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Spouses, Adult Children, and Children-in-Law as Caregivers of Older Adults: A Meta-Analytic Comparison

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Abstract

The present meta-analysis integrates the results from 168 empirical studies on differences between caregiving spouses, adult children, and children-in-law. Spouses differ from children and children-in-law significantly with regard to sociodemographic variables; also, they provide more support but report fewer care recipient behavior problems. Spouse caregivers report more depression symptoms, greater financial and physical burden, and lower levels of psychological well-being. Higher levels of psychological distress among spouses are explained mostly—but not completely—by higher levels of care provision. Few differences emerge between children and children-in-law, but children-in-law perceive the relationship with the care recipient as less positive and they report fewer uplifts of caregiving.

Keywords

caregiver burden; caregiving; children; children-in-law; psychological health; spouses

In American families, spouses are often the first in line to assume caregiving responsibilities (Brody, 1981). If no spouse is available or able to care for the frail elderly, adult children often take on the caregiver role and sometimes they share care tasks with their own spouse. Based on data from the 1989 and 1999 National Long-term Care Survey and Informal Caregiver Survey, it is estimated that 41.3% of caregivers of frail older adults are adult children and 38.4% are spouses (Wolff & Kasper, 2006). In the Channeling Study of 1,940 frail older adults, 4.4% of their primary caregivers were daughters-in-law (Stephens & Christianson, 1986). Merrill (1993) reported that 12% of nonspousal caregivers in the National Long-term Care Survey were daughters-in-law.

The present meta-analysis integrates available research on differences in sociodemographic variables, resources, caregiving-related stressors, and psychological distress among caregiving spouses, adult children, and children-in-law. We ask two major research questions: In the first research question, we ask whether the three groups of caregivers differ

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in a variety of caregiving variables by estimating the size of differences between them. In the second research question, we focus on whether differences in psychological distress between these groups can be explained by differences in sociodemographic variables, resources, and caregiving stressors.

Differences in Psychological Distress Between Caregiving Spouses, Children, and Children-in-Law

Three theoretical considerations suggest that one might expect higher levels of distress among spouse caregivers than among children or children-in-law. First, caregiving spouses may be at higher risk for perceiving burden than other caregivers, because the spouse is usually the most important attachment figure for adults (Hazan & Shaver, 1987) and the impending loss of this person may be particularly stressful. Indeed, closer relationships are often associated with more stress for the caregiver (Cantor, 1983). Second, because spouses are most likely to live with the care recipient, they tend to provide more hours of support and find less respite from the caregiver role than adult children and children-in-law (e.g., Tennstedt, Crawford, & McKinlay, 1993). Third, spouse caregivers are older than adult children providing care and may suffer from more health problems, leading to greater perceived stress when providing long-term care.

A number of empirical studies have found higher levels of distress among spouse caregivers than among children or children-in-law but these results are inconsistent. For example, Hong and Kim (2008) found that spouses had higher total burden scores than adult children, although no differences emerged with regard to financial burden. However, no differences in strain between spouses and adult children were found in the 1999 Long-term Care Survey (Kang, 2006), and other studies observed even higher caregiver burden in adult children than in spouses (e.g., Young & Kahana, 1989). Results are also inconsistent regarding whether or not spouses experience more depression symptoms (e.g., Lawton, Rajagopal, Brody, & Kleban, 1992, vs. Yajima et al., 2007).

There are several factors that may reduce or reverse differences between psychological distress of spouses and children or children-in-law. First, many adult children or children-in-law have conflicting responsibilities, such as their careers, young children, or adolescents who require support and attention. Whereas some may experience more role conflicts, increasing their risk for role-overload (e.g., Barber & Pasley, 1994), others find that the other roles are complementary to their caregiving responsibilities (e.g., Scharlach, 1994). Second, for adult children, obligation and duty may be more prevalent motives for providing care than they are for spouses (e.g., Moen, Robison, & Dempster-McClean, 1995; Gräßel, 1997). The spouse's intrinsic motivation may reduce his or her psychological distress as compared to the more extrinsic motivation of many adult children. Third, gender differences in psychological distress may contribute to higher psychological distress in adult children. There are higher percentages of women among child and child-in-law than among spouse caregivers (e.g., Merrill, 1993). Because female caregivers are report more distress than male caregivers (Pinquart & Sörensen, 2006), caregiving may be associated with more distress among children and children in law providing care.

Differences Between Children and Children-in-Law

Theoretical considerations suggest lower distress among caregiving children-in-law: First, if less closeness is associated with lower caregiver burden (Cantor, 1983), children-in-law should be less distressed than spouses and children. Second, several studies have shown that children-in-law provide less help than adult children (e.g., Merrill, 1993), reducing the amount of distress they experience. However, there are also two arguments for higher distress in children-in-law. First, social exchange theory would suggest that—unless the caregiver's childhood was characterized by abuse or neglect—providing care may be perceived as reciprocation of parents' love and care during childhood and thus will be associated with more satisfaction and less caregiver burden (e.g., Wright & Aquilino, 1998). Because children-in-law do not experience a comparable sense of reciprocity, caregiving may be less rewarding for them (e.g., Ingersoll-Dayton, Starrels, & Dowler, 1996).

There are inconsistencies in the empirical studies regarding whether children-in-law are more or less distressed than other caregivers. For example, Lee, Yoon, and Kropf (2007) report higher levels of burden in daughters-in-law than in adult children, Neal, Ingersoll-Dayton, and Starrels (1997) find no significant differences in caregiver burden between children-in-law and children, whereas Lieberman and Fisher (1995) report higher levels of burden in adult children than in children-in-law.

Of course, the observed inconsistencies between studies may be because of differences in study characteristics, such as when spouses are compared with coresiding children versus children who do not share the household with the care recipient (Tennstedt et al., 1993). Another source of inconsistencies may be the selective assessment of children-in-law from Asian families who are often the primary caregiver (Hirakawa et al., 2006; Lee et al., 2007) versus assessing Caucasian children-in-law who normally are the secondary caregiver. In these situations, children-in-law may experience greater social pressure than adult children to take the caregiver role (e.g., Zhan & Montgomery, 2003), potentially contributing to psychological distress. In addition, most available studies include a relatively small number of children-in-law which impedes the identification of between-group differences, because of low statistical power. Thus, the goal of the present meta-analysis was to analyze differences between caregiving spouses, children, and children-in-law based on a large data set of pooled results from available studies.

Research Questions

Sociodemographic Characteristics

With regard to sociodemographic characteristics, we expected in Hypothesis 1 (H1) that spouses would be older (H1a) but care for younger care recipients (H1b) than children and children-in-law (Brody, 1981). In addition, spouses would be less likely to be female (H1c) and employed (H1d), but more likely to be married (H1e) and to share the household with the care recipient (H1f) (Wolff & Kasper, 2006). Because of cohort differences and employment status, spouses were also expected to have lower socioeconomic status than children and children-in-law (H1g). Furthermore, we expected fewer spouses among caregivers from ethnic minorities (H1h) both because of higher birth rates and stronger filial expectations among adult children and children-in-law of African American, Latino, and Asian American descent (Pinquart & Sörensen, 2005). When comparing children and children-in-law, we expected to find more women (H1i) and married caregivers (H1j) among children-in-law than among children, because children-in-law are married by definition and sons-in-law generally provide less support than daughters-in-law and adult children (Peters-Davies, Moss, & Pruchno, 1999).

Caregivers Resources

We expected in Hypothesis 2a that spouses would be in worse physical health than other caregivers because of their higher age (e.g., Pinquart & Sörensen, 2007). Because children-in-law also experience less emotional obligation to reciprocate childhood care than children or spouses (as suggested by social exchange theory), we expected them to have less positive relationships with the care recipient (H2b). We did not state a hypothesis regarding whether spouses, adult children, and children-in-law would differ in the use of informal and formal support, since little theory and inconsistent empirical work are available on this question.

Sources of Caregivers Distress

Hypothesis 3 states that some sources of caregiving-related stress would be most prevalent among spouses and least prevalent among children-in-law. We hypothesized in H3a that spouses would provide higher levels of support, for example, because they are more likely to live with the care recipient (see Tennstedt et al., 1993). We did not expect that spouses would be confronted with higher levels of frailty, cognitive deficits, and behavior problems of the care recipient than children or children-in-law: Because children and children-in-law often become caregivers when the spouse of the care recipient is no longer alive or able to provide care (Brody, 1981), the care recipient may be older, more disabled, or exhibit more behavior problems. In contrast, children-in-law are often recruited as secondary caregivers (e.g., Merrill, 1993); thus we expected in H3b that they would provide, on average, less care than adult children.

Psychological Distress

We expected in Hypothesis 4 that spouses would report higher levels of burden (H4a) and depression (H4b) as well as lower levels of positive psychological well-being (H4c) than adult children and children-in-law because of the greater closeness of their relationship with the care recipient (Cantor, 1983), higher levels of care provision (Tennstedt et al., 1993), and worse physical health (Pinquart & Sörensen, 2007). Children and children-in-law were expected to show similar levels of psychological distress, although children-in-law may perceive fewer uplifts of caregiving (H4d): Drawing on social exchange theory, the opportunity to reciprocate the love received from one’s parent in the past provides better conditions for perceiving positive aspects of caregiving.

According to caregiver stress models, psychological distress is affected by caregiving-related stressors (e.g., impairments of the care recipient, amount of care provision) and of psychosocial resources, such as social support. In addition, sociodemographic characteristics may affect caregiving outcomes (e.g., Aneshensel, Pearlin, Mullan, Zarit, & Whitlatch, 1995). We tested this using a multivariate approach. Because differences in psychological distress between caregiving spouses and children/children-in-law have been explained by differences in caregiving stressors and caregiver health, we expected in Hypothesis 5 that differences in psychological distress will be reduced or no longer be significant after controlling for age and physical health of the caregiver, coresidence, amount of support provision, and other potential confounders. We do not include coping in the multivariate analysis because too few studies have assessed this variable.

Method

Search for Studies

Computerized literature searches were performed by the first author with the use of PSYCINFO, MEDLINE, AGELINE, Current Contents, and PSYNDEX; search terms were (caregiving or caregiver) and (spouse or wife or husband or wives or husbands or children or daughters or sons or children-in-law or daughters-in-law or sons-in-law) and (elderly or old age or dementia). Further studies were identified by cross-referencing and by manually checking abstracts from gerontological conferences. Studies that were published or presented before September 2010 were included. Inclusion criteria for this study were as follows: (1) spouse caregivers were compared with caregiving adult children or children-in-law, or child caregivers were compared to child-in-law caregivers, (2) size of group differences were reported in standard deviation units or as statistical measures that could be converted to standard deviation units (e.g., means and standard deviations), (3) studies were in English or German, or in a language for which we were able to obtain translation.

We excluded studies that compared only spouse caregivers, child caregivers, or child-in-law caregivers against a mix of other caregivers. This led to the exclusion of 24% of the identified studies.

Data Extraction

The following variables were coded: number of spouses, number of adult children, number of children-in-law, the size of between-group differences in age of the care recipient, caregiver age, gender, marital status, education, income, coresidence with care recipient, use of informal and of formal support, quality of the relationship with the care recipient, caregiver physical health, physical and cognitive deficits of the care recipient, behavior problems of the care recipient, hours of caregiving, number of caregiving tasks, coping styles, caregiver burden, depression, subjective well-being, and perceived uplifts of caregiving. Based on 20% of the studies, two coders of the study characteristics achieved an average inter-rater agreement of Cohen’s $\kappa = .87$. Disagreements were resolved by consensus.

Measures

Psychological distress and well-being—Caregiver burden was assessed with the Caregiver Burden Interview (Zarit, Bach-Reever, & Peterson, 1980) in 27 studies; other studies used the Caregiver Strain Index (Robinson, 1983; 6 studies), the Perceived Stress Scale (Cohen, Kamarck, & Mermelstein, 1983; 5 studies), and other scales (56 studies). Caregiver depression was most often assessed by the Center for Epidemiological Studies

Depression Scale (Radloff, 1977; CES-D; 30 studies), the Geriatric Depression Scale (Yesavage et al., 1983; 8 studies), and other measures (15 studies). Psychological well-being was measured with indicators of positive affect (8 studies), life-satisfaction (7 studies), and other measures (4 studies). Perceived positive aspects of caregiving, such as perceived enjoyable aspects of caregiving and perceived gains, were measured with the Caregiver Appraisal Scale (Lawton, Kleban, Moss, Rovine, & Glicksman, 1989; 2 studies) and related measures (11 studies).

Caregiver social and health resources—Informal support was assessed by the number of informal helpers or the number of hours of help received (10 studies) and other measures (16 studies). Formal support was assessed by questions asking for the use of services, such as meals on wheels or day-care (19 studies). The perceived relationship quality with the care recipient was assessed with ratings on the closeness of the present or past relationship (7 studies). Caregiver physical health was assessed by single-item indicators of perceived health (30 studies), symptom checklists (14 studies), and questions regarding the frequency of doctor visits and medication use (2 studies). Coping was assessed with the Ways of Coping Questionnaire (Folkman, Lazarus, Pimley, & Novacek, 1987) and related instruments (8 studies).

Caregiving stressors—Functional problems of the care recipient were assessed with measures of activities of daily living and instrumental activities of daily living (31 studies), and cognitive problems were measured with mental status questionnaires and other brief test batteries (e.g., the Mini Mental State Exam; Folstein, Folstein, & McHugh, 1975; 15 studies) and ratings by caregivers (8 studies). Care recipient behavior problems were assessed by the original or revised Memory and Behavior Problems Checklist (Teri, Truax, Logsdon, & Uomoto, 1992; 12 studies) and related scales (24 studies). Caregiver involvement was assessed by the number of caregiving hours per week (26 studies), and the number of caregiving tasks (e.g., help with toileting, cooking etc; 16 studies). The length of care provision (in months or years) was assessed in 23 studies.

Sociodemographic characteristics of the caregiver (age, gender, employment status, coresidence, ethnicity (1 = *White non-Hispanic*, 0 = *others*), marital status (1 = *married*, 0 = *others*), income level, and year of school completed were assessed with single-item indicators.

Statistical Integration of the Findings

Calculations for the meta-analysis were performed in six steps, using random-effects models and iterative maximum likelihood estimations which provide the most accurate estimations (Lipsey & Wilson, 2001).

1. Effect sizes for each study were computed as the difference between spouses and adult children, spouses and children-in-law, and children and children-in-law divided by the pooled standard deviation. Effect sizes were also derived from algebraic equivalents (*t* values, one-way analysis of variance [ANOVA] *F* values, and exact *p* values). Effect sizes that differed by more than two *SD*s from the mean effect size were coded as outliers and set to 2 *SD*. In cases where the direction of

differences between the groups but no exact effect size was reported, we used vote counts to estimate the effect size, as suggested by Bushman and Wang (1996). This procedure is more precise than excluding these studies or setting their effect size to zero (Bushman & Wang). It enabled us to estimate about 5% of the unreported effect sizes. However, eleven studies could not be included in the meta-analysis because of the lack of any relevant statistical information. The included effect sizes were adjusted for biases due to overestimation of the population effect size (common for small samples).

2. Studies were weighted by the reciprocal of the *SEM*.
3. The significance of the mean effect size was tested by dividing the weighted mean effect size by the estimation of the standard error of the mean.
4. The homogeneity of effect sizes was tested by using the homogeneity statistics *Q*. A significant *Q* score indicates that the size of effects differs between studies beyond what would be expected by sampling error alone.
5. A common problem in meta-analysis is the so-called file drawer problem or publication bias, the fact that some studies may remain unpublished because of nonsignificant findings. To solve this problem we utilized a two-step approach suggested by Duval and Tweedie (2000). First, we examined funnel plots to estimate the number of missing studies basing on symmetry assumptions. Second, we imputed the missing values using the “trim and fill” algorithm, added them to the analysis, and re-computed the summary effect sizes. For computation, we used the software Comprehensive Meta-Analysis 2.0.
6. To test whether the expected elevated levels psychological distress of spouses could be explained by differences in caregiving stressors, resources, and sociodemographic variables, our data were subjected to a 2-stage structural equation modeling method (Cheung & Chan, 2005). We first coded all intercorrelations of the study variables from each study. Then, weighted mean correlations were computed for each pair of study variables based on Lipsey and Wilson (2001). The matrix of the mean intercorrelation of the study variables was used for the multiple regression analysis with LISREL. Because the intercorrelations were based on different sample sizes, we used the average sample size for this analysis. Because of the fact that some bivariate effect sizes showed heterogeneity, the multivariate results have to be interpreted with caution.

Results

We included 168 studies in our meta-analysis. Nine of them provided data from more than one sample of caregivers, such as caregivers from different countries. The included studies are marked with an asterisk in the References section. The studies were published or presented between 1980 and September 2010. All but six studies compared caregiving spouses and adult children, 39 studies interviewed spouses and children-in-law, and 46 assessed children and children-in-law. Seventy-four studies focused on dementia caregiving, 19 studies on caregiving for physically frail older adults, and 75 studies included both dementia caregivers and other caregivers. About 62% of the studies had been conducted in the United States.

As shown in Table 1, we were able to analyze data from 28,980 caregiving spouses, 30,739 adult children, and 4,627 children-in-law. Note that the category spousal caregivers included about 1.3% partners of the care recipient who were not married to the care recipient (cohabiting partners or divorced former spouses). Following the terminology of the included studies, we use the term "spouses" for the entire category.

Differences Between the Three Groups of Caregivers

Sociodemographic variables—We first calculated how the three groups of caregivers differed in sociodemographic variables. Cohen (1992) defined effect sizes of $d = .2$ *SD* units as "small," of $d = .5$ as "medium," and of $d = .8$ as "large." In support of H1a, spouses were significantly older than the other groups, and these differences were very large ($d = 1.54$ and $d = 1.16$; Table 2). No significant age differences between children and children-in-law were found. Consistent with H1b, care recipients receiving assistance from children and children-in-law were older than spousal care recipient, and these differences were moderate to large ($d = -.76$ and $d = -.91$). Spousal caregivers were less likely to be female than children ($d = -.36$) and children-in-law ($d = -.55$), thus supporting H1c. Supporting H1d, spousal caregivers were less likely to be employed than the other two groups ($d = -.85$ and $d = -.68$), whereas children and children-in-law did not differ in employment status. In support of H1e, spousal caregivers were more likely to be married than children ($d = 1.09$) and children-in-law ($d = .74$).

Spouses were much more likely to share the household with the care recipient than children ($d = 1.53$) and children-in-law ($d = 1.09$); thus supporting H1f; the two latter groups did not differ significantly from each other. Differences in education and income were small to moderate (H1g). Spouses reported lower educational attainment than the other two groups ($d = -.51$ and $d = -.34$) and lower income than adult children ($d = -.30$); children had higher educational attainment than children-in-law ($d = .21$). Furthermore, spouses were slightly less likely to be members of ethnic minorities than children ($d = -.36$) and children-in-law ($d = -.40$), thus supporting H1h.

Few significant differences were found between children and children-in-law: Fewer adult child caregivers than children-in-law were female ($d = -.45$), thus supporting H1i. In support of Hypothesis H1j, adult children were much less likely to be married than children-in-law, a large difference ($d = -.86$).

Resources—Physical health was worse for spouses than for children ($d = -.31$) and children-in-law ($d = -.36$)—thus supporting H2a. We found few significant differences with regard to social resources. Spouses reported less informal support than adult children ($d = -.17$), but did not differ from children in formal support, or in the perceived quality of the relationship with the care recipient. In support of H2b, adult children reported more positive relationships with the care recipient than did children-in-law; a moderate difference ($d = .71$). Spouses also reported slightly lower levels of instrumental coping (such as problemsolving; *d* = −.14) and affective coping (such as coping by venting; *d* = −.22) than adult children. We had not stated a hypothesis on this topic.

Stressors—The three groups of caregivers did not differ in the reported level of physical and cognitive impairment of the care recipient. However, spousal caregivers reported slightly fewer care recipient behavior problems than did adult children (*d* = −.11) and children-in-law (*d* = −.24). Systematic differences in the amount of care provision were notable: Spouses provided more caregiving hours than the other two groups, thus supporting H3a (*d* = .72 and *d* = .67). Also, spouses helped with a larger number of tasks than adult children (*d* = .20), and reported providing care for a longer time period, but the difference was very small (*d* = .09). Children and children-in-law did not differ in the amount of stressors. Thus, no support was found for H3b.

Psychological distress—No differences between spouses and adult children were found with regard to overall level of burden. However, spouse caregivers reported higher levels of physical burden (*d* = .39), financial burden (*d* = .32), and relationship strain[1] (*d* = .18) than adult child caregivers, but not more emotional burden, social strain[2], and job strain. In addition, spouses reported more physical strain (*d* = .47), financial strain (*d* = .48), relationship strain (*d* = .50), and social strain (*d* = .32) than children-in-law. Finally, children reported more job strain than children-in-law (*d* = .26).

In addition, spouses had higher levels of depressive symptoms than adult children (*d* = .25) and children-in-law (*d* = .39), thus supporting H4b. In support of H4c, spouses reported lower levels of positive psychological well-being than adult children (*d* = −.15) and children-in-law (*d* = −.26), and these differences were very small or small. Only two small differences between adult children and children-in-law reached statistical significance with regard to psychological distress: Children reported more depressive symptoms (*d* = .24) and perceived more uplifts of caregiving than children-in-law (*d* = .24). The latter result supports H4d.

Next, we analyzed whether the results may be affected by file-drawer problems. Imputing results of missing studies with the "trim and fill" algorithm (Duval & Tweedie, 2000), we tested whether the presence of file drawer problem might have led to inflated effect sizes. This was found in only one case: The lower subjective well-being of spouses than of adult children was no longer significant (*d* changed from −.15 to −.09) after applying the procedure. Interestingly, two effects became significant after applying the trim-and-fill algorithm: Spouses reported fewer cognitive deficits than children (*d* changed from −.02 to −.10) and more uplifts than children-in-law (*d* increased from .22 to .31). Because these changes cannot be explained by file-drawer problems, we did not find much evidence for such a bias.

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[1] Relationship strain means problems with the relation to the care recipient.

[2] Social strain means problems with maintaining other social contacts because of caregiving demands.

Potential Explanations for Group Differences in Caregiver Distress

Our second research question focused on factors that could explain higher levels of distress among caregiving spouses compared to other caregivers. Because most studies compared spouses with adult children, we focused on this comparison. We computed hierarchical regression analyses. To test whether the association of spousal status with distress declines after inclusion of additional predictors, we included spousal status in the first step, sociodemographic characteristics in the second step, social and health resources in the third step, and caregiving-related stressors in the final step of the analysis. Only variables that differed significantly between spouses and child caregivers and that may explain observed differences in psychological distress were included. Thus, although spouses report fewer care recipient behavior problems, are more likely to be married and less likely to be female than adult children these three characteristics were not included, since they are linked to *lower* levels of depression. In addition, due to the small number of available studies, we were not able to include coping.

As shown in Table 3, the inclusion of sociodemographic variables, resources, and stressors reduced the size of the association between spousal status and depression, thus supporting H5. However, after including all covariates, spousal status was still associated with higher depression scores. To test for a significant decline in the association between spousal status and depression, we computed 95% confidence intervals (CIs) of the regression coefficient of spousal status. This analysis revealed that the regression coefficient of spousal status at the first step ($\beta = .13$, 95% CI = .12 to .14) was significantly larger than the regression coefficients at step 2 ($\beta = .08$, 95 % CI = .06 to .10) to step 4 ($\beta = .03$, 95% CI = .00 to .05). In addition, the coefficients at step 2 and 3 ($\beta = .07$, 95% CI = .05 to .09) were larger than the coefficient at the final step. This indicates that sociodemographic variables and amount of care provision contributed significantly to the higher level of depression in caregiving spouses. We also analyzed changes in the amount of variance explained by spousal status after inclusion of the other predictors. The variance explained declined from 2% to 0.2%. In addition, lower age, lower educational attainment, being employed, lower informal support, worse physical health, and higher levels of support provision were associated with more depression symptoms.

For positive psychological well-being, we found that spousal status was no longer a significant predictor after including the number of caregiving hours and the number of caregiving tasks as predictors (Table 3). The 95% CI*s* indicate that the regression coefficient of spousal status in the last step of analysis ($\beta = -.02$, 95% CI = −.05 to .02) was significantly different from the coefficient at step 1 ($\beta = -.08$, 95% CI = −.09 to −.06) but not at step 2 ($\beta = -.05$, 95% CI = −.08 to −.02) and step 3 ($\beta = -.04$, 95% CI = −.07 to −.02). The variance explained by spousal status declined from 0.75% to 0.0%. We also found that higher age, minority status, higher educational attainment, not living with the care recipient, not being employed, more informal support, better physical health, and lower levels of care provision were associated with greater well-being.

To identify factors that may explain higher levels of perceived uplifts in adult children *versus* children-in-law, we computed a regression analysis that included child status, the quality of the relationship with the care recipient and educational attainment as predictors, because in this meta-analysis children reported better relationship quality and higher educational attainment than children-in-law, and both variables were expected to be associated with lower psychological distress. In this multivariate regression analysis, the effect of child status is no longer significant ($\beta = .03$, $Z = 1.63$), whereas *lower* educational attainment ($\beta = -.07$, $Z = -3.84$, $p < .001$) and better relationship quality ($\beta = .42$, $Z = 22.57$, $p < .001$) predicted perceived uplifts. After inclusion of the other predictors, the variance of perceived uplifts that is explained by child status dropped from 1.2% to 0.1%.

Discussion

The present meta-analysis reveals considerable differences between spousal caregivers and adult children/children-in-law, the largest being in sociodemographic characteristics, such as age, marital status, employment status, and coresidence. In addition, spouses use less informal support, perceive their physical health to be worse, provide more care, and experience more depressive symptoms than do children and children-in-law. There are few differences between children and children-in-law, but the lower quality of children-in-law's relationship with the care recipient stands out. High levels of psychological distress among spouse caregivers are partially explained by the fact that they provide more care. Below we will discuss only the contradictory and unexpected results.

Two contradictory results emerge. First, we expected that spouses would be confronted with more stressors than adult children and children-in-law (e.g., Tennstedt et al., 1993). Whereas data on the amount of care provision support this suggestion, the reverse is found with regard to reported care recipient behavior problems. It is possible that spouses underreport disturbing behavior of the care recipient. In addition, care recipients of spouses are, on average, 5 years younger than care recipients of adult children and children-in-law. Because dementia is a progressive illness with age-related incidence, spouses may experience fewer dementia-related symptoms than adult children and children-in-law, due to their care recipients' younger age.

Second, contradictory results are evident with regard to psychological distress of children and children-in-law: Adult children report more depression but also more uplifts. Relationship with parents are usually closer than with parents in law and this may cause more psychological distress for adult children seeing their parent suffer (Cantor, 1983), but also more gratification when they are able to reduce suffering or feel like they are reciprocating parents' care during childhood (Wright & Aquilino, 1998).

In the present meta-analysis we find no evidence for the hypothesis that children-in-law provide less help than adult children because they are often only secondary caregivers (e.g., Merrill, 1993). One reason for that null finding may be that a substantial number of the studies of children-in-law focused on Asian and Asian American caregivers. Caregivers from these ethnic groups provide a relatively large amount of support (e.g., Hirakawa et al., 2006).

Meta-analyses do not only test whether between-group differences are statistically significant but also whether effect sizes differ significantly from each other. These comparisons provide some valuable information, and we will highlight three findings. First, differences between spouses and children/children-in-law for sociodemographic characteristics are generally larger than for caregiver stressors (except hours of care) and psychological distress. Caregiving demands and related psychological distress are driven primarily by the needs of the care recipient and these are quite similar for the three groups of caregivers. The larger between-group difference in caregiving hours can be explained by the fact that spouses usually coreside with the care recipient which gives them more opportunities to provide support (e.g., Tennstedt et al., 1993).

Second, we establish much larger differences between spouses and adult children/children-in-law when analyzing the reported number of caregiving *hours* than when analyzing the number of specific caregiving *tasks*, such as help with personal care or cooking. Because many children and children-in-law do not share a household with the care recipient, they probably condense their support provision to fewer hours without necessarily restricting the number of caregiving tasks.

Finally, although physical health declines with age, we find that differences between spouses and children/children-in-law in physical health are much smaller than expected based on the age differences between these groups. This suggests that spousal caregivers may be a positively selected group of relatively healthy older adults who are physically able to provide care. Caregivers with severely impaired health are at increased risk for giving up the caregiver role (Argimon, Limon, Vila, & Cabezas, 2005).

Limitations and Conclusions

While meta-analysis provides a powerful tool to statistically integrate a diverse array of findings, some limitations must be mentioned. First, the empirical data base for comparing children-in-law with other caregivers is much smaller than the data base for comparing spouses and adult children. In addition, some studies on adult child caregivers probably include some children-in-law in the child category without reporting separate results for this subgroup. For our comparisons, we used only studies in which children-in-law were precisely classified, thus limiting the number of studies that could be included. Second, we do not include some variables in the present meta-analysis because there are simply too few studies addressing them. These include the motivation for providing care and social circumstances of taking on the caregiver role. Third, because of the limited number of studies on children-in-law, we are not able to compare subgroups according to their cultural background, such as Asian versus Western caregivers. This would be very useful in understanding cultural differences in the caregiving chain of responsibility as well as the progression through the caregiving "career." We strongly encourage more culturally inclusive caregiving studies. Finally, we focus on differences in the *mean* level of variables between three groups of caregivers. Differences may also exist in the pattern of association between variables (e.g., Li, Seltzer, & Greenberg, 1997). For example, our meta-analysis did not address whether the predictors of psychological distress would differ between spouses, children, and children-in-law. Behavior problems and cognitive deficits of the care recipient could have stronger impact on spouses because they are more likely to share the household with the care recipient and are, therefore, more confronted with these deficits. Future research should investigate these differences.

Despite these limitations, several conclusions can be drawn from the present study. With regard to caregiver research, we observe that studies with small numbers of caregivers of particular kinship types tend to combine subgroups and compare spouse caregivers with other caregivers or adult children with other caregivers. Given the larger similarity of children and children-in-law, we conclude that combining these two groups is more appropriate than grouping spouses together with children or children-in-law. Second, only a small number of studies were available on children-in-law; more research is needed on that group. Third, because between-group differences were only found in domain-specific burden measures (e.g., physical strain) but not in global ones, our results suggest a need for using more domain-specific measures in future studies. Fourth, because most effect sizes were heterogeneous, future studies should identify study characteristics that moderate the size of differences between groups. For example, differences between spouses, children, and children-in-law in caregiver stressors and psychological distress may vary between ethnic groups. Fifth, a greater variety of variables would be helpful in better understanding the differences in responses to caregiving. For example, more comparative studies on the motivation for taking on the caregiver role (e.g., Gräßel, 1997), coping processes, and dimensions of caregiver burden are needed, to determine unmeasured sources of psychological distress or resilience.

Implications for Intervention

This study suggests that spouses, children, and children-in-law caregivers have different needs and may struggle with different issues. As a result, spouses may benefit most from a reduction of caregiving demands (e.g., respite), whereas children-in-law may gain most from family-focused interventions targeted at strengthening the relationship with the care recipient. For example, as long as relationship problems are not part of a longstanding pattern of conflictual family relationships, a family mediation approach may be helpful to deal with diverging expectations or open disagreement between family members as to how to provide care and how to appreciate caregiving efforts. More research is needed to test these types of interventions with children-in-law caregivers.

Because physical health and informal support are the strongest predictors of psychological distress in the multivariate analyses, increasing these resources would also be an important way of reducing caregivers' psychological distress. One example of such an approach is Mittelman and colleagues' multi-component intervention, in which individual and family counseling sessions were used to involve other family members in the care of the older adult and, more broadly, mobilize the spousal caregivers' social support resources. Peer support group sessions were aimed at generating additional support resources and to increase social integration. Participants showed an increase in social support (Roth, Mittelman, Madan, & Haley, 2005) and even in perceived physical health (Mittelman, Roth, Clay, & Haley, 2007).

Interventions focused on physical health tend to be especially helpful when they increase physical activity, healthy nutrition, and regular medical checkups. For example a physical activity and nutrition intervention designed for sedentary wives and daughters of family members with dementia decreased blood pressure reactivity, perceived stress, depression, and burden (King, Baumann, O'Sullivan, Wilcox, & Castro, 2002). In sum, our study suggests that there are differences between types of caregivers. Interventions may be most effective if they address the specific issues faced by a particular type of caregiver.

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Table 1

Descriptive Characteristics of the Samples

	Spouses		Adult children		Children-in-law	
	M	***SD***	***M***	***SD***	***M***	***SD***
Age of caregiver	69.80	4.03	51.08	5.71	47.15	3.38
Age of care recipient	73.36	3.59	78.34	4.00	76.14	4.36
% female caregivers	64.79	11.07	77.61	12.50	89.58	16.62
% married caregivers	98.77	2.29	62.29	13.14	87.82	22.95
% employed caregivers	14.99	9.18	53.09	13.20	59.19	14.98
% coresiding caregivers	96.67	7.01	50.96	26.08	46.36	24.20
% ethnic minority	26.37	25.88	27.23	25.50	20.27	24.57
Length of caregiving (years)	5.77	2.47	5.72	2.13	4.70	1.49
Hours of caregiving per week	56.44	27.23	27.31	13.78	12.31	14.44
N		28,980		30,739		4,627

Note. Only a subsample of the included studies provided exact numbers of these variables.

Table 2

Differences Between Spousal, Adult Child, and Child-in-Law Caregivers

	Spouses versus adult children					Spouses versus children-in-law					Children versus children-in-law				
	K	***N***	***d***	**95% CI**	***Q***	***k***	***N***	***d***	**95% CI**	***Q***	***k***	***N***	***d***	**95% CI**	***Q***
Sociodemographic variables															
Caregiver age	52	18,033	1.54^{c}	1.44 to 1.70	619.42^{c}	6	1,824	1.62^{c}	1.16 to 2.08	50.39^{c}	9	4,532	.00	−.08 to .09	8.76
Care recipient age	19	8,271	$-.76^{c}$	−.89 to −.64	83.56^{c}	4	1,549	$-.91^{c}$	−1.06 to −.76	1.84	10	3,491	−.14	−.32 to .05	47.97^{c}
Caregiver: Women	87	38,719	$-.36^{c}$	−.44 to −.28	934.79^{c}	22	6,548	$-.55^{c}$	−.72 to −.38	150.70^{c}	28	10,613	$-.45^{c}$	−.64 to −.26	399.32^{c}
Being married	26	10,808	1.09^{c}	.84 to 1.33	672.11^{c}	4	1,537	.74	−.21 to 1.69	93.71^{c}	5	3,731	$-.86^{c}$	−1.26 to −.45	48.73^{c}
Coresidence	28	13,940	1.53^{c}	1.29 to 1.77	861.35^{c}	1	454	1.09^{c}	.87 to 1.30		3	1,452	−.26	−.70 to .23	16.95^{c}
Caregiver employed	32	13,129	$-.85^{c}$	−.97 to −.73	277.64^{c}	4	1,216	$-.68^{c}$	−.84 to −.51	5.44	8	4.247	−.04	−.12 to .04	3.19
Education	35	11,003	$-.51^{c}$	−.62 to −.41	167.01^{c}	6	1,926	$-.34^{b}$	−.59 to −.10	21.01^{c}	9	2,741	$.21^{a}$	.01 to .41	40.96^{c}
Income	14	7,542	$-.32^{c}$	−.46 to −.18	68.74^{c}	4	1,333	−.31	−.98 to .37	50.28^{c}	6	1,849	−.05	−.27 to .18	14.44^{a}
Ethnic minority	32	21,794	$-.36^{c}$	−.44 to −.28	243.96^{c}	6	1,596	$-.40^{b}$	−.18 to −.62	53.67^{c}	3	1,398	−.09	−.32 to .14	17.31^{c}
Resources															
Informal support use	28	8,531	$-.17^{b}$	−.26 to −.07	123.05^{c}	7	1,904	−.14	−.30 to .03	10.73	7	2,144	−.10	−.21 to .01	4.72
Formal support use	21	8,696	−.05	−.18 to .08	163.87^{c}	3	1,224	−.08	−.23 to .08	0.12	3	1,517	.09	−.06 to .24	0.72
Relationship quality	5	1,594	−.05	−.28 to .17	12.00^{a}	0					5	770	$.71^{c}$	.36 to 1.05	16.27^{b}
Physical health	48	18,291	$-.31^{c}$	−.36 to −.26	160.09^{c}	8	2,506	$-.36^{c}$	−.53 to −.18	9.78^{b}	10	2,909	−.08	−.21 to .06	19.01^{a}
Instrumental coping	7	1,069	$-.14^{a}$	−.27 to −.02	8.12	0					0				
Cognitive coping	6	1,300	.02	−.15 to .18	9.46	0					0				
Emotionally focused coping	8	2,025	$-.22^{a}$	−.41 to −.02	25.19^{c}	0					0				
Stressors															
Physical deficits of CR	33	18,998	−.03	−.09 to .03	68.66^{c}	7	2,209	−.13	−.35 to .09	23.43^{c}	11	4,201	−.00	−.13 to .12	25.04^{b}
Cognitive deficits of CR	24	9,869	−.02	−.11 to .06	49.94^{c}	4	1,195	.04	−.14 to .21	11.45^{a}	5	1,700	.01	−.12 to .15	1.02
Behavioral problems of CR	28	14,826	$-.11^{c}$	−.17 to −.06	48.83^{b}	5	1,402	$-.24^{c}$	−.38 to −.10	2.11	6	2,633	−.13	−.33 to .06	16.81^{b}
Hours of care	26	14,911	$.72^{c}$	.58 to .89	284.76^{c}	6	2,604	$.67^{c}$	.37 to .98	37.15^{c}	11	5,890	.02	−.16 to .20	64.95^{c}
No. caregiving tasks	18	10,923	$.20_{b}$	.05 to .34	187.13^{c}	5	2,458	.31	−.18 to .79	67.05^{c}	8	6,477	.02	−.05 to .09	9.23

	Spouses versus adult children					Spouses versus children-in-law					Children versus children-in-law				
	K	*N*	*d*	95% CI	*Q*	*k*	*N*	*d*	95% CI	*Q*	*k*	*N*	*d*	95% CI	*Q*
Years caregiving	26	10,040	$.09^{a}$	.01 to .18	82.05^{c}	4	1,319	.14	−.00 to .28	2.96	4	1,632	.01	−.21 to .24	6.94
Psychological distress															
Burden	94	29,493	.05	−.01 to .10	378.28^{c}	17	3,918	.10	−.03 to .24	57.31^{c}	21	7,756	−.06	−.19 to .07	123.47^{c}
Emotional burden	12	5,595	.13	−.03 to .28	74.73^{c}	3	1,083	.19	−.07 to .46	5.38	3	1,484	.05	−.10 to .20	5.87
Physical strain	9	2,459	$.39^{c}$	.14 to .64	17.31^{c}	2	620	$.47^{c}$	.27 to .67	0.01	2	1,018	.05	−.57 to .67	8.45^{b}
Financial strain	5	3,076	$.32^{c}$	.14 to .49	17.43^{c}	4	1,597	$.48^{c}$	.18 to .79	17.42^{c}	4	2,114	−.00	−.35 to .35	25.80^{c}
Relationship strain	11	2,959	$.18^{a}$	.01 to .34	40.37^{c}	2	558	$.50^{a}$	.05 to .96	3.91^{a}	2	581	−.12	−.99 to .76	16.08^{c}
Social strain	13	3,474	.07	−.12 to .26	74.09^{c}	3	1,672	$.32^{c}$	.17 to .46	4.13	3	1,211	−.19	−.57 to .19	13.50^{b}
Job strain	2	1,637	−.05	−.28 to .18	5.38^{a}	2	977	−.11	−1.12 to .89	42.31^{c}	2	1,096	$.26^{c}$	.11 to .41	0.56
Depression	42	14,402	$.25^{c}$	.21 to .28	158.35^{c}	10	1,247	$.39^{c}$	.08 to .70	25.95^{b}	10	1,622	$.24^{a}$	.06 to .42	14.21
Well-being	19	6,857	$-.15^{b}$	−.26 to −.03	67.30^{c}	8	2,136	$-.26^{a}$	−.48 to −.03	29.99^{c}	7	2,793	−.02	−.21 to .18	20.75^{c}
Uplifts	14	6,505	−.06	−.19 to .08	85.22^{c}	5	1,917	.16	−.06 to .38	29.29^{c}	5	2,181	$.24^{c}$	.14 to .35	8.86

Note. Values of *d* > 0 indicate higher levels of the variable in the former group. *K* = number of studies; *N* = summed-up sample size; *d* = effect size; 95% CI = 95% confidence interval; *Q* = homogeneity statistics (significant values indicate heterogeneity of effect size); CR = care recipient.

[a] $p < .05$.

[b] $p < .01$.

[c] $p < .001$.

Table 3

Predictors of Caregiver Depression and Positive Psychological Well-Being (Multiple Linear Regression Analysis)

	Caregiver depression				Positive psychological well-being			
	β	β	β	β	β	β	β	β
Spouse	.13***	.08***	.07***	.03*	−.08***	−.05***	−.04***	−.02
Age		−.04***	−.07***	−.07***		.07***	.09***	.08***
% ethnic minority		−.01	.00	−.00		.05***	.04***	.04***
Education		−.06***	−.04***	−.02*		.04***	.03**	.03**
Income		−.05***	−.01	.01		.04***	.01	−.01
% coresidence		.08***	.02*	−.02		−.09***	−.05***	−.06***
% employed		.00	.06***	.08***		−.04***	−.08***	−.10***
Informal support			−.19***	−.18***			.16***	.16***
Physical health			−.35***	−.33***			.23***	.22***
No. of caregiving hours				.10***				−.10***
No. of caregiving tasks				.07***				−.03**
No. of months in caregiver role				.02				−.04***
R^2	.02	.03	.18	.20	.006	.05	.12	.13
N	12,425				10,510			
K	30				25			

Note. *N/k* = average number of caregivers/included studies that provided data on the intercorrelation of study variables.

$^{*}p < .05$.

$^{**}p < .01$.

$^{***}p < .001$.