

Marital Strain Exacerbates Health Risks of Filial Caregiving: Evidence From the 2005 National Survey of Midlife in the United States

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Abstract

This study examined linkages between providing care for a parent (in contrast to not providing any care to other kin or nonkin) and four dimensions of physical health (self-rated health, functional limitations, physical symptoms, chronic conditions), as well as moderation of these linkages by gender and a negative dimension of marital quality—marital strain. Regression models were estimated using telephone and self-administered questionnaire data from 1,080 married men and women who participated in the National Survey of Midlife in the United States 2005. Although providing filial care was not found to be a global health risk for all married caregivers, marital strain was a critical factor in determining risk. Contrary to hypothesis, robust gender differences were not in evidence. But among both women and men, caregiving for a parent in the presence of high levels of marital strain was associated with significantly poorer health across all four evaluated outcomes.

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More than **65 million people**, 29% of the U.S. population, provide care for a chronically ill, disabled, or aged family member or friend during any given year, and **36%** of family caregivers care for a parent (Caregiving Statistics, 2009). *Providing care to disabled elderly parents* has been linked to considerable strain, burden, psychological distress, and poorer physical health (e.g., Hoyert & Seltzer, 1992; Pinquart & Sorensen, 2003, 2006, 2007; Young & Kahana, 1989). Empirical studies regarding the well-being risks of providing filial caregiving as well as family caregiving overall have focused more on mental health (e.g., psychological well-being, depression) than physical health as outcomes (Barrow & Harrison, 2005; Pinquart & Sorensen, 2007); have often clustered different relationship types of caregiving together, even though differentiating relationship types of caregiving has been found to be important (Marks, Lambert, & Choi, 2002; Seltzer & Li, 2000); have often lacked a noncaregiver comparison group (Vitaliano, Zhang, & Scanlan, 2003); and have thus far not fully explored how differences in marital role experience might condition the experience and physical health outcomes of caregiving for a parent (Choi & Marks, 2006). To address some of the limitations of previous research, the purpose of this study was to use U.S. national survey data to examine the linkages between filial caregiving and four aspects of physical health (self-rated health, functional limitations, physical symptoms, and physical chronic conditions) and to explore how these links might be conditioned by gender and a negative dimension of marital quality—marital strain.

Theoretical and Empirical Foundation

Life Course Perspective

This study was guided by a life course theoretical perspective on caregiving. The life course principle of “linked lives” (Elder, Johnson, & Crosnoe, 2003) draws attention to how family members’ developmental trajectories (including mental and physical health trajectories) are consequentially interdependent and “linked” across time, such that transitions and experiences of one member of a family (e.g., an elder experiencing a transition to greater disability or frailty) can be expected to have developmental consequences for other members of the family (e.g., an adult child who views undesirable change in a parent’s health and well-being and transitions into taking a greater role in providing care for his or her parent).

The life course perspective additionally guides us to consider important contextual factors when considering the developmental effects of a role, such as a caregiving role (Bengtson & Allen, 1993; Settersten, 2003). There is considerable evidence that in contemporary society the social script for a caregiver role is gendered, that is, normative expectations for caregiving are typically different for women in contrast to men (Campbell & Martin-Matthews, 2003, Yee & Schulz, 2000). Women more often assume the role of primary caregiver (in contrast to secondary caregiver) than men (Montgomery, 1992); women typically engage in more hands-on tasks especially intimate personal care than men (Campbell & Martin-Matthews, 2003; Yee & Schulz, 2000); women are socialized to view caregiving as a more salient role in their role-identity repertoires than men, thereby making them even more vulnerable to compromised well-being when stresses in this role occur (Kessler & McLeod, 1984). Additionally, the overall structural disadvantages of women in gender relations in contemporary societies (e.g., lower incomes in similar work roles, more responsibilities for child care and other extended kinship care, greater overall economic vulnerability) would lead us to expect that men might suffer less and women might suffer more in a caregiving role (Calasanti & King, 2007). Although an alternative hypothesis might be that due to being less socialized to anticipate a caregiving role, less socialized to feel comfortable seeking help when stresses accumulate, and perhaps having less access to a larger social support network, men might have their own unique health risks in a caregiving role (Kramer, 2001). Given these considerations, a life course perspective guided us to consider potential gender differences in health risk for a filial caregiving role.

Another feature of life course theorizing about social roles and their developmental effects emphasizes that the experience and developmental consequences of any particular role are likely to be importantly conditioned by the overall role context of that role, that is, developmental consequences of roles are dependent on interdependence and congruency of roles, as well as the role quality of other roles (Settersten, 2003). For example, married adults providing care for a parent may have differential health effects in the presence of the stress associated with greater marital strain in contrast to limited marital strain. Therefore, we were guided to examine differences in marital strain as a moderator of caregiving in this study.

Evidence Linking Filial Caregiving and Health

A number of studies, particularly since 1990, have indicated a risk for adverse physical health outcomes linked to caregiving (for reviews, see Pinquart & Sorensen, 2003, 2006, 2007; Schulz, O'Brien, Bookwala, & Fleissner, 1995;

Schulz, Visintainer, & Williamson, 1990; Vitaliano et al., 2003) although this literature is not consistent (e.g., Brown et al., 2009; Ramsay, Grundy, & O'Reilly, 2013; Schulz et al., 1990). Samples including a mixture of types of caregivers have reported a higher number of physical symptoms (Baumgarten et al., 1992), a higher risk of reporting chronic conditions (O'Reilly, Finnan, Allwright, Smith, & Ben-Shlomo, 1996), and poorer self-evaluated health (Ho, Chan, Woo, Chong, & Sham, 2009).

Only limited research has thus far addressed the health risks for filial caregivers as a specific group, and results from these studies are mixed. For example, Strawbridge, Wallhgen, Shema, and Kaplan (1997), using population sample data from the Alameda County Study, found that adult-child caregivers had poorer mental health, but not physical health, than noncaregivers. Lawton, Moss, Hoffman, and Perkinson (2000) examined the transition to caregiving among daughters and daughters-in-law and did not find negative effects on mental and physical health. Seltzer and Li (2000) found entry into filial caregiving was associated with a decline in personal mastery, but not other health outcomes. Marks, Lambert, Jun, and Song's (2008) national study that examined effects of transitioning into filial caregiving on mental and physical health suggested no negative global main effect of caregiving on self-rated health, although low income increased the health risk of filial caregiving among daughters.

Additionally, Cahill and Shapiro (1998) found that daughter caregivers reported that they acquired new health problems after taking on the caregiving role for a parent with dementia, just as wives did. Also, Coe and Van Houtven (2009) found that continued caregiving over time had a negative effect on self-rated health among married daughter caregivers and son caregivers.

Therefore, guided by the "linked lives" assumption of the life course perspective, and the accumulating overall evidence suggesting a link between caregiving and negative effects on physical health, *we hypothesized that filial caregiving would be linked to poorer physical health.*

Evidence Regarding Gender Differences in Linkages Between Caregiving and Health

Although there is no total consistency in results across studies, the predominance of evidence suggests that women experience more burden and psychological distress in a caregiving role overall than men (Marks et al., 2002; Miller & Cafasso, 1992; Montgomery, 1992; Yee & Schulz, 2000), and a more limited number of studies examining physical health outcomes also provide evidence of gender differences that disadvantage women (Pinquart &

Sorensen, 2006). For example, Vitaliano et al. (2003) found five studies (Gallant & Connell, 1997; Grafstrom, Fratiglioni, Sandman, & Winblad, 1992; Neundorfer, 1991; Rose-Rego, Strauss, & Smyth, 1998; Sparks, Farran, Donner, & Keane-Hagerty, 1998) to allow them to estimate point-biserial correlations using a random-effects model for studies of gender moderation in the influence of caregiving for a family member with Alzheimer's disease on self-rated health. They found evidence that overall, women caregivers reported poorer global health than did men caregivers. Son et al.'s (2007) study also suggested that women caregivers reported poorer self-rated health over time than men caregivers. Furthermore, guided by a feminist gerontological perspective that considers how gender is embedded in social relationships at all levels, Calasanti and King's (2007) study suggested that because men typically do not see themselves as nurturers and tend to have no particular expectations in care work, their shortcomings in caregiving cause less stress for them.

Therefore, guided by the life course perspective's emphasis on heterogeneity in developmental outcomes (including health) due to contextual factors—including gendered differences in the caregiving role for women in contrast to men—as well as the available empirical research, *we hypothesized that women filial caregivers would report poorer physical health than men filial caregivers.*

The Evidence Regarding Caregiving, Marital Quality, and Health

We were not able to locate any studies that evaluated marital quality as a moderator of the impact of filial caregiving on physical health. However, some related research provided additional rationale for our focus on this particular moderator. First, there is a considerable literature that has demonstrated that adults who are married tend to report better health and have lower rates of mortality than adults who are unmarried (Lillard & Waite, 1995; Waite & Gallagher, 2000). Additionally, more recent research has focused on how marital quality, rather than marriage, per se, may be the important factor influencing health (Bookwala, 2005; Choi & Marks, 2008; Hawkins & Booth, 2005; Umberson, Williams, Powers, Liu, & Needham, 2006; Williams & Umberson, 2004). Research also suggests that poor marital quality is linked to greater depression (Beach, Katz, Kim, & Brody, 2003; Choi & Marks, 2008; Whisman & Bruce, 1999). And, again, as a stressor, the distress of a poor marriage may also, in turn, have a negative impact on physical health.

We expected that having a caregiving role in combination with a marital role could result in a potential interaction effect on health. In a poor quality marriage, higher levels of marital conflict and/or strain might exacerbate the

stress of caregiving and increase the risks of poorer health outcomes (Choi & Marks, 2006). Caregivers who are experiencing more strain from their spouses may feel less able to depend on their spouses for instrumental or emotional support in the filial caregiving role, they may experience more role conflict in combining the roles of marital partner and filial caregiver, they may not be able to balance the stress of caregiving with relaxation with a partner, and they may feel less time and latitude to engage in health-promoting lifestyle habits (Hoffman, Lee, & Mendez-Luck, 2012). Examining mental health outcomes, a few research studies have suggested that poorer marital quality (e.g., higher levels of disagreement) can interact with caregiving to lead to poorer mental health (Choi & Marks, 2006; Voydanoff & Donnelly, 1999).

Therefore, guided by the life course perspective's emphasis on heterogeneity of role effects due to role context differences, together with previous related research, *we hypothesized that filial caregiving in the presence of greater marital strain would be linked to poorer physical health outcomes.*

Furthermore, empirical studies indicate that marital quality matters more to women than men for their personal well-being (Moberg & Lazarus, 1990; Thompson & Walker, 1989; Whisman, 1999). For example, a recent meta-analysis study about marital quality and personal well-being indicated stronger associations between marital quality and well-being in samples comprised only of women in contrast to samples comprised only of men (Proulx, Helms, & Buehler, 2007). Therefore, guided by the life course perspective's emphasis on heterogeneity of role effects due to role context differences, together with previous related research related to gender differences in the impact of marital quality on well-being, *we hypothesized that greater marital strain in interaction with a caregiving role will be associated with even more problematic impact on physical health for women in contrast to men.*

Additional Sociodemographic Factors Linked to Health

Given findings from previous studies indicating that age, income, education, race-ethnicity, parental status, and employment status are associated with physical health (e.g., Asch et al., 2006; Lubetkin, Jia, Franks, & Gold, 2005), we also controlled for these factors in our analyses to avoid confounding effects.

Method

Data and Analytic Sample

Data for our analyses came from the national random digit-dialing sample of the National Survey of Midlife in the United States (MIDUS). The MIDUS

included 3,487 noninstitutionalized, English-speaking adults living in the United States at Time 1 (T1, 1995-1996) and included a telephone survey and a mailback self-administered questionnaire. Follow-up data collection took place about 9 years later (Time 2 [T2]: 2004-2006). A detailed description of the data set and data collection procedure can be obtained at the MIDUS website (<http://midus.wisc.edu>).

The analytic sample for this study included 1,080 primary respondent married adults aged 33 to 83 at T2. In the phone questionnaire of MIDUS at T2 (but not T1), caregiving status was assessed (see more in Independent Variables below). Because of our research focus on the relationship between filial caregiving, marital strain, and physical health, we limited our analytic sample to T2 respondents who were married and who in the telephone survey reported *either* providing care to a biological or adoptive mother or father, or who reported providing no care to any nuclear or extended family members or nonkin. (Approximately 6% of MIDUS T2 primary respondents were excluded from the analytic sample due to providing care for someone who was another category of kin or for a nonkin person.)

Outcome Variables

Physical health has been determined to be a multidimensional construct (Patrick & Erikson, 1993); therefore, we examined four relatively distinct self-reported health outcomes, reflecting three dimensions of physical health—self-rated health (indicator of health perceptions dimension), functional limitations (indicator of functional status dimension), as well as physical symptoms and health conditions (both indicators of impairments dimension) assessed at T2 (Patrick & Erikson, 1993).

Self-Rated Global Health. A single self-administered item asked participants to rate their physical health on a 5-point Likert-type scale (1 = *excellent*, 2 = *very good*, 3 = *good*, 4 = *fair*, 5 = *poor*). This indicator, modeled in many ways, including as a continuous variable with ordinal categories as we do in this analysis, has been widely studied in studies across many countries (Hertzman, Power, Matthews, & Manor, 2001; Krause, Newsom, & Rook, 2008; Singh-Manoux et al., 2006), and it has found to be an efficient and reliable predictor of mortality, above and beyond clinical reports (Idler & Benyamini, 1997). Responses were reverse-coded so that higher scores reflected better physical health. Table 1 presents descriptive statistics for this and all other analytic variables.

Functional Limitations. Two self-administered items asked respondents about how much their health limited them when performing basic activities of daily

living (ADLs), including (a) bathing or dressing yourself and (b) walking one block (after reverse-coding, response categories were 1 = *not at all*, 2 = *a little*, 3 = *some*, 4 = *a lot*). The mean score of answered items was used for to create this ADLs variable if respondents answered at least one of the two items (Cronbach's $\alpha = .68$). Seven additional self-administered items asked respondents how much their health limited them when performing various instrumental activities of daily living (IADLs), including (a) lifting or carrying groceries; (b) climbing several flights of stairs; (c) bending, kneeling, or stooping; (d) walking more than a mile; (e) walking several blocks; (f) vigorous activities (e.g., running, lifting heavy objects); (g) moderate activities (e.g., bowling, vacuuming; with the same response categories as ADLs). The mean score was used from answered items if respondent answered at least one of the items (Cronbach's $\alpha = .94$). We created our summative *functional limitations* measure by adding the mean amount of functional limitations in basic ADLs and mean amount of functional limitations in IADLs by adding the scores for these two scales (range 2-8).

Number and Frequency of Physical Symptoms. Respondents were asked in the self-administered questionnaire to rate how often they had experienced five types of physical symptoms during the past 30 days on a 6-point scale (1 = *almost every day*, 2 = *several times a week*, 3 = *once a week*, 4 = *several times a month*, 5 = *once a month*, 6 = *not at all*), including (a) headaches, (b) backaches, (c) aches or stiffness in joints, (d) trouble getting to sleep or staying asleep, (e) pain or aches in extremities (arms/hands/legs/feet). Responses were reverse-coded so that higher scores reflect more symptoms and more frequent symptoms. Scores across the five items were summed (Cronbach's $\alpha = .72$).

Number of Chronic Conditions. In the telephone interview at T2, respondents reported whether they had ever had a heart attack or cancer. In the self-administered questionnaire, respondents further indicated whether in the past 12 months they had experienced or been treated for each of 30 chronic conditions (e.g., asthma/bronchitis/emphysema, arthritis/rheumatism/other bone or joint diseases, sciatica/lumbago/recurring backache, high blood pressure/hypertension, diabetes/high blood sugar). A summative measure was created by adding the "yes" responses across the index items for all respondents who provided at least one valid answer to this total of 32 questions. For this analytic sample the range was 0 to 17.

Independent Variables

Caregiving Status. In the phone questionnaire at T2, participants were asked if during the last 12 months they had given personal care for a period of 1

Table 1. Descriptives and Correlations for All Analytic Variables.

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19
Caregiving status																			
1. No Care	—																		
2. Filial Care	-1.0	—																	
Health outcomes																			
3. Self-rated Health	.01	-.01	—																
4. Functional Limitations	-.03	.03	-.52	—															
5. Number/Frequency of Symptoms	-.05	.05	-.34	.42	—														
6. Number of Chronic Conditions	-.00	.00	-.41	.50	.50	—													
Marital quality—Focal predictor																			
7. Marital Strain	.01	-.01	-.03	.01	.11	.02	—												
Marital quality—Control predictor																			
8. Marital Support	-.03	.03	.04	-.01	-.07	.01	-.64	—											
Sociodemographic factors																			

(continued)

Table 1. (continued)

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19
9. Gender (Female = 1)	-.05	.05	.03	.06	.05	.08	.06	-.14	—										
10. Age	.07	-.07	-.16	.30	.08	.27	-.12	.13	-.10	—									
11. Household Income	.03	-.03	.15	-.12	-.10	-.07	-.03	.05	-.08	.09	—								
12. High School Graduate	-.02	.02	-.12	.12	.07	.05	-.02	.04	.07	.05	-.16	—							
13. Some College	-.01	.01	-.04	.04	.13	.06	.01	-.02	.08	.01	-.07	-.38	—						
14. BA or More	.03	-.03	.23	-.22	-.23	-.16	.01	-.00	-.11	-.10	.27	-.50	-.49	—					
15. Black	.01	-.01	-.08	-.01	-.00	.02	.05	-.06	.04	-.02	-.04	-.02	-.01	-.03	—				
16. Other Race/ Ethnicity	-.06	.06	-.06	.01	-.04	-.05	.01	-.01	.02	-.07	-.06	-.04	.02	.00	-.04	—			
17. Parental Status (Parent = 1)	.00	-.00	-.03	.01	.04	-.02	.05	-.07	.03	.09	.05	.04	.01	-.03	.05	-.02	—		
18. Employed Part-time	.01	-.01	.04	-.05	-.03	-.03	.00	.00	.18	-.02	.07	-.02	.02	.02	-.00	-.01	.02	—	
19. Employed Full-time	-.03	.03	.17	-.29	-.09	-.24	.07	-.04	-.22	-.47	-.01	-.03	-.07	.12	.00	.01	-.05	-.48	—
Mean	.96	.04	3.57	2.99	10.0	2.50	2.13	3.66	.47	55.94	66360.34	.28	.27	.39	.03	.05	.93	.21	.47
SD	.20	.20	.98	1.37	5.79	2.39	.60	.51	.50	12.26	51576.71	.45	.44	.49	.17	.23	.25	.41	.50
Range	0-1	0-1	1-5	2-8	0-25	0-17	1-4	1-4	0-1	33-83	0-300,000	0-1	0-1	0-1	0-1	0-1	0-1	0-1	0-1

Note. Data from the 2005 National Survey of Midlife in the United States (MIDUS), married filial caregivers and noncaregivers (N = 1,080).

month or more to a family member or friend because of a physical or mental condition, illness, or disability. Respondents who answered “yes” were asked to indicate to whom they gave the most personal care (i.e., relationship type). Four percent of all T2 respondents (5% of women, $n = 26$; 3% of men, $n = 17$) indicated providing care to a biological or adoptive parent. As noted above, this study was limited to respondents indicating either providing care to a biological or adoptive mother or father (coded 1 for filial care) or providing no care to any family member (including any extended family member) or nonkin person. The noncaregiving group comprised 90% of the total sample at T2 (87% of women, $n = 486$; 92% of men, $n = 551$; coded 0 for filial care).

Marital Strain. In the self-administered survey, respondents were asked to rate six items assessing respondents’ marital strain: (a) how often does your spouse or partner make too many demands on you; (b) how often does he or she argue with you; (c) how often does he or she make you feel tense; (d) how often does he or she criticize you; (e) how often does he or she let you down when you are counting on him or her; (f) how often does he or she get on your nerves, on 4-point scale (1 = *often*, 2 = *sometimes*, 3 = *rarely*, 4 = *not at all*). Items were reverse-coded so that higher scores reflect higher levels of marital strain. The mean score across items was used for this variable if respondents answered at least one item on the scale (Cronbach’s $\alpha = .92$). The marital strain variable was centered.

Control Variable: Marital Support. Scholars have increasingly conceptualized and empirically established that marital quality includes both a positive dimension (e.g., marital support, marital happiness) as well as a negative dimension (e.g., marital strain, marital disagreements; Fincham & Linfield, 1997). Overall, the negative dimension of marital quality has been more consistently linked to differences in health and well-being (Fincham & Beach, 2010). The main focus of this study was to examine a negative dimension of marital quality—marital strain—as a moderator of the linkage between filial caregiving and health. Nonetheless, to better isolate the effects of negative marital quality (i.e., marital strain) from the potential effects of positive marital quality, in all our analyses we also controlled for the presence of marital support among our married respondents.

In the self-administered survey, MIDUS respondents were asked to rate six items assessing respondents’ marital support: (a) how much does your spouse or partner really care about you; (b) how much does he or she understand the way you feel about things; (c) how much does he or she appreciate you; (d) how much do you rely on him or her for help if you have a serious problem; (e) how much can you open up to him or her if you need to talk

about your worries; (f) how much can you relax and be yourself around him or her, on 4-point scale (1 = *often*, 2 = *sometimes*, 3 = *rarely*, 4 = *not at all*). Items were reverse-coded so that higher scores reflect higher levels of marital support. The mean score for all answered items on this index was computed if respondents answered at least one of the items (Cronbach's $\alpha = .90$). The marital support variable was centered.

Demographic Control Variables. As noted previously, all our models adjusted for several sociodemographic factors: gender (dichotomous, 1 = *female*), respondents' age (continuous), household income (continuous, including respondents' reports of income from all sources, as well as their reports of all spousal income), educational attainment (categorical, *high school grad* [includes general education—GED -degree], *some college* [includes associate degrees and all training less than a bachelor's degree], and *bachelor's degree or more* [includes all bachelor's and graduate degrees], reference category was *less than high school*), race/ethnicity (categorical, *Black, other race/ethnicity* [includes missing on race/ethnicity], reference category was *non-Hispanic White*), parental status at T2 (dichotomous, 1 = *currently a parent* [includes parents of a living biological, adoptive, step-, or foster child coresiding or living elsewhere of any age), and employment status at T2 (categorical *part-time* = currently employed less than 40 hours per week [includes missing on work hours coded to the mean work hours], *full-time* = currently employed 40 or more hours a week, reference category was *not employed for pay*).

Data Analysis

Ordinary least squares multiple regression models were estimated (employing listwise deletion for missing cases) using unweighted data. All models included all demographic control variables, as well as the two measures of marital quality (marital strain as our focal factor of interest, marital support as an additional control for positive marital quality). To test our hypothesis regarding the main effect of filial caregiving on physical health outcomes, we estimated models for each outcome in which each aspect of health was regressed on a dichotomous variable indicating whether respondents were filial caregivers or noncaregivers (Model 1 [M1]). To examine our hypothesis regarding moderator effects of gender on linkages between filial caregiving and physical health, Model 2 (M2) added the interaction term *Female* \times *Filial caregiving*. To test our hypothesis regarding moderator effects of marital strain, including potential three-way interactions with gender, Model 3 (M3) included first *Marital strain* \times *Filial Caregiving* alone (without *Female* \times

Table 2. Estimated Unstandardized Regression Coefficients for the Associations Between Filial Care, Gender, Marital Strain, and Self-Rated Health.

	Models			
	M1	M2	M3	M4
Female	.15**	.15**	.15**	.15**
Marital Strain	-.05	-.04	-.01	.00
No Caregiving (omitted)	—	—	—	—
Filial Care	-.08	-.19	-.14	-.16
Female × Filial Care		.18		.02
Marital Strain × Filial Care			-.86***	-.56+
Female × Marital Strain				-.02
Female × Strain × Filial Care				-.58
Marital Support	.07	.07	.09	.09
Age	-.00+	-.00+	-.00+	-.00+
Income	.00***	.00***	.00**	.00**
High School Graduate ^a	.30**	.30**	.28*	.29*
Some College ^a	.43***	.43***	.42***	.42***
BA or more ^a	.70***	.70***	.69***	.69***
Black ^b	-.39**	-.39**	-.41**	-.41**
Other Race/Ethnicity ^b	-.27*	-.27*	-.25*	-.26*
Parental Status (Parent = 1)	-.07	-.07	-.06	-.06
Employed Part-Time ^c	.24***	.24***	.24**	.23**
Employed Full-Time ^c	.37***	.37***	.37***	.37***
Constant	3.01	3.02	3.04	3.04
R ²	.13	.13	.13	.13

Note. N = 1,060.

^aCategorical variable: Reference group is less than high school educational attainment.

^bCategorical variable: Reference group is non-Hispanic White race/ethnicity.

^cCategorical variable: Reference group is not employed for pay.

*p ≤ .10. **p ≤ .05. ***p ≤ .01. ****p ≤ .001 (one-tailed).

Filial Caregiving). Model 4 (M4) added back in *Female x Filial Caregiving*, as well as including *Female x Marital Strain*, and *Female x Marital Strain x Filial Caregiving*. In supplementary analyses (not shown), we examined whether results were different if we did not include both measures of marital quality simultaneously in all the models as controls. We found no difference in results when only one measure of marital quality was included at a time, suggesting these two measures are independent enough to be included simultaneously. In additional supplementary analyses, we explored whether a similar evaluation of moderating effects of marital support (including gender

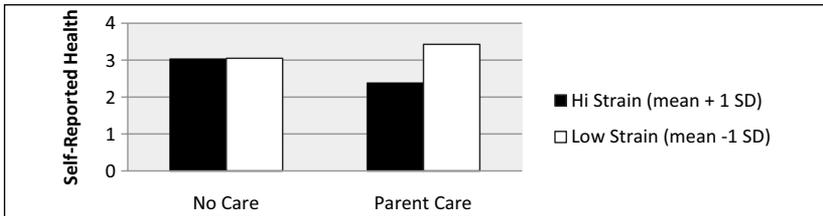


Figure 1. Predicted scores of self-rated health for filial caregivers and noncaregivers who reported experiencing either higher strain or lower strain with their spouses.

differences) might also be feasible; however, the range of marital support among men filial caregivers was too limited to do a reliable moderator study with this marital quality measure with this analytic sample.

In yet other supplementary analyses (not shown) we estimated models with weighted data. We did not find major differences in results using weighted data in contrast to unweighted data; therefore, we report results from unweighted data here because they have more reliable standard errors (Winship & Radbill, 1994).

Results

Filial Caregiving, Gender, Marital Strain, and Global Self-Rated Health

Results from models evaluating differences in global self-rated health among married parent caregivers and married noncaregivers are provided in Table 2, M1 through M4. We predicted that caregiving for a parent due to their long-term illness, condition, or disability would be linked to poorer physical health among married filial caregivers in contrast to married noncaregivers. Findings from M1 did not reveal a significant global difference in self-rated health for filial caregivers in contrast to noncaregivers (Table 2, M1, $b = -.08$, n.s.).

We predicted that married women would experience more problematic health when providing care to a parent than married men. Although we found significant main effects for gender in both M1 and M2 (Table 2, M1 and M2, $b = .15$, $p \leq .01$), no evidence was found for a difference by gender in the linkage between global self-rated health and caregiving among filial caregivers in contrast to noncaregivers (Table 2, M2, $b = .18$, n.s.).

We also predicted that higher levels of marital strain would be associated with an exacerbation of negative impact of caregiving for a parent on health

among married caregivers. The results from M3 revealed that subgroup differences by marital strain were found in linkages between providing care for a parent and self-rated health. The interaction term *Marital strain* \times *Filial care* achieved statistical significance (Table 2, M3, $b = -.86$, $p \leq .001$). Because the three-way interaction of *Female* \times *Marital strain* \times *Filial care* in M4 was not significant (Table 2, M4, $b = -.58$, n.s.), we used the results from M3 to create a graph to better interpret the associations. Figure 1 further illustrates this result by displaying predicted scores calculated separately for men and women one standard deviation above the mean on marital strain (i.e., high strain) and one standard deviation below the mean on marital strain (i.e., low strain) who reported either (a) providing care for a parent or (b) not providing any type of caregiving. The results demonstrate that parent caregivers who reported high strain from their spouses reported a lower level of global self-rated health than noncaregivers who also reported high strain, whereas parent caregivers who reported low strain from their spouses reported a higher level of global self-rated health than their noncaregiving peers who also reported low marital strain. (Note: For this figure and all subsequent figures the baseline model for the predicted scores assumes a respondent who is at the mean on all continuous variables in the model that are not involved in the interaction, and in the zero category for all dichotomous or categorical variables not involved in the interaction.)

In sum, although there was no initial evidence of a global main effect of filial caregiving on self-rated health, nonetheless, our results provided evidence that marital strain moderated the impact of providing care for a parent on self-rated health such that both men and women filial caregivers who reported experiencing high strain in their marriages reported poorer self-rated health than their noncaregiver peers. Contrary to our hypotheses, no gender difference was found in the linkage between filial care and self-reported health or the linkage between filial care, marital strain, and self-reported health.

Filial Caregiving, Gender, Marital Strain, and Functional Limitations

Results from models evaluating differences in functional limitations among married parent caregivers and married noncaregivers are provided in Table 3, M1 through M4. Only trend-level evidence was found in support of the hypothesis of a global main effect of providing care for a parent (Table 3, M1, $b = .28$, $p \leq .10$). Again, contrary to expectation, no gender difference was found in the linkage between functional limitations and parent caregiving (Table 3, M2, $b = .41$, n.s.).

Table 3. Estimated Unstandardized Regression Coefficients for the Associations Between Filial Care, Gender, Marital Strain, and Functional Limitations.

	Models			
	M1	M2	M3	M4
Female	.08	.07	.07	.07
Marital Strain	.10	.10	.07	.03
No Caregiving (omitted)	—	—	—	—
Filial Care	.28 ⁺	.04	-.00	.04
Female × Parent Care		.41		.55 ⁺
Marital Strain × Filial Care			.73*	.21
Female × Marital Strain				.10
Female × Strain × Filial Care				1.01 ⁺
Marital Support	-.04	-.03	-.05	-.03
Age	.02***	.02***	.02***	.02***
Household Income	-.00***	-.00***	-.00***	-.00***
High School Graduate ^a	-.30*	-.31*	-.29*	-.31*
Some College ^a	-.44**	-.45**	-.44**	-.45**
BA or More ^a	-.73***	-.73***	-.72***	-.74***
Black ^b	-.40*	-.41*	-.40*	-.39*
Other Race/Ethnicity ^b	.11	.11	.10	.11
Parental Status (Parent = 1)	-.13	-.13	-.13	-.13
Employed Part-Time ^c	-.55***	-.55***	-.54***	-.53***
Employed Full-Time ^c	-.73***	-.73***	-.73***	-.72***
Constant	3.03	3.04	3.03	3.04
R ²	.19	.19	.20	.20

Note. $N = 1,054$.

^aCategorical variable: Reference group is less than high school educational attainment.

^bCategorical variable: Reference group is non-Hispanic White race/ethnicity.

^cCategorical variable: Reference group is not employed for pay.

* $p \leq .10$. ** $p \leq .05$. *** $p \leq .01$. **** $p \leq .001$ (one-tailed).

Nonetheless, in support of our hypothesis regarding marital strain, there was evidence in M3 that marital strain moderated the impact of filial care on functional limitations (Table 3, M3, $b = .73$, $p \leq .05$), although the three-way interaction term for *Female × Marital strain × Parent care* in M4 was significant at only a trend level (Table 3, M4, $b = 1.01$, $p \leq .10$). Therefore, we used results from M3 to further interpret the interaction. Figure 2 displays predicted scores calculated separately for caregivers and noncaregivers and illustrates that filial caregivers experiencing high strain with their spouses reported higher levels of functional limitations than noncaregivers who also

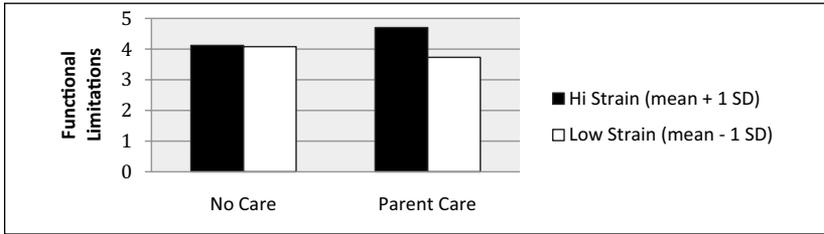


Figure 2. Predicted scores of functional limitations for filial caregivers and noncaregivers who reported experiencing either higher strain or lower strain with their spouses.

experienced high strain marriages. Filial caregivers experiencing low strain with their spouses reported modestly less functional limitation than noncaregivers experiencing low strain with their spouses.

In sum, findings indicated that although a robust main effect of providing care for a parent on functional limitations was not in evidence, marital strain did moderate the influence of providing care for a parent. Specifically, filial caregivers in high strain marriages reported higher levels of functional limitations than noncaregivers in high strain marriages, whereas filial caregivers in low strain marriages were buffered from any negative health risk of filial caregiving in terms of functional limitations. No robust gender differences were in evidence.

Filial Caregiving, Gender, Marital Strain, and Physical Health Symptoms

Results from models evaluating differences in physical health symptoms among married parent caregivers and married noncaregivers are provided in Table 4, M1 through M4. In M1, a main effect of providing care for a parent suggested that respondents who reported they were providing care for their parents were reporting a greater number and more frequent physical health symptoms in contrast to respondents who reported they were not providing any type of caregiving (Table 4, M1, $b = 1.48, p \leq .05$). No subgroup difference by gender was found in the linkage between physical health symptoms and caregiving among parent caregivers and noncaregivers (Table 4, M2, $b = -2.22, n.s.$).

Marital strain was found to have a consistent main effect in predicting number and frequency of symptoms (e.g., Table 4, M3, $b = 1.00, p \leq .01$) and it was found to also moderate the linkage between physical health symptoms

Table 4. Estimated Unstandardized Regression Coefficients for the Associations Between Filial Care, Gender, Marital Strain, and Number and Frequency of Physical Symptoms.

	Models			
	M1	M2	M3	M4
Female	.20	.28	.28	.28
Marital Strain	1.17***	1.13***	1.00**	1.09***
No Caregiving (omitted)	—	—	—	—
Filial Care	1.48*	2.77*	2.58*	2.54*
Female × Filial Care		-2.22		-1.76
Marital Strain × Filial Care			3.00*	3.48+
Female × Marital Strain				-.18
Female × Strain × Filial Care				-.94
Marital Support	.08	.04	-.04	-.06
Age	.02	.02	.02	.02
Income	-.00+	-.00+	-.00+	-.00+
High School Graduate ^a	-1.02+	-.99	-.92	-.90
Some College ^a	-.41	-.38	-.34	-.32
BA or More ^a	-2.92***	-2.91***	-2.88***	-2.86***
Black ^b	-1.25	-1.23	-1.17	-1.17
Other Race/Ethnicity ^b	-1.09+	-1.08+	-1.16+	-1.17+
Parental Status (Parent = 1)	.45	.46	.45	.45
Employed Part-Time ^c	-.94*	-.94*	-.92*	-.93*
Employed Full-Time ^c	-.98*	-.97*	-.96*	-.97*
Constant	10.92	10.82	10.74	10.73
R ²	.08	.08	.09	.09

Note. $N = 1,037$.

^aCategorical variable: Reference group is less than high school educational attainment.

^bCategorical variable: Reference group is non-Hispanic White race/ethnicity.

^cCategorical variable: Reference group is not employed for pay.

* $p \leq .10$. ** $p \leq .05$. *** $p \leq .01$. **** $p \leq .001$ (one-tailed).

and caregiving among parent caregivers and noncaregivers. The interaction term of *Marital strain* × *Filial care* achieved statistical significance in M3 (Table 4, M3, $b = 3.00$, $p \leq .05$). The three-way interaction term of *Female* × *Marital strain* × *Filial care* did not achieve statistical significance (Table 4, M4, $b = -.94$, n.s.). Therefore, we graphed and interpreted results from M3. Figure 3 illustrates that filial caregivers who were experiencing high strain from their spouses reported higher levels of physical health symptoms than noncaregivers who were experiencing high strain from their spouses, whereas

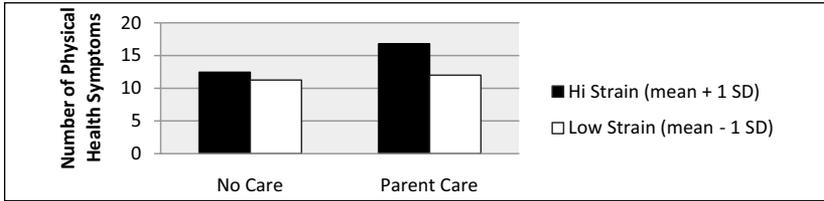


Figure 3. Predicted scores of physical symptoms for filial caregivers and noncaregivers who reported experiencing either higher strain or lower strain with their spouses.

filial caregivers who reported experiencing low strain from their spouses reported relatively similar levels of physical health symptoms to noncaregivers experiencing low marital strain.

In sum, findings initially indicated a main effect linking the provision of parent care to higher levels of physical health symptoms for both men and women. But moderator analysis further revealed that while higher levels marital strain among filial caregivers exacerbated the negative health impact of caregiving for a parent on physical health in terms of number and frequency of physical symptoms, experiencing low levels of marital strain while a filial caregiver buffered most of the negative impact of filial care on physical symptoms.

Filial Caregiving, Gender, Marital Strain, and Reported Physical Chronic Conditions

Results from models evaluating differences in reported chronic conditions among married parent caregivers and married noncaregivers are provided in Table 5, M1 through M4. No global main effect of filial caregiving was found in M1 (Table 5, M1, $b = .19$, n.s.), although main effects were in evidence for being female (Table 5, M1, $b = .32$, $p \leq .05$) and for marital strain (Table 5, M1, $b = .32$, $p \leq .05$). No subgroup difference by gender was found in the linkage between reported chronic conditions and caregiving among parent caregivers and noncaregivers (Table 5, M2, $b = .29$, n.s.).

Nonetheless, in additional analyses regarding moderation by marital strain, subgroup differences by marital strain were revealed in the linkages between filial care and chronic conditions in M3 (Table 5, M3, $b = 1.34$, $p \leq .05$). The three-way interaction term of *Female* \times *Marital strain* \times *Filial care* did not achieve statistical significance in M4 for parent caregivers (Table 5, M4, $b = .37$, n.s.); therefore, we graphed the results from M3 to better

Table 5. Estimated Unstandardized Regression Coefficients for the Associations Between Filial Care, Gender, Marital Strain, and Number of Physical Chronic Conditions.

	Models			
	M1	M2	M3	M4
Female	.32*	.31*	.31*	.30*
Marital Strain	.32*	.33*	.27*	.33*
No Caregiving (omitted)	—	—	—	—
Filial Care	.19	.01	-.07	-.06
Female × Filial Care		.29		.52
Marital Strain × Filial Care			1.34*	1.15
Female × Marital Strain				-.11
Female × Strain × Filial Care				.37
Marital Support	.20	.20	.17	.16
Age	.04***	.04***	.04***	.04***
Income	-.00 ⁺	-.00 ⁺	-.00 ⁺	-.00 ⁺
High School Graduate ^a	-.69*	-.69*	-.66*	-.66*
Some College ^a	-.58*	-.58*	-.56*	-.57*
BA or more ^a	-1.05***	-1.05***	-1.03***	-1.04***
Black ^b	-.07	-.07	-.05	-.04
Other Race/Ethnicity ^b	-.43 ⁺	-.43 ⁺	-.47 ⁺	-.47 ⁺
Parental Status (Parent = 1)	-.39 ⁺	-.39 ⁺	-.40 ⁺	-.40 ⁺
Employed Part-Time ^c	-.70***	-.70***	-.69***	-.69***
Employed Full-Time ^c	-.87***	-.87***	-.86***	-.87***
Constant	2.19	2.20	2.17	2.17
R ²	.13	.13	.13	.13

Note. $N = 1,060$.

^aCategorical variable: Reference group is less than high school educational attainment.

^bCategorical variable: Reference group is non-Hispanic White race/ethnicity.

^cCategorical variable: reference group is not employed for pay.

* $p \leq .10$; ** $p \leq .05$; *** $p \leq .01$. **** $p \leq .001$ (one-tailed).

interpret associations. Figure 4 illustrates that parent caregivers who were reporting high strain from their spouses reported more chronic conditions than noncaregivers who were reporting high strain from their spouses. In contrast, parent caregivers who were reporting low marital strain reported fewer chronic conditions than noncaregivers who were reporting low marital strain.

In sum, although there was no initial evidence of a main effect of parent caregiving on number of chronic conditions, and there was no evidence of a

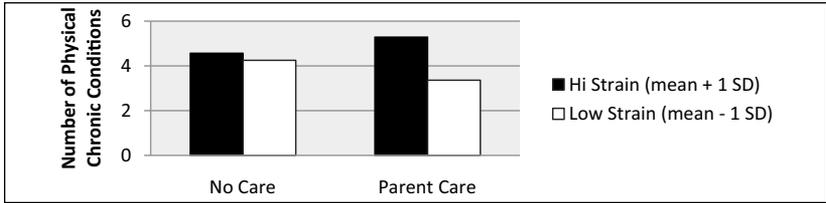


Figure 4. Predicted scores of physical chronic conditions for filial caregivers and noncaregivers who reported experiencing either higher strain or lower strain from their spouses.

gender difference in the effect of parent caregiving on chronic conditions, our results evaluating marital strain as a moderator indicated that filial caregivers experiencing high levels marital strain reported a greater number of chronic conditions than their noncaregiving peers, whereas filial caregivers experiencing low levels of marital strain were not at a similar physical health risk.

Discussion

Guided by a life course perspective, this study used evidence from a national sample of U.S. adults to investigate whether filial caregiving is linked to physical health risks for married caregivers, as well as to evaluate whether gender and marital strain moderate these health risks. Overall, inconsistent with our main effects hypothesis, but consistent with some other studies (e.g., Lawton et al., 2000; Marks et al., 2008; Seltzer & Li, 2000; Strawbridge et al., 1997), our findings did not indicate that filial care is a physical health risk for all married caregivers.

There are several reasons that might have contributed to this result. First, our sample includes a very heterogeneous group of filial caregivers. Although our caregiving measure specifies providing personal care for 1 month or more in the past 12 months, the measure does not take into account the actual intensity of care, how long the caregiving has been going on, the reason for the care, or how much social support was available to the caregiver. All these factors might be additional moderators of caregivers' health risk (Pinquart & Sorensen, 2003, 2006, 2007), and may lead to a mixture of types of filial caregiving—some of which may be a risk to health, and some not.

Another factor of heterogeneity occurs in our *noncaregiver* group that may blur health differences; specifically, some adult children who live at a distance may also feel additional distress leading to greater health risk for them due to having a parent with needs for caregiving, even when they are not directly a caregiver for that parent (Amirkhanyan & Wolf, 2003, 2006).

Similarly, regarding our second hypothesis about gender, we did not find robust evidence that married women suffered more health risk when providing care to a parent than married men. Although Pinquart and Sorensen (2003, 2006) have done reviews of the research that have indicated gender differences in health among caregivers, they have also found evidence that gender differences are smaller in physical health than mental health outcomes (Pinquart & Sorensen 2003), and they have speculated that gender differences in health may be diminishing among younger cohorts of persons due to more similar gender roles in contemporary society (Pinquart & Sorensen, 2006). Controlling for a number of caregiver resources and supports, Pinquart and Sorensen (2006) still found small gender differences in health among caregivers in their formal meta-analysis of studies, but these became similar to gender differences in health in the noncaregiving population. They speculated that additional resource differences between men and women that they did *not* adjust for may have also led to these remaining differences. In this study, we *did* adjust for a number of additional factors that can differ between men and women (e.g., household income) and that are associated with health, and this might have also influenced our finding of no robust gender differences among caregivers.

It also may be that some of the factors that have been hypothesized to make men more vulnerable to health risks in caregiving (Kramer, 2001) are balancing out the additional stressors of caregiving typically observed for women (Pinquart & Sorensen, 2006). Our relatively smaller sample of men filial caregivers in this study may have also reduced our power to find gender differences. Additional examination of gender differences in filial care is needed to understand this issue more conclusively.

Nonetheless, we *did* find new, important, and consistent evidence that for married adults, marital role quality—specifically, levels of marital strain—are an important factor in conditioning the linkage between providing care to a parent and physical health. In the presence of higher levels of marital strain, filial caregiving was linked to poorer self-rated health, higher levels of functional limitations, greater number and frequency of physical symptoms, and a higher number of reported chronic conditions. In the presence of low levels of marital strain, almost all the potential health risk of filial caregiving was found to be mitigated, and in some cases, filial caregivers demonstrated even better health than noncaregivers.

Our results regarding the importance of marital strain as a moderator factor in caregiving outcomes are consistent with results from two previous national studies that have demonstrated that negative marital quality (higher levels of disagreement) is linked with poorer *mental* health outcomes among caregivers (Choi & Marks, 2006; Voydanoff & Donnelly, 1999). They also

provide additional research evidence demonstrating the importance of marital quality—particularly, negative marital quality—in helping determine physical health for both men and women (Bookwala, 2005; Choi & Marks, 2008; Hawkins & Booth, 2005; Umberson et al., 2006; Williams & Umberson, 2004).

Our results also provide additional support for taking a life course perspective on caregiving, which emphasizes heterogeneity in experience of roles, which can moderate the developmental (including health) impacts of different roles. We did not find gender to be an important moderator of health risk in our married sample. But we did find strong evidence that the subjective experience of marital strain in the important primary role of marital partner is a critical factor in determining whether an “added on” role like filial caregiving can be brought into one’s adult role repertoire with physical health risks or not.

Despite this study’s conceptual and methodological strengths, limitations need to be acknowledged. Due to the lack of measurement of caregiving at T1 in MIDUS, we needed to conduct a cross-sectional analysis here, even though the data set is longitudinal. Thus, to some extent our imputations of causality must be considered tenuous. As noted previously, an even larger sample of filial caregivers would have also increased the statistical power of our study to find potentially significant linkages between filial caregiving, gender, and health. We also note that we examined only self-report measures of health; additional assessment of biological outcomes would be valuable as well.

Notwithstanding these limitations, findings from this study, which document consistent linkages between providing filial caregiving and poorer physical health in the presence of high marital strain among married caregivers, provide additional empirical support for the public health importance of enacting policies and practices supportive of caregivers (Gitlin & Schulz, 2012). The good news from this study is that in our aging society where more and more adults may be expected to provide filial care at some point or another during their life course, filial caregiving does not always entail a major health risk for married adults. Yet our results also suggest that having access to a marital partner in and of itself does not always mitigate filial caregiving’s risk to health. Marital quality—especially negative marital quality such as marital strain—is a critical factor among married caregivers in determining whether filial caregiving is likely to contribute to increased health risk or not.

Programs and policies designed to support filial caregivers should add or increase attention to taking into account a caregiver’s reports of marital strains and support, and provide counseling and support, as needed, to help

caregivers navigate the potential complexity of integrating filial caregiving with a marital relationship. Additional education regarding how to provide optimal partner support to a caregiving partner needs to become more routine practice in all marital/partner enrichment and enhancement programs. Addressing marital quality issues among filial caregivers is a valuable pathway to reducing the public health risk of filial caregiving.

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