging in EC behaviors may lessen the emotional effects of negative subjective appraisals of caregiving.

With our second hypothesis, we predicted that EC would mediate the relations between negative subjective appraisals (e.g., daily care bother, burden, and behavioral bother) and emotional outcomes (e.g., depression and PAC). We found support for five of our six predicted mediations within the whole sample. Specifically, with regard to depression, EC mediated the relation between daily care bother and depression and between behavioral bother and depression but failed to mediate the relation between burden and depression. Exemplary care mediated the relation of each subjective appraisal variable and PAC.

Why did EC not mediate the relation between burden and depression? Perhaps the answer has to do with the nature of the burden construct. One possibility for these findings is that burden encompasses negative emotional states and cognitive appraisals as well as behaviors specific to caregiving. In contrast, both daily care bother and behavioral bother measure distress as the result of specific behaviors associated with caregiving. For example, daily care bother results from appraisals associated with providing assistance with ADLs or IADLs. Behavioral bother results from appraisals associated with providing assistance with ADLs or IADLs. Behavioral bother results from appraisals associated with dementia-related behavior such as asking the same question repeatedly, crying, or doing something embarrassing. These constructs represent cognitive appraisals regarding caregiving-specific behaviors, and EC represents care-specific behavior. Burden may simply be too general a cognitive appraisal to show the caregiving behavior-specific mediations found for more proximal cognitive appraisals.

In contrast, EC explained the relations between each subjective appraisal variable and PAC within the entire sample. Enacting the behaviors represented by EC can lead directly to the experience of positive emotion through facilitating

Table 5. Bootstrapped Estimates, Confidence Intervals, and Explained Variances for Tests of the Indirect Effects for White/Caucasian Caregivers

<table>
<thead>
<tr>
<th>IV</th>
<th>DV</th>
<th>Effect of IV on M (a)</th>
<th>Effect of M on DV (b)</th>
<th>Direct effects (c')</th>
<th>Indirect effect (a × b), confidence intervals</th>
</tr>
</thead>
<tbody>
<tr>
<td>DCB</td>
<td>CESD: $R^2 = .34^*$</td>
<td>$-1.23 (.39)^*$</td>
<td>$-0.21 (.09)^*$</td>
<td>$2.45 (.48)^*$</td>
<td>$0.06$ to $0.67$</td>
</tr>
<tr>
<td></td>
<td>PAC: $R^2 = .15^*$</td>
<td>$-1.23 (.39)^*$</td>
<td>$0.38 (.13)^*$</td>
<td>$-1.53 (.75)^*$</td>
<td>$-1.17$ to $-0.13$</td>
</tr>
<tr>
<td>Burden</td>
<td>CESD: $R^2 = .48^*$</td>
<td>$-0.16 (.04)^*$</td>
<td>$-0.10 (.08)$</td>
<td>$0.40 (.04)^*$</td>
<td>$-0.01$ to $0.05$</td>
</tr>
<tr>
<td></td>
<td>PAC: $R^2 = .26^*$</td>
<td>$-0.16 (.04)^*$</td>
<td>$0.17 (.13)$</td>
<td>$-0.43 (.07)^*$</td>
<td>$-0.08$ to $0.01$</td>
</tr>
<tr>
<td>Behavioral bother</td>
<td>CESD: $R^2 = .37^*$</td>
<td>$-0.88 (.37)^*$</td>
<td>$-0.23 (.08)^*$</td>
<td>$2.61 (.45)^*$</td>
<td>$0.03$ to $0.55$</td>
</tr>
<tr>
<td></td>
<td>PAC: $R^2 = .15^*$</td>
<td>$-0.88 (.37)^*$</td>
<td>$0.36 (.13)^*$</td>
<td>$-1.80 (.71)^*$</td>
<td>$-0.56$ to $-0.10$</td>
</tr>
</tbody>
</table>

Notes: Values within parentheses indicate standard error. PAC = positive aspects of caregiving; CESD = Center for Epidemiological Studies-Depression scale; DCB = daily care bother; IV = independent variable; M = mediator; DV = dependent variable; $R^2 = adjusted R^2$.

*Significant point estimate.
$p < .01$. **p < .05.

Table 6. Bootstrapped Estimates, Confidence Intervals, and Explained Variances for Tests of the Indirect Effects for Black/African American Caregivers

<table>
<thead>
<tr>
<th>IV</th>
<th>DV</th>
<th>Effect of IV on M (a)</th>
<th>Effect of M on DV (b)</th>
<th>Direct effects (c')</th>
<th>Indirect effect (a × b), confidence intervals</th>
</tr>
</thead>
<tbody>
<tr>
<td>DCB</td>
<td>CESD: $R^2 = .29^*$</td>
<td>$-1.54 (.43)^*$</td>
<td>$-0.01 (.08)$</td>
<td>$2.85 (.50)^*$</td>
<td>$-0.27$ to $0.27$</td>
</tr>
<tr>
<td></td>
<td>PAC: $R^2 = .25^*$</td>
<td>$-1.53 (.43)^*$</td>
<td>$0.34 (.12)^*$</td>
<td>$-2.91 (.72)^*$</td>
<td>$-1.21$ to $-0.09$</td>
</tr>
<tr>
<td>Burden</td>
<td>CESD: $R^2 = .44^*$</td>
<td>$-0.19 (.05)^*$</td>
<td>$0.09 (.07)$</td>
<td>$0.47 (.03)^*$</td>
<td>$-0.05$ to $0.01$</td>
</tr>
<tr>
<td></td>
<td>PAC: $R^2 = .26^*$</td>
<td>$-0.20 (.05)^*$</td>
<td>$0.32 (.12)^*$</td>
<td>$-0.33 (.08)^*$</td>
<td>$-0.14$ to $-0.02$</td>
</tr>
<tr>
<td>Behavioral bother</td>
<td>CESD: $R^2 = .27^*$</td>
<td>$-0.41 (.42)$</td>
<td>$-0.10 (.09)$</td>
<td>$2.45 (.47)^*$</td>
<td>$-0.03$ to $0.26$</td>
</tr>
<tr>
<td></td>
<td>PAC: $R^2 = .23^*$</td>
<td>$-0.38 (.42)$</td>
<td>$0.42 (.11)^*$</td>
<td>$-2.18 (.67)^*$</td>
<td>$-0.67$ to $0.17$</td>
</tr>
</tbody>
</table>

Notes: Values within parentheses indicate standard error. PAC = positive aspects of caregiving; CESD = Center for Epidemiological Studies-Depression scale; DCB = daily care bother; IV = independent variable; M = mediator; DV = dependent variable; $R^2 = adjusted R^2$.

*Significant point estimate.
$p < .01$. **p < .05.
meaning-based coping appraisals within the stress process (Folkman, 1997, 2008, 2009). In the Folkman model, positive emotional outcomes facilitate continued coping, and continued coping may reduce negative emotional outcomes. Hence, a potentially potent intervention strategy may be to teach CGs how to engage in EC behaviors so that they may experience positive emotions even when the context of caregiving results in negative subjective appraisals. We will describe this idea in greater depth as it relates to the findings within each racial/ethnic group.

Among White/Caucasian CGs, EC demonstrated the same explanatory pattern within the mediation models as was found for the entire sample. Thus, specific targets for a skills-based intervention designed to teach EC behaviors may include instructions regarding behaviors in which to engage (e.g., provide foods that the CR likes, take the time to sit and talk with the CR) and to avoid (e.g., being overcritical, interrupting the CR) in order to reduce feelings of depression and increase PAC. In contrast, among Black/African American CGs, EC only was found to mediate the relation between burden and PAC and between daily care bother and PAC. It is curious that no significant findings emerged for depression. Notably, previous research using the CESD has shown that different racial/ethnic groups do not report their symptoms of depression in the same way (Kim, Chiriboga, & Jang, 2009). Moreover, Hilgeman and colleagues (2009) found racial/ethnic differences in specific expressions of the stress process among dementia CGs. Lawton, Rajagopal, Brody, and Kleban (1992) and Roff, Burgio, Gitlin, Nichols, and Chaplin (2004) found Black/African American dementia CGs to have higher levels of mastery, lower subjective burden, greater satisfaction, and greater religious coping than White/Caucasian CGs. Thus, Black/African American culture appears to facilitate a pathway in which engagement in EC behaviors relates negative subjective appraisal to perception of benefits within the caregiving context (e.g., PAC) rather than explaining a link between negative subjective appraisal and symptoms of depression. This pattern is in keeping with Folkman’s (1997, 2008, 2009) conceptualization of meaning-based coping within the stress process. Qualitative inquiry could be used to explore the specific EC behaviors that facilitate positive emotional outcome.

Regarding Hispanic/Latino CGs, EC was found to mediate the relation between burden, behavioral bother, daily care bother and depression as well as between burden and PAC and daily care bother and PAC. Kim and colleagues (2009) found that Hispanic/Latino individuals were more likely to endorse positive affect items within the CESD than other groups, possibly suggesting that cultural differences in depression symptom measurement influences the path in which engagement in EC explains the relation between subjective appraisal of burden and depression. Further research should explore the reason why EC did not mediate the relation between behavioral bother and PAC.

As in any research, our study has limitations. First, we conducted a secondary data analysis of baseline data from REACH II. Therefore, our data are cross-sectional and our interpretations do not represent change across time. Second, the REACH II data are useful in examining general racial/ethnic differences between broad groups of White/Caucasian, Black/African American, and Hispanic/Latino CGs.

![Table 7. Bootstrapped Estimates, Confidence Intervals, and Explained Variances for Tests of the Indirect Effects for Hispanic/Latino Caregivers](http://gerontologist.oxfordjournals.org/)

<table>
<thead>
<tr>
<th>IV</th>
<th>DV</th>
<th>Effect of IV on M (a)</th>
<th>Effect of M on DV (b)</th>
<th>Direct Effects (c)′</th>
<th>Indirect effect (a × b), confidence intervals</th>
</tr>
</thead>
<tbody>
<tr>
<td>DCB</td>
<td>CESD: R² = .31*</td>
<td>-1.15 (.51)**</td>
<td>-0.23 (.09)*</td>
<td>2.49 (.64)*</td>
<td>0.03 to 0.71</td>
</tr>
<tr>
<td></td>
<td>PAC: R² = .26*</td>
<td>-1.12 (.51)**</td>
<td>0.47 (.12)*</td>
<td>-1.21 (.84)</td>
<td>-1.23 to -0.08</td>
</tr>
<tr>
<td>Burden</td>
<td>CESD: R² = .44*</td>
<td>-0.10 (.04)**</td>
<td>-0.18 (.08)**</td>
<td>0.35 (.04)*</td>
<td>0.01 to 0.05</td>
</tr>
<tr>
<td></td>
<td>PAC: R² = .28*</td>
<td>-0.09 (.04)**</td>
<td>0.43 (.12)*</td>
<td>-0.22 (.07)*</td>
<td>-0.09 to -0.01</td>
</tr>
<tr>
<td>Behavioral bother</td>
<td>CESD: R² = .36*</td>
<td>-0.69 (.40)</td>
<td>-0.23 (.09)*</td>
<td>2.68 (.48)*</td>
<td>0.01 to 0.45</td>
</tr>
<tr>
<td></td>
<td>PAC: R² = .26*</td>
<td>-0.66 (.40)</td>
<td>0.46 (.12)*</td>
<td>-1.45 (.66)**</td>
<td>-0.83 to 0.01</td>
</tr>
</tbody>
</table>

*Significant point estimate. **p < .01. "p < .05.

Notes: Values within parentheses indicate standard error. PAC = positive aspects of caregiving; CESD = Center for Epidemiological Studies-Depression scale; DCB = daily care bother; IV = independent variable; M = mediator; DV = dependent variable; R² = adjusted R².

Table 7. Bootstrapped Estimates, Confidence Intervals, and Explained Variances for Tests of the Indirect Effects for Hispanic/Latino Caregivers

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by guest on November 7, 2016 http://gerontologist.oxfordjournals.org/Downloaded from
Generalization of our findings to other racial/ethnic groups (e.g., Asian Americans) or to ethnic differences within broad racial/ethnic groups cannot be made. Finally, we have combined Cuban American and Mexican American individuals into the general category “Hispanic/Latino”; these two groups have distinct cultures and approaches to caregiving that may influence the expression of EC and its relation to subjective appraisal and emotional outcomes.

Implications

Our findings have direct implications for interventions designed to improve CGs’ skills in order to reduce the emotional impact of caregiving. Specifically, our findings suggest that engaging in EC behaviors is one mechanism through which CGs’ subjective appraisal of the caregiving situation leads to positive, while reducing negative, emotional outcomes. It is the CG’s behavior, not just his or her subjective appraisal, that suggests an important target for intervention. For example, White/Caucasian and Hispanic/Latino dementia caregivers may engage in educational interventions in which “exemplary care” is defined as behaviors that demonstrate respect to the CR. Specifically, behaviors may include taking the time to sit and talk with the CR or making sure that the CR engages in activities that he or she enjoys (see Appendix for items). Moreover, CGs can be taught that, through EC behaviors, they can provide these opportunities to their CRs (e.g., provide foods that the CR likes). Interventions targeting these CGs may encourage them to engage in such behaviors to both decrease symptoms of depression and enhance PAC. In contrast, among Black/African American CGs, EC mediated the relations between the subjective appraisals and PAC but not symptoms of depression. Hence, targets for intervention may best focus on teaching EC behaviors with hopes of enhancing CGs’ positive emotional experience within the caregiving context.

Teaching EC behaviors creates a focus on behavioral skill. This focus may be more acceptable to a subset of CGs (e.g., men) who may have adverse reactions to the idea of participating in psychotherapeutic interventions to alter negative cognitive appraisals. Although the intention of such skill building interventions may be to improve the emotional health of the CG, an important foreseeable consequence is the increased quality of care provided to the loved one with dementia.

Funding

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Acknowledgments

A detailed description of the REACH II study design, methods, assessment instruments, and original de-identified data are available to the public at the National Archive of Computerized Data on Aging (http://wehapp.nci.nih.gov/COCOON/NACDA-Study/04354.html). The Study Manual of Operations, which contains detailed information about the intervention, including resource and training materials, is also available at http://www.edic.pitt.edu/reach2/public/manuals.html.

References


Appendix

The Exemplary Care Scale

Instructions to participants: The following statements have to do with the interaction you have with (CR). For each statement, please tell me which one of these answers you feel is most accurate.

Response Options:

0 = Never 1 = Sometimes 2 = Often 3 = Always

Items:

1. [NOCRI] I avoid being overcritical of (CR).
2. [INCLU] I make sure (CR) is included in special gatherings such as family and friends getting together for religious or national holidays (such as Thanksgiving) when at all possible.
3. [FGOOD] To make (CR) feel refreshed and good about himself/herself, I do things like being sure that he/she is dressed nicely or that his/her hair is clean and styled.
4. [BANDC] I make sure that where (CR) lives is bright and cheery.
5. [GFOOD] I make sure the food (CR) likes is available for meals and snacks.
6. [ACHIL] I actively avoid treating (CR) like a child.
7. [SANDT] I take the time to sit and talk with (CR).
8. [NOBUR] I do everything I can to avoid making (CR) feel that he/she is a burden to me.
9. [NOINT] I really try to avoid interrupting (CR) when he/she is talking.
10. [DOTHI] When at all possible, I make sure that (CR) gets to do some of the things he/she enjoys (e.g., playing cards, visiting friends, going for a walk, listening to music).
11. [UNHUR] I try to maintain a relaxed, unhurried atmosphere for (CR).