

A Dimensional Analysis of Caregiver Burden Among Spouses and Adult Children

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Purpose of the study: Caregiver burden is a multidimensional construct, addressing tension and anxiety (stress burden), changes in dyadic relationships (relationship burden), and time infringements (objective burden) resulting from caregiving. The study aims were to assess (a) whether the dimensions of burden were the same for caregiving spouses and adult children, (b) the role of assisting with problem behaviors (PBs) and activities of daily living (ADLs) on each dimension of burden, and (c) the role of each dimension of burden on self-rated health and intention to institutionalize the care receiver. **Design and Methods:** This study included 280 spouse/partner and 243 adult child caregivers of persons with chronic illnesses. **Results:** Analysis using 2-group structural equation modeling showed that the factor structure of burden was equivalent for spouses and adult children. For both groups, assisting with ADLs was directly related with objective burden, whereas PBs were directly related to all dimensions of burden. For both groups, stress burden was the only predictor of self-rated health, whereas PBs were significantly linked with intention to institutionalize. However, stress burden among spouses and relationship burden among adult children were significantly linked with intention to institutionalize. **Implications:** We discuss the research and practice implications of the differing needs of spouses and adult children.

Key Words: Stress burden, Relationship burden, Objective burden, Informal caregiving

Caregiver burden has been a major focus of research for more than 25 years. It has been studied as both a predictor and an outcome variable. The burden of caregiving responsibilities has been shown to influence the quality of the relationship between caregivers and care receivers, caregiver health, and the decision to institutionalize the care receiver (Pinquart & Sorensen, 2007; Schulz & Martire, 2004).

Although it is frequently measured as a unidimensional construct, there is a growing consensus that burden is multidimensional (Ankri, Andrieu, Beaufile, Grand, & Henrard, 2005; Bédard et al., 2001; Hebert, Bravo, & Preville, 2000; Knight, Fox, & Chou, 2000; O'Rourke & Tuokko, 2003a, 2003b). The purpose of this study was to assess the dimensionality of a caregiver burden measure developed by Montgomery and colleagues (Montgomery, Borgatta, & Borgatta, 2000; Montgomery, Gonyea, & Hooymann, 1985; Montgomery, Stull, & Borgatta, 1985). The development of this instrument was based on the belief that caregiving activities can affect several different domains of a caregiver's life. First, given that the caregiving relationship emerges out of a pre-existing interpersonal relationship between the caregiver and care receiver, caregiving responsibilities have the potential to negatively affect that dyadic relationship (relationship burden). Second, as the caregiver engages in instrumental activities to provide support for the care receiver, these

activities can interfere with other aspects of his or her life, such as relationships with other family members, work responsibilities, or personal privacy (objective burden). Third, the caregiving experience can lead to emotional stress or anxiety (stress burden). It is not uncommon for a caregiver to experience burden in all these domains nor is it uncommon for caregivers to experience burden in at least one or two of these domains.

The multidimensionality of burden means that any global measure of burden may not adequately reflect the individual domains of burden, and therefore, such measures may fail to reveal significant levels of distress for many caregivers. Therefore, in addition to demonstrating that a burden measure is multidimensional, it is also necessary to show that the individual domains matter uniquely. That is, that the domains provide information that is not reflected in the global composite score.

One way to establish the dimensionality of burden is to relate the differing dimensions to relevant external criteria (Carmines & Zeller, 1979). In other words, if the different dimensions of burden actually represent different aspects of the caregiving experience, then their relationships to an external variable should be different as well. For example, providing assistance with tasks involving activities of daily living (ADLs) has been linked to greater objective burden, whereas providing assistance with problem behaviors (PBs) was linked with all three dimensions of burden in a sample of caregiving spouses (Savundranayagam & Montgomery, 2010).

In a similar fashion, the dimensions of burden must also differentially affect key outcomes. Two important and frequently examined outcomes are the caregiver's health and the caregiver's intention to institutionalize the care receiver. Existing research suggests that the physical health of the caregiver is compromised when caregivers were psychologically distressed (Pinquart & Sorensen, 2007; Schulz & Beach, 1999; Schulz & Martire, 2004; Schulz, O'Brien, Bookwala, & Fleissner, 1995). Caregiver stress was also a predictor of nursing home placement in longitudinal studies (Gaugler, Kane, Kane, Clay, & Newcomer, 2003; Gaugler, Kane, Kane, & Newcomer, 2005; Gaugler et al., 2000; Spillman & Long, 2009) as were PBs (Asada, Kinoshita, & Kakuma, 2000; Gaugler et al., 2003; Zhu et al., 2006). Knowledge of the relationships between the different dimensions of burden and important predictor and outcome variables is not only critical to establishing the dimensionality of

burden but could also be invaluable to case managers responsible for linking caregivers with supportive services. The identification of particular avenues of distress can help care managers strategically select and target available resources to alleviate the specific types of burden experienced by a caregiver.

In addition to capturing multiple dimensions of burden, however, an adequate measure must also reflect the same underlying phenomenon in different populations in the same way. For instance, because spouses and adult children have been shown to comprise distinct populations of caregivers, it is important to know whether the relationships between the predictors and consequences of burden are invariant across these populations. Given the differing life circumstances that characterize these caregivers, the generalizability of findings cannot simply be assumed.

Findings are reported here from a study undertaken to examine the measurement properties and utility of the Montgomery–Borgatta Burden Measure (Montgomery, Gonyea, et al., 1985; Montgomery, Stull, & Borgatta, 1985; Montgomery et al., 2000), which is being widely adopted for use in both research and practice settings (Farley, Demers, & Swaine, 2008; Savundranayagam, Hummert, & Montgomery, 2005; Savundranayagam, Montgomery, Kosloski, & Little, 2010; Stone & Clements, 2009). The burden measure is currently being used as part of caregiver assessment protocols statewide in Washington and Georgia and is being used in demonstration projects in Minnesota and Michigan. Importantly, it assesses the caregiver's perception that their caregiving responsibilities are interfering with their daily life and other responsibilities (objective burden), strain in the relationship between caregiver and care receiver (demand or relationship burden), and stress and anxiety (stress burden).

Our first aim was to assess whether the factor structure of the dimensions of burden and the relationship between variables were equivalent across samples of spouses and adult children, the two groups that comprise the majority of the population of caregivers. The second aim was to examine the relationship between the three dimensions of burden and two important predictor variables—assisting with ADLs and dealing with PBs. The final objective was to investigate how each of dimensions of burden is related to two important caregiver outcomes—self-rated health and the intention to institutionalize the care receiver.

Methods

Participants and Procedure

Participants were 280 spouse/partner and 243 adult child caregivers of persons with chronic illnesses. All participants belong to the League of Experienced Family Caregivers (LEFC), a registry of family caregivers who volunteered to help others by sharing their caregiving experiences. The LEFC, which is housed in the Office of Applied Gerontology at University of Wisconsin–Milwaukee’s Helen Bader School of Social Welfare, was created as part of a larger research effort aimed at developing and testing measures of caregiving experiences. A two-step recruitment process was used. Initially, key staff from more than 100 provider organizations in six states including Area Agencies on Aging, home health agencies, and chapters of the Alzheimer’s Association were contacted and informed about the study effort. These staff members were asked to share information and distribute brochures to family caregivers with whom they work. Information and brochures were also distributed at caregiver conferences and support groups. Caregivers interested in participating provided contact information to the study team by returning a postcard that was attached to the brochure. Staff from the study team then contacted caregivers to provide detailed information about the registry and gained informed consent. Caregivers chose to complete one or more questionnaires online, via mail, or by telephone. Four percent of participants responded via phone, whereas 60% responded via mail and 36% responded via a web-based questionnaire. Questions were included about demographic characteristics of the caregivers and their family members with chronic illnesses, the care receiver’s functional status, and PBs. Family members were also asked about their own health, the level and types of care they provided, their level of burden, and their intention to institutionalize their family member in a nursing home.

The characteristics of the study samples are shown in Table 1. The average age of caregivers was 63 years for spouses and 52 for adult children. Most caregivers were female who comprised 76% of spouses and 88% of adult children. As would be expected, most spouse caregivers were retired, whereas most adult child caregivers were working full time. Most participants in this sample were experienced caregivers, with more than 30% having provided care for 2–5 years in both groups. However, more than half of spouse caregivers had

Table 1. Description of the sample

	Spouses (N = 280)	Adult children (N = 243)
Caregiver average age and range (years)	63 (24–91)	52 (23–71)
Care recipient average age and range (years)	67 (21–100)	81 (34–101)
Caregiver gender (%)		
Male	23.6	12.1
Female	76.4	87.9
Caregiver ethnicity (%)		
White	91.0	77.0
African American	4.0	8.0
Hispanic	3.0	5.0
Other	3.0	9.0
Caregiver’s level of education (%)		
Grades 0–8	0.4	0
Grades 9–11	3.9	0.8
High school graduate	13.6	11.6
Some college or associate/technical degree	33.9	31.0
Bachelor’s degree (BS, BA, etc.)	27.1	33.5
Graduate degree or above	21.1	23.1
Caregiver employment (%)		
Full time	16.5	39.6
Part time	14.9	15.4
Retired but working part time	9.1	4.4
Fully retired	38.0	11.0
Homemaker	12.4	9.9
Unemployed	2.5	12.1
Other	6.6	7.7
Caregiving length (%)		
Less than 6 months	1.1	5.4
6–12 months	6.5	11.3
13–24 months	9.0	14.6
25 months to less than 5 years	30.7	32.6
5 years or more	52.7	36.0
Assistance with activities of daily living (mean, SD)	13.74 (16.53)	8.17 (13.20)
Care receiver’s problem behaviors (mean, SD)	.75 (.49)	.73 (.52)
Caregiver burden (mean, SD)		
Stress	3.84 (.81)	3.69 (.92)
Relationship	3.05 (.87)	3.07 (.91)
Objective	4.37 (.66)	4.18 (.89)
Self-rated health (mean, SD)		
Perceived health	3.69 (.80)	3.72 (.90)
Health compared with others	3.19 (.96)	3.07 (1.12)
Satisfaction with health	2.79 (.72)	2.63 (.87)
Intention to institutionalize (mean, SD)	1.55 (.81)	1.80 (.93)

provided care for 5 or more years compared with 36% of adult children.

The average age was 67 and 81 years for spouse and parent care receivers, respectively. Both spouse and adult child caregiver self-report assessments

indicated that approximately 80% of care receivers had cognitive or memory problems, with approximately 40% being diagnosed with probable Alzheimer's disease/dementia.

Measures

Assistance With ADLs.—This construct was measured by asking participants to estimate the number of hours per week that they spent assisting their family members with ADLs, such as bathing, feeding, dressing, and toileting.

Problem Behaviors.—PB was measured with a 15-item inventory that included 14 items developed by Pearlin and colleagues (1990) and a question regarding wandering, which is a significant problem among persons with Alzheimer's disease. Caregivers rated how frequently they dealt with each of the behaviors using the response categories: 0 days, 1–2 days, 3–4 days, and 5/more days. Examples of items include the number of days the caregiver had to deal with restlessness, suspiciousness, and irritability on the part of the care receiver. Cronbach's alpha for this measure was .80 for spouses and .84 for adult children in the present study.

Caregiver Burden.—Stress, relationship, and objective burden were measured using the **Montgomery and colleagues (2000)** burden measure (see Appendix). Respondents indicated the extent to which various aspects of their lives had changed due to caregiving. Caregivers responded to the question "As a result of assisting the care receiver, have the following aspects of your life changed?" This was followed by the stem: "Have your caregiving responsibilities . . .". Response options were on a five-point Likert scale with 1 representing "not at all" and 5 representing "a great deal".

"Stress burden" includes five items that measure the perceived effects of caregiving on affect, such as anxiety and depression. Caregivers were asked whether their caregiving responsibilities "made you nervous," "depressed you," "caused you to worry," "created a feeling of hopelessness," and "made you anxious." Cronbach's alpha for stress burden was .86 for spouses and .90 for adult children.

"Relationship burden" includes five items that capture the extent to which the care recipient's behavior is perceived by the caregiver to be manipulative or overly demanding. Caregivers were asked whether their caregiving responsibilities "increased

attempts by your relative to manipulate you," "increased unreasonable requests made by your relative," "made you feel taken advantage of by your relative," "caused you to feel that your relative makes demands over and above what he/she needs," and "caused conflicts with your relative." Cronbach's alpha for relationship burden was .87 for spouses and .89 for adult children.

"Objective burden" includes six items that measure the extent to which care relationships impose on observable aspects of a caregiver's life, such as time for self and others. The objective burden items ask if caregiving responsibilities have "decreased time you have to yourself," "given you little time for friends and relatives," "caused your social life to suffer," "changed your routine," "left you with almost no time to relax," and "kept you from recreational activities." Cronbach's alpha for objective burden was .85 for spouses and .93 for adult children.

Self-rated Health.—Self-rated health was measured using three items that asked participants to rate their (a) overall health at the present time on a 5-point Likert scale with 1 representing "very poor" and 5 representing "very good," (b) health compared with other people of the same age and sex on a 5-point Likert scale with 1 representing "a lot worse" and 5 representing "much better," and (c) satisfaction with their health on a 4-point Likert scale with 1 representing "not satisfied at all" and 4 representing "completely satisfied" (DeSalvo, Bloser, Reynolds, Jiang, & Muntner, 2006; Idler & Benyamini, 1997). Cronbach's alpha for self-rated health was .86 for spouses and .89 for adult children.

Intention to Institutionalize.—Intention to institutionalize was measured using a single item that asked participants the likelihood of placing their relative in a different type of care setting, such as a nursing home, given the relative's current condition. The question offered four options ranging from "definitely not" to "definite would" place in a different type of care setting.

Analyses Plan

Two-Group Structural Equation Modeling.—Measurement model. Prior to testing whether the hypothesized structural models fit the data, the measurement properties of the latent variables

were examined for each group separately. The latent constructs for assisting with ADLs and intention to institutionalize were composed of single indicators. All other constructs were composed of multiple indicators using items listed in the measures section, with the exception of problem behavior. The indicators for problem behavior, a latent construct, included three random parcels with items corresponding to each measure. Parceling is appropriate when the measure is unidimensional as in the case of problem behavior (Little, Cunningham, Shahar, & Widaman, 2002). Each parcel was created using the mean of randomly chosen items from the measure of problem behavior. These parcels contain approximately equal common factor variance (Little et al., 2002). The scale was set using the effects-coded method, where the indicator loadings average 1.0 (Little, Slegers, & Card, 2006). Prior to analyses, all measured variables were converted to percent of maximum scores, where each indicator was divided by the scale maximum. This type of scoring has a meaningful interpretation in that the mean of the construct is the mean percent of the maximum value.

Testing for invariance. After testing the fit of the measurement models for spouses and adult children separately, the two samples were combined to test for configural and metric invariance (Meredith, 1993). Confirmation of configural invariance would indicate that the pattern of free and fixed parameter estimates was the same across the two groups. A determination of metric invariance would indicate that the factor loadings and intercepts of the indicators on the latent variables were the same across the two groups. Obtaining invariance of indicator intercepts indicates that the factor structure of all latent constructs is equivalent for spouses and adult children and that any group differences should be found at the latent level.

Nested models. Nested models were created by placing constraints on previous models using a model-trimming approach, which begins with a just-identified model with equal numbers of known variances/covariances relative to unknown parameters (Kline, 1998). Based on modification indices, paths were removed from the hypothesized model until there was a significant chi-square difference signifying that the more parsimonious model provided the best fit to the data.

Evaluating model fit. Parameters were estimated using maximum likelihood because it yields optimal parameter estimates with continuous multivariate normally distributed variables (Jöreskog & Sörbom, 1993). Model fit was evaluated by: chi-square goodness-of-fit index, Tucker–Lewis Index, root mean square error of approximation (RMSEA), and comparative fit index (CFI).

Results

Measurement Model

The first study objective was to assess whether the latent constructs for burden were the same across spouses and adult children. To meet this objective, we examined the measurement model using a two-group mean and covariance structures model. The modification indices in the initial configural model suggested that one set of correlated errors be added for items belonging to stress burden: between “made you nervous” and “made you anxious.” Two sets of correlated errors were also added for items belonging to objective burden. These were added for the two items “kept you from recreational activities” and “caused your social life to suffer” and the two items “decreased time you have to your self” and “changed your routine.” These correlated errors seemed reasonable because each pair belonged to the same type of burden. As reported in Table 2, models (2 and 3) that were used to test for strong metric invariance (i.e., the loadings and intercepts were constrained to be invariant across groups) showed no significant changes in fit based on both the RMSEA model test (Little, 1997) and differences in CFI (Cheung & Rensvold, 2002). This indicated that the three dimensions of burden and all other constructs in the model have the same factor structure for spouses and adult children. Moreover, it allows for the test of group differences in the relationships identified by the hypothesized structural model (Figure 1). Table 3 presents the loading, intercept, residual, and squared multiple correlation values for each indicator as well as the variance for each latent construct in the strong metric invariant model.

We also tested for differences in the variances and covariances of the latent constructs between for the samples for spouses and adult children and determined that there were significant group differences. Analyses for the two groups, therefore, were conducted separately.

Table 2. Comparison of nested models for two-group structural equation modeling testing the hypothesized model

Model	χ^2	df	p	RMSEA (90% CI)	TLI	CFI	$\Delta\chi^2$	Δdf	p	Constraint tenable
Configural invariance	746.58	460	<.001	0.0449 (0.0382–0.0515)	0.979	0.983				
Loadings invariance ^a	764.70	477	<.001	0.0441 (0.0374–0.0506)	0.98	0.983				Yes
Intercepts invariance ^a	810.20	494	<.001	0.0451 (0.0386–0.0514)	0.979	0.981				Yes
Invariance of variances/ covariances ^b	823.44	503	<.001	0.0461 (0.0398–0.0523)	0.979	0.981	58.75	26	<.005	No
Hypothesized model ^b	826.51	504	<.001	0.0451 (0.0386–0.0513)	0.979	0.981	16.31	10	>.05	Yes
Final model ^b	829.51	510	<.001	0.0447 (0.0382–0.0509)	0.979	0.981	19.31	16	>.10	Yes

Notes: CFI = comparative fit index; CI = confidence interval; RMSEA = root mean square error of approximation; TLI = Tucker–Lewis Index.

^aEvaluated with RMSEA model test.

^bEvaluated with the χ^2 difference test.

Structural Model: Predictors and Outcomes of Burden

The hypothesized structural model was tested to address Objectives 2 and 3 of our study, which relate to predictors and outcomes of caregiver burden. The chi-square difference between the model with strong metric invariance and the hypothesized model indicated no significant loss in fit. Non significant regression paths were removed one at a time (beginning with the least significant path) to develop a more parsimonious final model. Model fit was reevaluated, and the chi-square difference between the hypothesized and final model indicated no significant loss in fit. Figures 2 and 3 report the results of the final model for spouses and adult children, respectively.

Associations Between Predictors Variables and Burden.—As hypothesized, assistance with ADLs

was significant associated with objective burden, whereas problem behavior was significant associated with of all three dimensions of burden. This pattern was the same for spouses and adult children.

Correlates of Self-rated Health and Intention to Institutionalize.—For both groups, stress burden was the only construct that was significantly associated with self-rated health, and problem behaviors were significantly linked with intention to institutionalize. There were, however, notable group differences in the dimensions of burden that were significantly linked with intention to institutionalize. Stress burden was a significant predictor variable among spouses, whereas relationship burden was a significant predictor variable only among adult children. In this sample, objective burden was not significantly linked with self-rated health or intention to institutionalize.

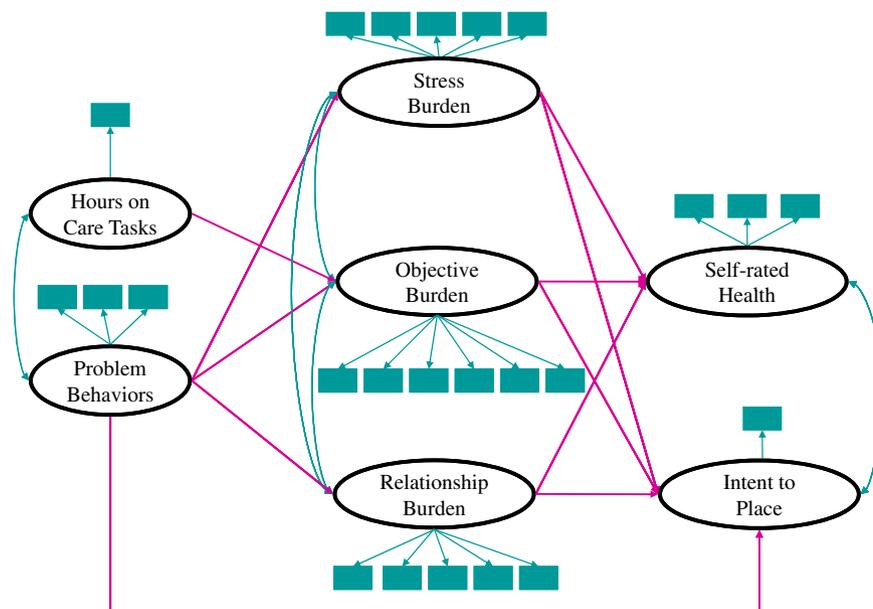


Figure 1. Hypothesized two-group structural equation model.

Table 3. Loading and intercept values, residuals, and R^2 values for indicators in strong metric invariance model

Indicator	Equated estimates		Standardized loading ^a	Spouses		Adult children	
	Loading (SE)	Intercept (SE)		θ	R^2	θ	R^2
PB							
PBa	0.98 (0.03)	-0.02 (0.01)	0.82	0.35	0.65	0.31	0.69
PBb	1.06 (0.03)	-0.03 (0.01)	0.84	0.27	0.73	0.31	0.68
PBc	0.97 (0.03)	0.04 (0.01)	0.77	0.43	0.57	0.38	0.62
Relationship burden							
Increased attempts to manipulate you?	1.00 (0.04)	-0.01 (0.02)	0.74	0.44	0.56	0.45	0.55
Increased number of unreasonable requests?	1.07 (0.03)	-0.07 (0.02)	0.82	0.36	0.64	0.28	0.72
Makes demands over and above what's needed?	1.13 (0.03)	-0.15 (0.02)	0.85	0.26	0.74	0.28	0.72
Felt taken advantage of by relative?	0.94 (0.03)	-0.06 (0.02)	0.77	0.42	0.58	0.41	0.59
Caused conflicts with your relative?	0.87 (0.04)	0.08 (0.03)	0.68	0.56	0.44	0.52	0.48
Objective burden							
Decreased time you have to yourself?	0.81 (0.03)	0.21 (0.03)	0.74	0.53	0.46	0.38	0.62
Kept you from recreational activities?	1.03 (0.03)	-0.03 (0.03)	0.79	0.45	0.55	0.31	0.69
Caused your social life to suffer?	1.18 (0.03)	-0.18 (0.03)	0.82	0.45	0.55	0.23	0.77
Changed your routine?	0.76 (0.03)	0.26 (0.03)	0.71	0.58	0.42	0.43	0.57
Given you little time for friends/relatives?	1.14 (0.04)	-0.16 (0.03)	0.81	0.48	0.52	0.22	0.78
Left you with almost no time to relax?	1.08 (0.04)	-0.12 (0.03)	0.74	0.58	0.42	0.33	0.67
Stress burden							
Created a feeling of hopelessness?	1.13 (0.04)	-0.12 (0.03)	0.81	0.38	0.62	0.31	0.69
Made you nervous?	0.92 (0.04)	0.02 (0.03)	0.67	0.62	0.38	0.46	0.54
Depressed you?	1.11 (0.03)	-0.09 (0.03)	0.84	0.31	0.69	0.27	0.73
Made you anxious?	1.02 (0.03)	-0.03 (0.02)	0.77	0.44	0.56	0.39	0.61
Caused you to worry?	0.83 (0.04)	0.22 (0.03)	0.72	0.53	0.47	0.44	0.56
Self-rated health							
Perceived health	0.90 (0.03)	0.13 (0.02)	0.86	0.31	0.69	0.21	0.79
Health compared with others	1.04 (0.03)	-0.08 (0.02)	0.81	0.37	0.63	0.32	0.68
Satisfaction with health	1.06 (0.03)	-0.04 (0.02)	0.86	0.27	0.73	0.24	0.76

Notes: PB = problem behavior.

^aCommon metric completely standardized solution.

Discussion

Over the past three decades, a vast literature has emerged documenting the distressing impact of caregiving and advocating for interventions to support family caregivers. The topic has persisted as a focus for researchers who have generated an impressive body of literature documenting the diversity and complexity of the caregiving experience (Dilworth-Anderson, Williams, & Gibson, 2002; Gaugler & Teaster, 2006; Montgomery, Rowe, & Kosloski, 2007). With the introduction of the National Family Caregiver Program in 2000 and more recent recognition by policy makers of the importance of family caregivers, providers of health and social services have been challenged to efficiently use scarce resources to support this diverse and growing population. To meet this challenge, service providers have sought valid measures

of the caregiving experience that can reliably be used to assess caregivers' situations and guide the allocation of support services. Hence, findings reported here are important for both researchers and service providers in that they demonstrate the importance of measuring specific dimensions of burden and they explain more fully the impact of the caregiving experience on family members.

Implications for Future Research

The demonstration of strong metric invariance across the samples of caregiving spouses and adult children in the measurement of stress burden, relationship burden, and objective burden and metric invariance for the other latent constructs in the model is important for several reasons. Not only do the findings support the contention that caregiver burden is multidimensional but also the

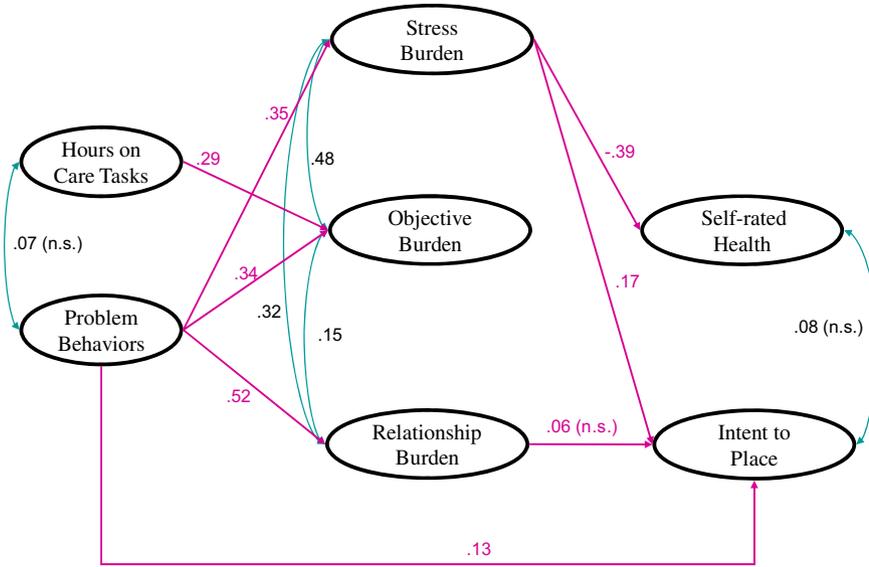


Figure 2. Final model for spouse caregivers. *Note:* All parameter estimates are standardized and significant, unless otherwise stated.

findings provide solid evidence of the invariance of the three dimensions of burden across spouses and adult children. These results affirm the appropriateness of using the burden measures to make comparisons between the two groups in terms of the level and types of burden experienced and the predictors and outcomes of the different types of burden. This information, along with knowledge that the measures have high internal reliability, indicates that the measures can confidently be used by researchers interested in differences of predictors and outcomes of caregiver burden across different segments of the population of caregivers.

Insights Regarding Differential Impacts of Caregiving Responsibilities

The findings regarding the similarities and differences of predictors and outcomes of the three dimensions of burden for spouses and adult children not only demonstrate the importance of measuring the multiple dimensions of burden but also offer insights regarding the sources of these burdens and the best approaches for alleviating them. With regard to the association of the predictor variables with the three dimensions of burden, as expected, there was a positive relationship between the time spent on assisting with ADLs and objective burden. Yet, there was no relationship between time spent on ADLs and

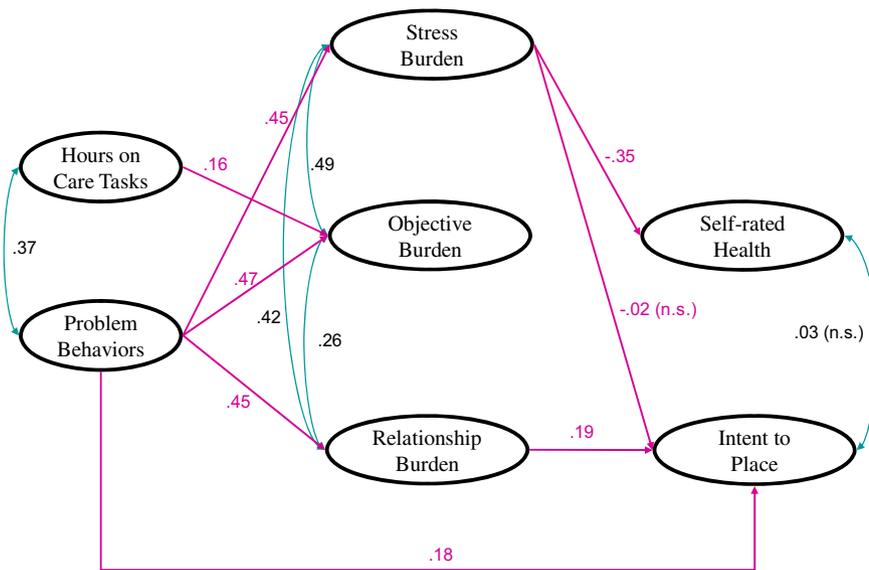


Figure 3. Final model for adult child caregivers. *Note:* All parameter estimates are standardized and significant, unless otherwise stated.

stress or relationship burden. This result supports the contention that it is not the workload per se that causes caregiver's distress but rather the interpretation that caregivers apply to the caregiving activities (Savundranayagam & Montgomery, 2010). In contrast, problem behaviors exerted a more pervasive effect, affecting all three dimensions of burden. Importantly, this pattern held for both spouses and adult children and is consistent with previous findings (Savundranayagam & Montgomery, 2010; Savundranayagam et al., 2005). This finding is also consistent with recent research suggesting that the embarrassment associated with problem behaviors exhibited by elders is a significant source of distress for caregivers (Montoro-Rodriguez, Kosloski, Kercher, & Montgomery, 2009).

The observed relationships between measures of the three types of burden and the two outcome variables highlight the validity of the burden measure. They are of interest because they provide evidence that the three dimensions of burden are conceptually independent constructs and they draw attention to the manner in which the three types of burden differentially affect caregivers. For both groups, stress burden was the only predictor of self-rated health despite the fact that many of the caregivers were engaged in difficult and demanding care tasks. This finding reinforces the observation that the workload per se is not the major predictor of caregiver outcomes.

The observed association between problem behaviors and intention to place is not surprising as it is fully consistent with findings from previous studies (Asada et al., 2000; Gaugler et al., 2005; Zhu et al., 2006). Of greater interest is the pattern of associations between the three measures of burden and intention to place. The lack of association between objective burden, which is more directly linked to care tasks, and intention to place provides yet another indicator that the performance of care tasks is not the most difficult aspect of the caregiving experience. The differential association of stress burden and relationship burden with the intention to place for the two groups of caregivers underscores the importance of the initial familial relationship between the caregiver and the care receiver as a factor that influences both the manner in which caregivers assume responsibility and the way in which they respond to the experience.

Practice Implications

Historically, measures of caregiver burden were developed as research tools to study the experience

of caregiving. More recently, various measures of caregiver burden have been adopted by organizations as tools to determine eligibility for services or to guide the allocation of services. The results of this study can help service providers use measures of caregiver burden more strategically. The findings clearly support the need to assess multiple dimensions of caregiver burden because the dimensions are differentially related to both key predictors and outcomes of caregiving. The results also underscore the importance of discerning the type or types of burden that a caregiver is experiencing when making decisions about the services or resources that should be recommended to alleviate burden. For example, given the absence of a relationship between assistance with ADLs and relationship burden or stress burden, it is unlikely that the provision of in-home health services will significantly reduce these burdens, although, it may lower the level of objective burden.

Similarly, the results of the study can inform efforts to improve self-rated health. For both spouses and adult children, stress burden was associated with lower levels of self-rated health. This finding corroborates previous studies showing that caregiving has detrimental effects on health (Pinquart & Sorensen, 2007; Schulz & Martire, 2004; Schulz et al., 1995). Care plans that teach stress management techniques may prove to be effective for both spouses and adult children, and the measurement of stress burden may afford a simple and direct way to assess the effectiveness of such interventions.

If the goal for intervention is to reduce the likelihood of nursing home placement, the findings would suggest both similar and different approaches to assist spouses and adult children. For both groups, problem behavior was a strong predictor of placement. As such, all caregivers are likely to benefit from programs that teach coping skills to manage problem behaviors. In contrast, group differences were observed in the relationships between the dimensions of burden and intention to institutionalize. Relationship burden was positively associated with intention to institutionalize for adult children, whereas stress burden was a significant predictor for spouses. Given the goal of many state and local caregiver support programs to reduce the likelihood of institutionalization, interventions aimed at adult children may prove to be most effective if they focused on reducing relationship burden. Importantly, reducing stress burden among spouses may have the dual benefit of affecting

self-rated health (as mentioned earlier) and reducing the likelihood of nursing home placement.

Limitations and Future Directions

Although the insights that these findings provide for strategically selecting services or resources to meet specific intervention goals are useful, the efficient use of scarce resources by providers also requires that services be introduced only if caregivers report high levels of the risk factors or predictors of our key outcomes (Zarit & Femia, 2008). Future research on what constitutes low, medium, and high levels of each dimension of burden would help service providers identify those caregivers who are at risk and appropriately target resources to meet their needs. The present study included an examination of risk factors of burden. Future research could extend our knowledge by examining the role of potential buffers or protective factors that may alleviate burden. This study only included a few variables (a) to illustrate the dimensionality of burden and (b) to highlight the utility of establishing measurement invariance across populations to identify important group differences in caregiving outcomes. Many other important variables can and should be evaluated in future research. Specifically, it is important to test relationships between the various dimensions of burden and more objective health outcomes among caregivers such as mortality and the development of illnesses among caregivers. Given the heterogeneity among caregivers, more studies are needed that examine the relationships between predictors and outcomes of the different dimensions of burden for segments of the population of caregivers that differ in socioeconomic status, ethnicity, and the care receiver's diagnosis. Finally, because the findings reported here are based on cross-sectional data, an important avenue for future research will be to replicate these hypothesized causal structures using longitudinal data.

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Appendix

As a result of assisting for your care receiver, how have the following aspects of your life changed? Have your caregiving responsibilities:

	Not at all	A little	Moderately	A lot	A great deal
Decreased time you have to yourself?	1	2	3	4	5
Increased attempts by your relative to manipulate you?	1	2	3	4	5
Created a feeling of hopelessness?	1	2	3	4	5
Kept you from recreational activities?	1	2	3	4	5
Increased the number of unreasonable requests made by your relative?	1	2	3	4	5
Made you nervous?	1	2	3	4	5
Caused your social life to suffer?	1	2	3	4	5
Caused you to feel that your relative makes demands over and above what he/she needs?	1	2	3	4	5
Depressed you?	1	2	3	4	5
Changed your routine?	1	2	3	4	5
Made you feel you were being taken advantage of by your relative?	1	2	3	4	5
Made you anxious?	1	2	3	4	5
Given you little time for friends and relatives?	1	2	3	4	5
Caused conflicts with your relative?	1	2	3	4	5
Caused you to worry?	1	2	3	4	5
Left you with almost no time to relax?	1	2	3	4	5