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Research on Aging 2010; 32; 175 originally published online Nov 13, 2009;

DOI: 10.1177/0164027509351473

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Research on Aging

32(2) 175–199

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DOI: 10.1177/0164027509351473

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Abstract

Using caregiver identity theory, the authors investigated whether role discrepancies mediated the relationships between illness-related stressors (activities of daily living [ADLs] limitations and problem behaviors) and burden (stress, relationship, and objective burden) for spouse caregivers. Participants completed measures of identity standards for spouse and caregiver roles and behaviors, burden, assistance with ADLs, and problem behaviors. Structural equation modeling analyses revealed that role discrepancies completely mediated the relationships between ADLs and stress and relationship burden. Although role discrepancies mediated the relationships between problem behaviors and all forms of burden, there were direct relationships between problem behaviors and burden. Finally, participants who exceeded their relationship identity standards experienced greater burden. Supporting caregiver identity theory, the results suggest that ADL assistance is burdensome for caregivers when it highlights inconsistencies between their behaviors and their relationship expectations. However, unpredictable stressors such as problem behaviors are both inherently burdensome and highlight role discrepancies.

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Keywords

identity, caregiving, spouses, roles, burden, stressors, problem behaviors, functional decline

The negative outcomes of dementia caregiving have been investigated in terms of multidimensional aspects of burden. These outcomes include the emotional impact of caregiving (stress burden), changes in the relationships between caregivers and their relatives with dementia (relationship burden), and infringement on other aspects of caregivers' lives (objective burden) (Montgomery, Borgatta, and Borgatta 2000). The relationships between dementia-related stressors and burden have been investigated extensively. Although there are a variety of factors that influence burden, including social support and caregiver resources, and coping, the most commonly researched dementia-related stressors include those related to functional declines and problem behaviors (Pearlin et al. 1990; Pinquart and Sorensen 2003; Savundranayagam, Hummert, and Montgomery 2005). However, these stressors are not uniformly burdensome for spouse caregivers, nor are they uniformly tied to specific dimensions of burden. Montgomery and Kosloski's (forthcoming) caregiver identity theory accounts for this variability in the sources and experiences of burden. Their theory outlines psychosocial processes that link particular stressors to specific forms of burden within the context of the caregiving career. This study constituted an initial investigation of this theory. Although caregiver identity theory applies to any type of relationship between a caregiver and care recipient, the study included spouse caregivers only in an effort to limit the variability of the sample. Spouses were included because they tend to be the first choice as caregivers, they perform more intimate care tasks, and they tend to remain in the caregiver role for a longer period compared with other family caregivers (Biegel, Sales, and Schulz 1991; Marks, Lambert, and Choi 2002; Montgomery and Kosloski 2000; Seltzer and Li 2000; Young and Kahana 1989).

Identity Maintenance and the Caregiving Career

Given that dementia lasts an average of 10 years (Alzheimer's Association 1996) and most spouses want to postpone placement, caregiving often becomes a career (Aneshensel et al. 1995). The transition into the caregiving role is ambiguous because it does not have a discrete demarcation, as in parenthood, for example, for which the role transition begins with a child's birth (Seltzer and Li 1996). Instead, the caregiver role emerges out of the historical context of a spousal relationship (Montgomery and Kosloski 2000). As the needs of

the care recipient increase in quantity and intensity over time, the dyadic relationship between the caregiver and the care recipient changes. Caregivers change both their behavior and role identities in relation to care recipients. This shift in identity is primarily necessitated by significant changes in the care context, most often an increase in the care recipient's level of dependency. Over time, the caregiving activities transform the initial familial relationship into a caregiving relationship. For example, the initial care needs of a man cared for by his wife may be relatively small, involving a minimal extension of the spousal role. As dementia progresses, however, the husband's needs and the resultant demands placed on his wife increase. Her caregiving activities become more intense and discrepant with the spousal norms that she has internalized, thereby transforming the initial spousal relationship into a caregiving relationship. The wife may find herself engaging in new tasks within the relationship, such as attending to finances or dressing her husband, which may be interpreted as discrepant with her norms as a wife. To the extent that the wife's behavior is discrepant with her self-view, she experiences distress in the form of burden, and pressure accrues to reconcile this discrepancy. The incongruence between caregiving tasks and the meaning attached to these tasks causes caregivers' distress and prompts action to restore congruence to relieve the distress. Montgomery and Kosloski (forthcoming) argued that this distress ultimately requires an identity change or intervention to help caregivers regain congruence between their behaviors and identity standards.

This conceptualization of the distress process is consistent with the work of Burke (1991, 1996) and his colleagues, who consider identity maintenance as a continuous process in which identity standards are applied to the self in a social role. Identity standards are personal norms that are influenced by social, cultural, and familial norms and serve as reference points for self-appraisals in a role. Consistency between an individual's identity standards and appraisal of behaviors maintains identity. In contrast, inconsistency challenges identity, resulting in stress and, at times, a transition to a different social role and new identity standard (Burke 1991, 1996).

Caregiver identity theory suggests that because most spouse caregivers have been in enduring marriages and the caregiver role emerges out of the initial spousal role, their identity in relation to care recipients encompasses both spousal and caregiver roles. Consequently, their identity standards for relating to care recipients are composed of elements related to both roles and are important for understanding experiences of burden across the caregiving career. The salience of contradictions in marriages (Baxter et al. 2002), reports of anticipatory grief responses (Meuser and Marwit 2001), and the notion of "nonexistent but nonterminal" relationships (Blieszner and Shifflett 1990)

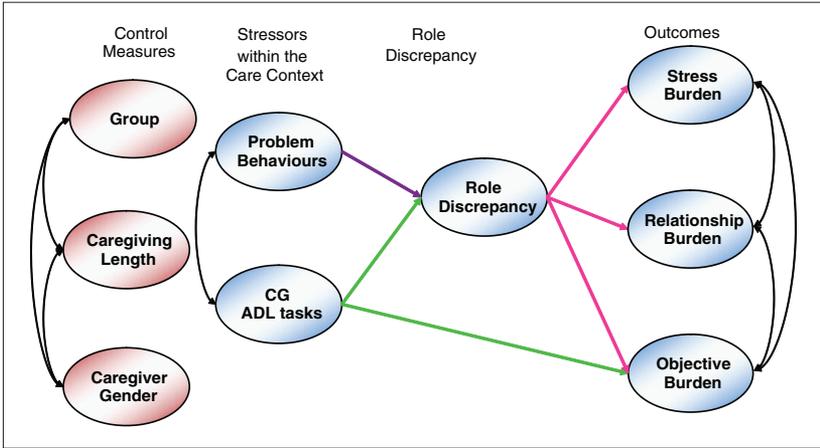


Figure 1. Hypothesized model.

Note: Controlling for variables in structural equation modeling requires direct paths (not shown) from control measures to each latent construct in the model. ADL = activity of daily living; CG = caregiver.

reveal both the centrality of the spousal role and caregivers’ awareness of changes in that role. When meeting dementia-related care relationships, the identity standards most closely associated with a caregiving role may also be salient, and self-appraisal may be discrepant with those norms. In other words, as an individual assumes more caregiving tasks, his or her identity in relation to the care recipient (partner in the dyad) is altered, and consequently so are the rules. An individual does not have an identity as a caregiver and an identity as a spouse but an identity that is determined by both roles, because both roles create one’s identity in relationship to the other individual. Therefore, caregivers may simultaneously experience burden because of inconsistencies in norms associated with both spousal and caregiver roles (see Figure 1).

Purpose of the Study

We tested a key aspect of caregiver identity theory (Montgomery and Kosloski forthcoming). As depicted in Figure 1, we investigated the impact of stressors within the care context (activities of daily living [ADLs] limitations and problem behaviors) on discrepancies between appraisals of caregivers’ self-reported behaviors and identity standards for the spouse and caregiver roles. Second, we examined the impact of role discrepancy as a mediator of the relationship between stressors and various dimensions of caregiver burden.

Burden is often used interchangeably with stress (Vitaliano, Young, and Russo 1991), but in this study, we examined multidimensional aspects of burden (stress burden, relationship burden, and objective burden). Third, assistance with ADLs was expected to be a direct predictor of objective burden (or infringement on caregiver time) because it can take time away from the caregiver's personal time. Gender and the length of caregiving were included as control variables because they are known to contribute to caregiver burden (Pinquart and Sorensen 2003) and may influence spousal and caregiver roles. Although caregiver identity theory hypothesizes that role discrepancy fully mediates the relationship between problem behaviors and all three types of burden, problem behaviors have been strong and consistent direct predictors of burden (Pinquart and Sorensen 2003; Savundranayagam et al. 2005). As such, we tested an alternative hypothesized model that incorporated aspects of caregiver identity theory and previous research findings. This model was identical to the hypothesized model except that it tested whether problem behaviors directly and indirectly (via role discrepancies) predicted all three dimensions of burden.

Method

Participants and Procedure

The sample for this study included 358 spouse caregivers from two groups. Participants included 112 caregivers enrolled in a national demonstration program providing services such as case management and respite (Montgomery, Kosloski, and Holley 2003). The caregivers in this group were assessed before services were provided. Participants in this study also included 246 caregivers who are part of a registry called the League of Experienced Family Caregivers (LEFC) at the University of Wisconsin–Milwaukee. Participants in both groups were primarily recruited via their care managers. Given that convenience samples are likely to include a limited range of caregivers, our goal for including both groups was to maximize variability in an effort to represent the full range of the caregiving experience. Telephone interviews with caregivers included assessments of their spouses' functional status and problem behaviors, as well as caregiver burden and new measures of spousal and caregiver identity standards and spousal and caregiver self-appraisal. Less than 9% of the data were missing. Missingness was not specific to any one variable. Missing values were imputed using multiple imputation using the Markov-chain Monte Carlo method. Five complete data sets were generated, and analyses using structural equation modeling (SEM) were conducted

Table 1. Description of the Sample of Caregivers ($N = 358$)

Variable	Value
Average age (years) (range)	70 (36 to 89)
Gender	
Male	32%
Female	68%
Ethnicity	
White	92%
African American	6%
Hispanic	1%
Other	1%
Employment	
Full-time	13%
Part-time	10%
Fully retired	48%
Homemaker	15%
Retired but working part-time	6%
Other	8%
Caregiving length	
<6 months	2%
6 to 12 months	7%
13 to 24 months	14%
25 months to <5 years	34%
≥ 5 years	43%

on each data set. The resulting 5 sets of parameter estimates and standard errors were pooled into a single set of estimates using Rubin's (1987) rules.

The average age of caregivers was 70 years, and 68% were wives (Table 1). Most spouses had provided care for over a year, with 34% providing assistance between 2 and 5 years, and 43% providing care for over 5 years. The average age of care recipients was 74 years, and all were community dwelling. According to caregiver self-report assessments, almost 80% of care recipients had cognitive or memory problems, with over half being diagnosed with probable Alzheimer's disease or dementia.

Measures

Control variables. Group was included as a categorical variable (1 = LEFC, 2 = national demonstration program), as was gender (0 = female, 1 = male). Length of caregiving was measured using a single question that asked how long participants had been caring for their spouses. The question included the

following five options: *less than 6 months*, *6 to 12 months*, *13 to 24 months*, *25 months to less than 5 years*, and *5 years or more*.

Assistance with ADLs. Caregivers' assistance with ADLs was measured using a single item that asked participants to estimate the number of hours they spent on assisting their spouses with activities such as bathing, feeding, dressing, and toileting.

Problem behaviors. Pearlin et al.'s (1990) problem behavior measure was used to assess the frequency of difficult behaviors exhibited by care recipients. Caregivers rated how frequently they dealt with 15 problematic behaviors in the past week using the following response categories: *0 days*, *1 to 2 days*, *3 to 4 days*, and *5 or more days*. Items included "dress the wrong way," "hide belongings and forget about them," "become restless or agitated," and "become suspicious or believe someone is going to harm [him or her]." Cronbach's α for this measure was .75.

Role discrepancy. Role discrepancy is the extent to which the standards of the relationship identity are inconsistent with the behavior of our participants. We included spousal role discrepancy and caregiver role discrepancy as indicators of the larger identity discrepancy. As a basis for assessing role discrepancies, two inventories were developed to measure identity standards and appraisal of self-reported behaviors in spousal and caregiver roles. The identity standard inventory had spousal and caregiver dimensions. Spousal identity standards were based on the literature on enduring marriages, relationship maintenance, and marital quality (Canary and Stafford 1994; Robinson and Blanton 1993; Weigel and Ballard-Reisch 1999). The standards (Table 2) assessed four domains characterizing good marriages: intimacy (e.g., loving), companionship (e.g., fun to be around), emotional support (e.g., comforting), and shared lives (e.g., shares special times and activities). Caregiver identity standards were based on definitions of caregiving (Miller and Kaufman 1996; Stone, Cafferata, and Sangl 1987). The standards (Table 3) assessed four caregiving domains: physical care tasks (e.g., keeps care recipient properly groomed), responsibility (e.g., remains alert for danger signs), effectiveness (e.g., organized), and nurturing (e.g., patient). Participants chose a number from 1 (*strongly disagree*) to 6 (*strongly agree*) that best described their personal norms (not personal behaviors) for each role. Each item for the spouse identity standard began with the following stem phrase: "To be a good wife [husband] for her [his] husband [wife] means that a woman [man] is . . ." A parallel stem phrase was used to assess the caregiver identity standard.

Unlike identity standards, which assess personal norms or expectations for spousal and caregiver roles, self-reported behaviors indicate participants' perceptions of their behaviors in both roles. Participants were asked to think

Table 2. Spousal Identity Standard Items and Frequencies and Means of Discrepancy Scores

To Be a Good Wife [Husband] For Her [His] Husband [Wife] Means That a Woman [Man] Is ...	Exceeded Standards (%)	No Discrepancy (%)	Unmet Standards (%)	Mean Discrepancy (SD)
Shares in the decision making	22.2	50.9	26.9	-0.27 (2.11)
Completely trustworthy	13.1	64.9	22.0	-0.33 (2.14)
Very open with her/his feelings	43.7	31.1	25.2	0.55 (2.11)
A good listener	32.6	33	34.4	-0.26 (2.46)
Easy to get along with	27.7	43.2	29.1	-0.26 (2.15)
Involved in her/his spouse's life	21.8	62.1	16.1	0.25 (2.21)
Affectionate	26.5	46.9	26.6	-0.31 (2.24)
Very supportive	12.0	60.6	27.4	-0.63 (2.21)
Enjoys her/his spouse's company	32.6	41.0	26.4	0.00 (2.38)
Loving	16.8	53.1	30.1	-0.68 (2.25)
Understanding	18.3	46.7	35.0	-0.43 (2.23)
Totally faithful	12.0	77.1	10.9	0.01 (1.79)
Comforting	15.4	56.2	28.4	-0.66 (2.25)
Shares special times and activities with her/his spouse	29.7	39.0	31.3	-0.06 (2.44)
Best friends with his/her spouse	23.9	55.7	20.4	0.01 (2.19)
Compassionate	15.7	50.2	34.1	-0.85 (2.27)

about the time they spent with their spouses or partners and the things they typically did with them on a day-to-day basis. The self-reported behaviors inventory included statements that were parallel to the items on the identity standard inventory but followed the stem phrase "When it comes to my husband [wife], I . . ." Respondents indicated their agreement with each item using a 6-point response set (1 = *strongly disagree*, 6 = *strongly agree*).

Most of the identity standard and self-reported behavior items were negatively skewed. Because multivariate normality is a basic assumption of data in SEM, the identity standard and self-reported behavior items were transformed to normalize their distributions prior to calculating role discrepancy scores. The items were reverse coded (in effect creating a positively skewed

Table 3. Caregiver Identity Standard Items and Frequencies and Means of Discrepancy Scores

For a Person to Be a Good Caregiver, It Is Important That She/He ...	Exceeded Standards (%)	No Discrepancy (%)	Unmet Standards (%)	Mean Discrepancy (SD)
Makes the person receiving care as comfortable as possible	13.5	68.4	18.1	-0.22 (2.10)
Is well informed about needed services and health care	27.6	35.0	37.4	-0.32 (2.42)
Is responsible	8.9	63.8	27.3	-0.77 (2.18)
Is gentle	17.5	53.1	29.4	-0.67 (2.16)
Helps lift the spirits of the person being cared for	34.9	25.4	39.7	-0.15 (2.40)
Gets the household chores done	23.6	52.4	24	-0.07 (1.82)
Is very watchful	16.3	58.5	25.2	-0.31 (2.17)
Is able to perform the necessary care tasks	15.3	49.8	34.9	-0.67 (2.17)
Takes his/her duties seriously	19.4	64.4	16.2	0.15 (2.23)
Provides the care-recipient with good food	14.6	68.7	16.7	-0.10 (2.03)
Has the right skills to care for the care-recipient	18.8	51.0	30.2	-0.46 (2.00)
Is attentive to the needs of the person he/she is caring for	13.6	58.8	27.6	-0.44 (2.17)
Is patient	38.8	18.3	42.9	0.18 (2.33)
Keeps the care-recipient properly groomed	19.9	62.2	17.9	-0.05 (2.04)
Knows all about the needs of the person being cared for	28.7	43.3	28	-0.27 (2.24)
Spends time doing "fun" activities with the person he/she is caring for	33.3	43.2	23.5	-0.07 (2.02)
Is well organized	33.6	41.4	25	0.12 (2.28)
Remains alert for danger signs	9.5	69.7	20.8	-0.46 (2.08)
Is very efficient	24.2	46.8	29	-0.31 (2.15)
Is nurturing	24.2	53.3	22.5	-0.22 (2.14)

distribution), subjected to a square root transformation to normalize the distribution, and finally reverse coded a second time so that higher numbers corresponded to stronger agreement with the identity standard and self-reported behavior items. The difference scores reflecting spousal and caregiver role discrepancies were computed using the transformed scores. Spousal role discrepancy was calculated as the mean of the differences between each spouse-related item on the identity standard inventory and the parallel item on the self-reported behavior inventory. Likewise, caregiver role discrepancy was calculated as the mean of the differences between each caregiver-related item on the identity standard inventory and the parallel item on the self-reported behavior inventory. Difference scores that are positive indicate that participants exceeded their identity standards, whereas those that are negative indicate that participants did not meet their identity standards. Difference scores that are zero indicate that participants met their identity standards. The distributions of the discrepancy items showing the proportion of participants who exceeded, did not meet, or experienced no discrepancy with their identity standards are displayed in Tables 2 and 3, along with the means for each item. The reliabilities of measures of spousal and caregiver role discrepancies were .82 and .78, respectively. This method for measuring discrepancy is identical to Higgins's (1987) measurement of self-discrepancy. It is preferred over asking participants to complete a single scale on which they estimate the discrepancy between their standards and actual behaviors, because such scales involve double-barreled questions (Edwards 2001). One criticism of difference scores is low reliability (Cronbach and Furby 1970). However, this is less likely to be an issue in this study because difference scores (1) were used to measure intraindividual differences instead of inter-individual differences (Rogosa and Willett, 1983) and (2) were analyzed as latent variables within SEM, which corrects for measurement error (McArdle and Nesselroade 1994).

Caregiver burden. Stress, relationship and objective burden were measured using Montgomery et al.'s (2000) burden measure. Respondents indicated if the level of each aspect of their life had changed because of caregiving using a response set ranging from 1 (*a lot less*) to 5 (*a lot more*). Stress burden measured the affect component of burden, such as anxiety and depression. Example stress items asked if caregiving had "made you nervous," "depressed you," and "made you anxious." Relationship burden captured the extent to which the care recipient's behavior was perceived by the caregiver to be manipulative or overly demanding. Example relationship burden items asked if there had been "increased attempts by your spouse/partner to manipulate you" and "increased unreasonable requests made by your spouse/partner" and

if caregiving responsibility had “made you feel taken advantage of by your spouse/partner.” Objective burden measured the extent to which care relationships imposed on observable aspects of a caregiver’s life, such as time for self and others. Example objective burden items asked if caregiving had “decreased time you have to yourself,” “given you little time for friends and relatives,” and “kept you from recreational activities.” The reliability of all forms of burden ranged from .83 to .89.

Analyses

Measurement model. SEM analyses, using LISREL 8.54 (du Toit and du Toit 2001), tested the predictions of the hypothesized model. The measurement properties of latent constructs were examined prior to testing whether the hypothesized model fit the data. The variances of all constructs were set to 1.0 to standardize the scale. The control variables (group, gender, and duration of caregiving) and caregiver assistance with ADLs were single indicator constructs. To locally identify each latent factor, the error variances of the single measured indicators were set to 0, leaving the factor loading to be estimated. All other constructs were composed of multiple indicators. Role discrepancy was made up of two indicators with equated factor loadings for model identification: spouse and caregiver role discrepancies. The indicator of spousal role discrepancy was made up of measured discrepancies between spousal identity standards and behaviors. Similarly, the indicator of caregiver role discrepancy was made up of discrepancies between caregiver identity standards and behaviors. Because no dimensions exist within problem behaviors and all three types of burden, their respective indicators included three random parcels with items corresponding to each measure. These parcels contained approximately equal common factor variance (Little et al. 2002).

All indicators loaded significantly on their respective latent factors (see Table 4). Communalities of indicators were acceptable, ranging from .58 to .82. Because all measures were sufficiently reliable, the unstandardized factor loadings were moderately high, ranging from .60 to .86. The sample size of 358 participants was adequate to provide good model fit given the indicators’ communality, the size of the factor loadings (Guadagnoli and Velicer 1988), the number of indicators per latent factor, and the number of established over newly developed measures in the model (Boomsma and Hoogland 2001; Jaccard and Wan 1996). All measured variables were standardized as z scores to impose a common metric on measurement coefficients prior to analyses.

Evaluating model fit. Maximum likelihood was used to estimate parameters, and model fit was evaluated by the following: χ^2 goodness-of-fit index, root

Table 4. Loadings and Communalities of Measured Indicators in Model

Variable	Unstandardized Factor Loading (SE)	Communality ^a
Problem behavior		
PB1	0.79 (0.05)	0.64
PB2	0.86 (0.05)	0.72
PB3	0.75 (0.05)	0.58
Role discrepancy		
Spouse	0.67 (0.04)	0.61
Caregiver	0.67 (0.04)	0.58
Stress burden		
Stress1	0.65 (0.04)	0.60
Stress2	0.75 (0.04)	0.78
Stress3	0.73 (0.04)	0.73
Relationship burden		
Relationship1	0.60 (0.04)	0.62
Relationship2	0.60 (0.04)	0.61
Relationship3	0.61 (0.04)	0.63
Objective burden		
Obj1	0.65 (0.04)	0.66
Obj2	0.67 (0.04)	0.71
Obj3	0.73 (0.04)	0.82

a. Communality = 1 – standardized residual variance. Standardized residual variances for each measured indicator were calculated by taking the mean of standardized residual variance estimates from all five imputed data sets in structural equation modeling analyses.

mean square error of approximation, Bentler-Bonett nonnormative fit index, and comparative fit index.

Results

Table 5 provides correlations and distributional statistics for the model's major variables.

Model Estimation

Table 6 presents nested model comparisons and indices of model fit. After testing the measurement and hypothesized structural models, the χ^2 difference test indicated a significant loss in fit between the two models. Next, the alternative hypothesized model was tested. Model fit was reevaluated. The χ^2 difference between the measurement and alternative models indicated no significant loss in fit. Figure 2 reports the results of the alternative hypothesized model.

Table 5. Descriptive Statistics of Major Study Variables and Their Intercorrelations

	1	2	3	4	5	6	7	8	9	10
1. Group	1.00									
2. Length of caregiving	-.09*	1.00								
3. Caregiver gender	.20*	-.04	1.00							
4. Assistance with ADLs	.02	.17*	.11*	1.00						
5. Spousal role discrepancy	.12*	-.10	-.17*	-.17*	1.00					
6. Caregiver role discrepancy	-.13*	-.01	-.14*	-.11	.57*	1.00				
7. Assistance with problem behaviors	-.03	.00	-.01	.02	.16*	.11	1.00			
8. Relationship burden	.24*	.07	-.09	.07	.22*	.19*	.42*	1.00		
9. Stress burden	.27*	.10	-.11*	.09	.18*	.13*	.35*	.69*	1.00	
10. Objective burden	.31*	.21*	.04	.27*	.10	.11	.29*	.53*	.61*	1.00
M	1.31	4.11	0.32	12.17	-0.26	-0.25	1.66	2.49	3.33	3.79
SD	0.46	0.98	0.47	14.36	1.15	0.95	0.45	1.03	1.04	0.98

*p < .05.

Table 6. Comparison of Nested Models

Model	m = 1			m = 2			m = 3			m = 4			m = 5		
	χ^2	RMSEA	NNFI/CFI												
1	209.76	0.05	.971/98	207.39	0.05	.971/98	215.27	0.06	.971/98	214.89	0.05	.971/98	203.36	0.05	.971/98
2	276.99	0.06	.961/97	277.92	0.06	.961/97	285.77	0.07	.961/97	287.87	0.07	.961/97	280.06	0.06	.961/97
3	211.2	0.05	.971/98	209.16	0.05	.971/98	217.02	0.05	.971/98	216.33	0.05	.971/98	205.55	0.05	.971/98

Note: χ^2 difference (model 2 – model 1) for m = 1 to m = 5: 67.23, 70.53, 70.5, 72.98, and 76.7; change in $df = 5$; $p < .005$; χ^2 difference (model 3 – model 1) for m = 1 to m = 5: 1.44, 1.77, 1.75, 1.44, and 2.19; change in $df = 2$; $p > .10$. Model 1 = measurement model; model 2 = hypothesized model; model 3 = alternative model. Degrees of freedom for the measurement, hypothesized, and alternative models were 104, 109, and 106, respectively. All p values for χ^2 for those models were less than .01. RMSEA = root mean square error of approximation; NNFI = nonnormative fit index; CFI = comparative fit index.

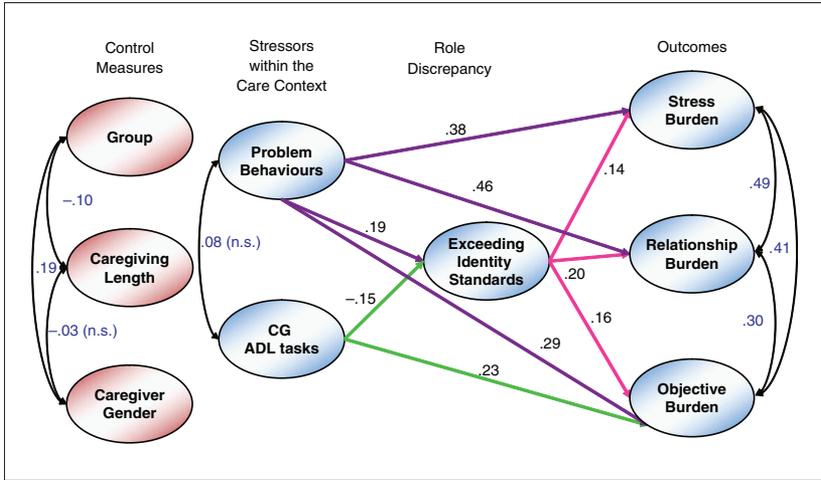


Figure 2. Final (alternative) model.

Note: All parameter estimates are standardized and significant unless otherwise stated. Controlling for variables in structural equation modeling requires direct paths (not shown) from control measures to each latent construct in the model. ADL = activity of daily living; CG = caregiver.

Nonsignificant correlations between latent constructs were retained, instead of constraining them to zero, to provide less biased estimates of predicted paths. The final model partially supported the relationships between stressors, role discrepancies, and burden conceptualized by caregiver identity theory. Role discrepancies mediated the relationship between the stressors and all three types of burden only. However, there were also direct relationships between the stressors and burden. Of the control variables, group had a significant effect on role discrepancy, stress, relationship, and objective burdens (standardized coefficient = .15, .20, .24, and .28, respectively, $p < .05$). Caregiver gender had a significant effect on assistance with ADLs, role discrepancy, and stress (standardized coefficient = .12, -.24, and -.11, respectively, $p < .05$). Length of caregiving was associated with increases in assistance with ADLs, stress, relationship, and objective burden (standardized coefficient = .18, .10, .10, and .21, respectively, $p < .05$). It is important to reiterate that the results that follow are the unique effects of stressors within the care context (problem behaviors and assisting with ADLs) and role discrepancy on the three forms of burden, after controlling for group, caregiver gender, and length of caregiving.

Role Discrepancies as Mediators Between Stressors and Burden

As expected, problem behaviors and assistance with ADLs were directly related to role discrepancy but in opposite directions (standardized coefficient = .19 and $-.15$, respectively, $p < .05$). Higher levels of problem behaviors were associated with more positive scores on role discrepancy, indicating that participants exceeded their identity standards. In contrast, higher levels of functional impairment were linked with more negative scores on role discrepancy, indicating unmet identity standards. As expected, role discrepancy predicted all three dimensions of burden. Specifically, caregivers who exceeded their identity standards experienced more stress, relationship, and objective burden (see Figure 2).

Direct Relationships Between Stressors and Burden

Although role discrepancy mediated the relationships between problem behaviors and burden, problem behaviors were also strong direct predictors of all three types of burden. Specifically, higher levels of problem behaviors were related to higher levels of stress, relationship, and objective burden (see Figure 2). As predicted in both the hypothesized and alternative models, assistance with ADLs was related with higher levels of objective burden. There were no direct relationships with assistance with ADLs and stress and relationship burden.

Gender Differences: Multiple-Group SEM

Although testing for gender differences was not the primary goal of this study, additional analyses on gender differences were included to shed light on the debate about differences in caregiving experiences of men and women. To test for gender differences, it was necessary to first test for measurement equivalence across men and women (see Table 7). Configural invariance tested whether the patterns of free and fixed parameter estimates were the same across the two groups. Loadings invariance tested whether the regressions of the indicators on the latent variables were the same across the two groups. Because the χ^2 difference between these two steps was nonsignificant, the model in which the loadings were constrained to be equal fit the data as well as a model in which factor loadings were freely estimated within groups. Next, we tested for strong factorial invariance, whereby we constrained the indicator means to be equal across groups (intercepts invariance). Because there

Table 7. Comparison of Nested Models for Two-Group Structural Equation Model Testing Gender Differences

Model	χ^2 (<i>p</i>)	<i>df</i>	RMSEA (90% CI)	NNFI	CFI	χ^2 Difference Test
1. Configural invariance	317.90 (<.001)	172	.063 (.05 to .068)	.96	.97	
2. Loadings invariance	320.37 (<.001)	180	.060 (.047 to .072)	.97	.97	M2 – M1 = 3.37, $\Delta df = 8, p > .10$
3. Intercepts invariance	332.34 (<.001)	189	.059 (.047 to .071)	.97	.97	M3 – M2 = 11.97, $\Delta df = 9, p > .10$
4. Homogeneity of variance-covariance matrix	354.14 (<.001)	208	.059 (0.047 to 0.070)	.97	.97	M4 – M2 = 33.77, $\Delta df = 28, p > .10$
5. Equality of latent means	348.80 (<.001)	210	.054 (.042 to .066)	.96	.97	M5 – M3 = 16.46, $\Delta df = 21, p > .10$

Note: RMSEA = root mean square error of approximation; NNFI = nonnormative fit index; CFI = comparative fit index; M = model.

was no significant loss in fit between the intercepts invariance model and the loadings invariance model, there was strong factorial invariance. We then tested whether the variance-covariance matrix was different between men and women. This constituted an omnibus test of the homogeneity of the variance-covariance matrix. Because there was no significant loss in fit between this last model and the loadings invariance model, the data were collapsed across men and women. Finally, we checked if the latent means for men and women were the same. Again, the results showed that there was no significant loss in fit between model 5 and model 3. We tested model 5 against the intercept invariance model because the test of equal latent means can be done only after establishing strong factorial invariance. The results warranted the use of the complete data set (collapsed across gender) to test the structural model.

Discussion

The findings of this study provide some insight into the link between caregiver burden and the caregiver's changing identity in relation to the care recipient. In support of caregiver identity theory, our results suggest that discrepancies between self-appraisals and personal identity standards for both the spousal and caregiver roles mediate the relationship between stressors and the three types of burden. At the same time, the analyses also revealed direct effects between some of the stressors and all three forms of burden.

Stressors, Role Discrepancies, and Burden

The pathways by which caregivers' assistance with ADLs is linked to the three types of burden provide insights about the importance of personal norms as a factor that influences caregivers' experience of stress. First, as expected, assistance with ADLs was both directly and indirectly (via role discrepancy) associated with objective burden. This pattern suggests that the multitude of tasks that caregivers were performing not only imposed on other aspects of their daily lives but perhaps left them a bit overwhelmed, leading them to believe that they were not meeting their own personal standards for a "good" spouse or caregiver.

It is notable, however, that role discrepancy mediated the relationship between assistance with ADLs and objective burden, as well as with stress and relationship burdens. The fact that participants who spent more time assisting their spouses with ADLs were less likely to report exceeding standards for their relationship identity suggests that the performance of ADL tasks is linked to beliefs about the obligations of spouses to perform such care. This interpretation is further supported by the correlations observed between role discrepancy and the three measures of burden that indicate that exceeding identity standards leads to greater burden. Together these two patterns suggest that assistance with ADLs is not inherently distressing. In fact, there are no direct relationships between assistance with ADLs and stress and relationship burden. The findings also provide some support for the role of psychosocial processes as mediators between stressors and burden. It appears that the performance of ADLs is stressful only when the assistance is viewed as "going beyond the call of duty." Participants who spend many hours providing assistance with ADLs are less likely to exceed their identity standards, because they have incorporated the meaning of their tasks into their identity standards. This notion is supported by an extensive literature that notes that spouses, compared with other caregivers, tend to be more committed to providing all forms of care themselves (Marks et al. 2002), provide more hours of care, and assume responsibility for more intense care tasks. By providing such intensity of care, experienced spouse caregivers have interpreted their tasks as consistent with their relationship identity. It is important to note that the caregivers in this study had been providing assistance for a long time (77% of spouses in our sample had been caregivers for over two years) and therefore are more likely to incorporate their tasks into their relationship identity.

The relationships observed between problem behaviors and the three types of burden are consistent with those of numerous studies that reported strong

associations between problem behaviors and stress (Pinquart and Sorensen 2003; Savundranayagam et al. 2005). Similar to caregiver assistance with ADLs, dealing with problem behaviors directly predicted objective burden. Problem behaviors require immediate attention, especially with more severe behaviors such as agitation. Not only do these behaviors interfere with other activities, responsibilities, and relationships of the caregiver, they may prevent caregivers from using services such as respite out of fear that others cannot handle the problematic behaviors, often leaving them isolated (Kosloski, Montgomery, and Youngbauer 2001).

Role discrepancy also mediated the relationship between problem behaviors and the three types of burden. However, in contrast to the pattern observed for assistance with ADLs, the more problem behaviors caregivers dealt with, the more likely they reported exceeding their standards for their relationship identity. A possible interpretation of this finding is that problem behaviors may highlight a lack of reciprocity in the relationship that in turn leads to greater burden. Problem behaviors can be characterized as a relational stressor, one that undermines the human connection and interaction that is necessary to maintain one's identity as a spouse and one that threatens to create greater emotional distance within the familial relationship. Caregivers in our study attempted to maintain their relationship identities by overextending themselves, and it is such behavior that results in caregiver burden. Consequently, caregivers were more likely to experience the three types of burden when they were dealing with problem behaviors, partly because dealing with them was difficult and partly because they felt that dealing with them forced them to exceed their identity standards and undermined the reciprocity of their spousal relationships.

Unlike assistance with ADLs, problem behaviors directly predicted stress and relationship burden. Problem behaviors may be difficult because of their unpredictability (McCarty et al. 2000) and varied manifestations (e.g., aggression, wandering) mean that caregivers cannot anticipate their occurrence and/or ways to address them. Moreover, problem behaviors create situations in which caregivers must "go beyond the call of duty" to maintain their spousal relationship. In contrast, assistance with ADLs is expected to increase over time (Gaugler et al. 2000), and options to deal with them are a bit more obvious.

Considered together, the findings of this study suggest that problem behaviors and assistance with ADLs differentially undermine the maintenance of spousal and caregiver roles (Montgomery and Kosloski forthcoming). The findings also help explain reported inconsistencies regarding stressors and caregiver burden. Specifically, they indicate that problem behaviors have

direct and indirect relationships with all forms of burden, but assistance with ADLs becomes distressing only when it highlights discrepancies between appraisal of actual behavior and identity standards.

Implications for Caregiver Support Services

The study findings may also provide directions for effectively targeting support services to caregivers. For example, caregivers in our study experienced burden due to exceeding their standards for their relationship identity. It appears that when caregivers perceive that they are going above and beyond the expectations of their relationship identities, they experience stress, relationship, and objective burden. Spouse caregivers may benefit from programs and services that can teach caregivers to find a balance between their self-expectations and their appraisals of their day-to-day interactions with their spouses. Some caregivers who feel that they are exceeding their self-expectations may benefit from sharing their caregiving responsibilities with others. For example, services providing personal care may allow caregivers to focus less on dependency and more on the spousal relationship. They may also help caregivers be more effective in the caregiver role as they become better informed about available services that meet their spouses' needs.

The results underscore the need to discern the types of burden a caregiver may experience and to consider both the direct and indirect predictors of burden. To address stress and relationship burden, social service agencies might consider helping caregivers more effectively deal with problem behaviors. Problem behaviors appear to be inherently stressful and also make caregivers feel manipulated by their spouses. However, such behaviors may result in stress and relationship burden because they call on caregivers to do much more than is expected of themselves. To address objective burden, there are three options that service agencies can offer to caregivers. First, they can help caregivers with tasks associated with ADLs. Second, as was the case for stress and relationship burden, they can teach caregivers effective ways to deal with problem behaviors. Finally, by receiving assistance with ADLs and problem behaviors, caregivers may be able to realign their self-expectations to fit their self-appraisals. When care managers are informed by caregiver identity theory, they can more effectively address the specific stressors that are most troubling for individual caregivers.

Limitations and Future Research

Although our findings provide initial evidence of role discrepancies within the caregiving context, the findings are limited by the study design and the

composition of the sample. Our data were cross-sectional and therefore limited our ability to demonstrate mediation. A longitudinal design with time lags in the measurement of stressors, role discrepancy, and burden would constitute an optimal test of mediation. Although participants evaluated their role behaviors against their personal standards, which reflect cultural and social norms, it is possible that certain sets of spousal and caregiver norms may be more or less salient to different segments of the caregiving population. Future research might be undertaken to determine whether the impact of identity standards on caregiver burden is influenced by gender or culture. We did not have sufficient variation in ethnicity to conduct any supplemental analyses. However, we conducted a two-group SEM analysis to determine if there were differences between men and women. The results revealed the equivalence of the model across gender (see Table 7). The impact of role discrepancies on burden should also be examined within the adult child and parent relationship. In our study, it appeared that exceeding identity standards was related to burden. There might be differences in the relationship between role discrepancy and burden for adult children, who typically provide less intense care tasks but deal with competing relationships from other roles compared to spouse caregivers (Marks et al. 2002; Seltzer and Li 2000). Finally, given that all three forms of burden were predicted by problem behaviors and by exceeding identity standards for spouse caregivers, future studies may be undertaken to explore factors related to the lack of reciprocity that underlies both of these predictors. There is some evidence that dementia-related communication problems predict problem behaviors (Savundranayagam et al. 2005). To obtain a better understanding of how caregivers adapt to changes in reciprocity, it will be important to examine caregiver responses to communication problems and consider their role in maintaining relationship identity.

Conclusion

In partial support of Montgomery and Kosloski's (forthcoming) caregiver identity theory, spousal and caregiver role discrepancies functioned as mediators between illness-related stressors and all three forms of burden. Although the results illustrated the psychosocial processes (i.e., role discrepancies) by which illness-related stressors are regarded as distressing, the findings also revealed direct links with all forms of burden. Understanding how stressors challenge salient roles and relate to different aspects of burden is critical when targeting appropriate support services or interventions. The data provide some insight into the common finding that the level and type of care tasks performed are often not directly correlated with the level of stress or burden observed. Instead, the findings suggest that the level of stress or burden that a caregiver

experiences because of care tasks is filtered by a caregiver's personal expectations regarding the performance of those care tasks. Consequently, caregiver interventions need not be limited to programs that relieve caregivers of care tasks. In many cases, interventions that focus on identifying and, perhaps, changing caregivers' expectations may be equally, or even more, effective. In times of scarce resources, such programs may also be less costly.

Declaration of Conflict of Interest

The authors had no conflicts of interest with respect to their authorship or the publication of this article.

Funding

The authors received the following financial support for their research and/or authorship of this article: grants to Marie Y. Savundranayagam from the Hartford Foundation's Geriatric Social Work Faculty Scholars Program and the Center on Age and Community at the University of Wisconsin–Milwaukee and grants to Rhonda J. V. Montgomery from the Administration on Aging and the Helen Bader Foundation.

References

- Alzheimer's Association. 1996. *Facts About Alzheimer's Disease*. Chicago: Alzheimer's Association.
- Aneshensel, C. S., L. I. Pearlin, J. T. Mullan, S. H. Zarit, and C. J. Whitlach. 1995. *Profiles in Caregiving: The Unexpected Career*. San Diego, CA: Academic Press.
- Baxter, L. A., D. O. Braithwaite, T. D. Golish, and L. N. Olson. 2002. "Contradictions of Interaction for Wives With Elderly Husbands With Adult Dementia." *Journal of Applied Communication Research* 30 (1): 1-26.
- Biegel, D. E., E. Sales, and R. Schulz, R. 1991. *Family Caregiving in Chronic Illness*. Newbury Park, CA: Sage.
- Blieszner, R. and P. A. Shifflett. 1990. "The Effects of Alzheimer's Disease on Close Relationships Between Patients and Caregivers." *Family Relations* 39:57-62.
- Boomsma, A. and J. J. Hoogland. 2001. "The Robustness of LISREL Modeling Revisited." Pp. 139-68 in *Structural Equation Models: Present and Future. A Festschrift in Honor of Karl Jöreskog*, edited by R. Cudeck, S. du Toit, and D. Sörbom. Chicago: Scientific Software International.
- Burke, P. J. 1991. "Identity Processes and Social Stress." *American Sociological Review* 56:836-49.
- Burke, P. J. 1996. "Social Identities and Psychosocial Stress." Pp. 141-74 in *Psychosocial Stress: Perspectives on Structure, Theory, Life-Course, and Methods*, edited by H. B. Kaplan. San Diego, CA: Academic Press.

- Canary, D. J. and L. Stafford. 1994. *Communication and Relational Maintenance*. San Diego, CA: Academic Press.
- Cronbach, L. J. and L. Furby. 1970. "How We Should Measure 'Change'—Or Should We?" *Psychological Bulletin* 74:68-80.
- du Toit, S.H.C. and M. du Toit. 2001. *Interactive LISREL: User's Guide*. Lincolnwood, IL: Scientific Software International.
- Edwards, J. R. 2001. "Ten Difference Score Myths." *Organizational Research Methods* 4 (3): 265-87.
- Gaugler, J. E., A. Davey, L. I. Pearlin, and S. H. Zarit. 2000. "Modeling Caregiving Adaptation Over Time: The Longitudinal Impact of Behavior Problems." *Psychology and Aging* 15 (3): 437-50.
- Guadagnoli, E. and W. F. Velicer. 1988. "Relation of Sample Size to the Stability of Component Patterns." *Psychological Bulletin* 103:265-75.
- Higgins, E. T. 1987. "Self-Discrepancy: A Theory Relating Self and Affect." *Psychological Review* 94:319-40.
- Jaccard, J. and C. K. Wan 1996. *LISREL Approaches to Interaction Effects in Multiple Regression*. Thousand Oaks, CA: Sage.
- Kosloski, K. D., R.J.V. Montgomery, and J. Youngbauer. 2001. "Utilization of Respite Services: A Comparison of Users, Seekers, and Nonseekers." *Journal of Applied Gerontology* 20 (1): 111-32.
- Little, T. D., W. A. Cunningham, G. Shahar, and K. F. Widaman. 2002. "To Parcel or Not to Parcel: Exploring the Question, Weighing the Merits." *Structural Equation Modeling* 9 (2): 151-73.
- Marks, N. F., J. D. Lambert, and H. J. Choi. 2002. "Transitions to Caregiving, Gender, and Psychological Well-Being: A Prospective US National Study." *Journal of Marriage and the Family* 64 (3): 657-67.
- McArdle, J. J. and J. R. Nesselroade. 1994. "Structuring Data to Study Development and Change." Pp. 223-67 in *Life-Span Developmental Psychology: Methodological Innovations*, edited by S. H. Cohen and H. W. Reese. Hillsdale, NJ: Lawrence Erlbaum.
- McCarty, H. J., D. L. Roth, K. T. Goode, J. E. Owen, L. Harrell, K. Donovan, and W. E. Haley. 2000. "Longitudinal Course of Behavioral Problems During Alzheimer's Disease: Linear Versus Curvilinear Patterns of Decline." *Journal of Gerontology* 55A:M200-06.
- Meuser, T. M. and S. J. Marwit. 2001. "A Comprehensive, Stage-Sensitive Model of Grief in Dementia Caregiving." *The Gerontologist* 41 (5): 658-70.
- Miller, B. and J. E. Kaufman. 1996. "Beyond Gender Stereotypes: Spouse Caregivers of Persons With Dementia." *Journal of Aging Studies* 10:189-204.
- Montgomery, R.J.V., E. F. Borgatta, and M. L. Borgatta. 2000. "Societal and Family Change in the Burden of Care." Pp. 27-54 in *Who Should Care for the Elderly? An*

- East-West Value Divide*, edited by W. T. Liu and H. Kendig. Singapore: Singapore University Press.
- Montgomery, R.J.V. and K. D. Kosloski. 2000. "Family Caregiving: Change, Continuity, and Diversity." Pp. 143-71 in *Interventions in Dementia Care: Toward Improving Quality of Life*, edited by M. P. Lawton and R. L. Rubenstein. New York: Springer.
- Montgomery, R.J.V. and K. D. Kosloski. (forthcoming). "Pathways to a Caregiver Identity for Older Adults." In *Caregiving Across the Life Span*, edited by R. Tally and R. Montgomery. New York: Springer.
- Montgomery, R.J.V., K. D. Kosloski, and L. Holley. 2003. "Alzheimer's Disease Demonstration Grant to States Project." Annual report to the Administration on Aging. Milwaukee: University of Wisconsin-Milwaukee.
- Pearlin, L. I., J. T. Mullan, S. J. Semple, and M. M. Skaff. 1990. "Caregiving and the Stress Process: An Overview of Concepts and Their Measures." *The Gerontologist* 30:583-94.
- Pinquart, M. and S. Sorensen. 2003. "Associations of Stressors and Uplifts of Caregiving With Caregiver Burden and Depressive Mood: A Meta-Analysis." *Journal of Gerontology* 58 (B): P112-28.
- Robinson, L. C. and P. W. Blanton. 1993. "Marital Strengths in Enduring Marriages." *Family Relations* 42:38-45.
- Rogosa, D. R. and J. B. Willett. 1983. "Demonstrating the Reliability of the Difference Score in the Measurement of Change." *Journal of Educational Measurement* 20 (4): 335-43.
- Rubin, D. B. 1987. *Multiple Imputation for Nonresponse in Surveys*. New York: John Wiley.
- Savundranayagam, M. Y., M. L. Hummert, and R.J.V. Montgomery. 2005. "Investigating the Effects of Communication Problems on Caregiver Burden." *Journal of Gerontology* 60B (1): S48-55.
- Seltzer, M. M. and L. W. Li. 1996. "The Transitions of Caregiving: Subjective and Objective Definitions." *The Gerontologist* 36 (5): 614-26.
- Seltzer, M. M. and L. W. Li. 2000. "The Dynamics of Caregiving: Transitions During a Three-Year Prospective Study." *The Gerontologist* 40 (2): 165-78.
- Stone, R., G. Cafferata, and J. Sangl. 1987. "Caregivers of the Frail Elderly: A National Profile." *The Gerontologist* 27:616-26.
- Vitaliano, P. P., H. M. Young, and J. Russo. 1991. "Burden: A Review of Measures Used Among Caregivers of Individuals With Dementia." *The Gerontologist* 31 (1): 67-75.
- Weigel, D. J. and D. S. Ballard-Reisch. 1999. "How Couples Maintain Marriages: A Closer Look at Self and Spouse Influences Upon the Use of Maintenance Behaviors in Marriages." *Family Relations* 48 (3): 263-69.
- Young, R. F. and E. Kahana. 1989. "Specifying Caregiver Outcomes: Gender and Relationship Aspects of Caregiving Strain." *The Gerontologist* 29:660-66.

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