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Daily Associations Between Caregiving Time and Spousal Caregivers' Well-Being: The Moderating Roles of Daily Marital Interactions

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ABSTRACT

Objectives: *With more individuals providing informal care, understanding the impacts of this role is crucial. The literature on the well-being of informal caregivers is divided, with some studies reporting primarily harmful effects and others concluding that caregiving is fundamentally beneficial. We examined how everyday positive and negative marital interactions moderated the association between spousal caregiving time and caregiver affect in both within and between-person processes, aiming to clarify mechanisms behind the varied outcomes observed in caregiver well-being.* ***Methods:*** *As part of the Midlife in the United States (MIDUS) study, 212 spousal caregivers participated in the National Study of Daily Experiences, an 8-day daily-diary study, providing 1634 days of data. Generalized linear mixed models examined the moderating role of daily interaction quality in associations between daily caregiving time and daily positive and negative affect. Covariates included caregiver health, sex, employment, minority status, education, and time spent caring for people besides a spouse.* ***Results:*** *Both daily marital strain and uplifts significantly moderated the relationship between daily caregiving time and negative affect by reducing the association between increased care time and negative affect. Negative affect was already elevated on strain days, regardless of caregiving time. Conversely, daily marital strain and uplifts did not significantly moderate the association between caregiving time and positive affect.* ***Conclusions:*** *Findings generally support the view that caregiving is*

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predominantly linked with psychological burden while highlighting the potential role of daily marital uplifts in buffering this association. (Am J Geriatr Psychiatry 2025; ■■:■■−■■)

Highlights

- **What is the primary question addressed by this study?**
  How do positive and negative marital interactions moderate the relationship between caregiving time and caregiver affect on a daily level?
- **What is the main finding of this study?**
  Daily marital uplifts (i.e., positive interactions with the spousal care recipient) buffered the positive association between daily spousal caregiving time and negative affect.
- **What is the meaning of the finding?**
  These findings emphasize the potential role of positive daily interactions in reducing spousal caregiver burden.

OBJECTIVE

One in five Americans provides unpaid care to an adult with functional limitations.[1] These informal caregivers are essential to the U.S. healthcare system, acting as case managers, medical record keepers, paramedics, and patient advocates.[2] As the world's population continues to age, demand for informal care will increase.[3] The literature is mixed on whether caregiving is harmful or beneficial for caregivers, and the aspects of the caregiving relationship that contribute to caregiver well-being are not fully understood. The present study aims to understand the emotions of spousal caregivers as they provide care day-to-day, and how caregiver and care recipient (CR) interactions, both positive and negative, may contribute to this pattern.

Numerous studies suggest that caregivers experience harm from caregiving. According to an 84-study meta-analysis, caregivers experienced more depression and stress, as well as lower subjective well-being, than noncaregivers.[4] In a large sample of married couples from the Health and Retirement Study, providing care to a spouse predicted the onset of depressive symptoms over five years.[5] More time spent caregiving has been associated with greater caregiver depression, stress, and lower ratings of subjective well-being.[6] Among nearly 1000 caregiving wives, more hours of care predicted higher depressive and anxious symptoms at 4-year follow-up.[7]

Though many studies have reported the harms of caregiving, others underscore its benefits. A 41-study review found that family caregiving can enhance feelings of personal accomplishment and gratification, as well as foster closeness.[8] The authors theorize that affirmation of successfully fulfilling a helping role contributes to the positive aspects of caregiving. For example, using problem-solving skills during caregiving tasks may boost feelings of self-efficacy. Further, caregivers can experience benefits when they find meaning in their role by living out their family values or a spiritual purpose. Meaning-finding is also enhanced when caregivers report fulfilling this role out of love and not extrinsic motivation.[8] In a study of dementia caregivers, those who spent more time caregiving to high-need CRs reported more uplifts, such as enjoying time with, and receiving affection from the CR.[9] A 60-study meta-analysis found that experiencing uplifts related to caregiving was associated with higher subjective well-being and positive affect.[10]

Research on informal caregiving largely focuses on caregivers' negative experiences, and there is relatively little on positive affect (PA). Literature on PA may be lacking due to a general perception that caregiving is mostly negative, and caregiving studies may have over-represented the most burdened caregivers.[4] Among large population-based samples, only

half of spousal caregivers report experiencing role-related strain.[11] Caregivers likely experience positive and negative consequences of caregiving, and both processes should be captured simultaneously to tease apart their unique contributions. Furthermore, the quality of the caregiver-CR relationship may contribute to variability in the impacts of caregiving. Spousal caregivers experience more fluctuation in day-to-day NA than nonspousal caregivers,[12] and marital interactions may explain some of this variability. In samples of heart failure caregivers, better relationship quality between caregiver and CR was associated with lower caregiver burden[13] and more caregiver benefit finding.[14] Marital uplifts are interactions with a spouse that make a person feel joyful, glad, or satisfied, such as sharing a laugh, showing affection, and providing support. These uplifts are thought to replenish one's psychological resources[15] and may be associated with more caregiver benefit finding and buffer burden. Marital interactions throughout the day, whether positive or negative, may exacerbate or buffer the effects of caregiving. Analyzing the quality of marital interactions between the caregiver and CR may help reconcile the competing burden and benefit hypotheses of caregiving. Few studies have examined positive and negative interactions among spousal caregivers on a daily basis. In a daily diary study of 30 spousal caregivers, NA increased on days they had unpleasant interactions with their spouse, and PA was higher on days with more marital uplifts and no cutbacks on scheduled activities.[16] Caregiver-CR conflicts and tension may exacerbate the negative effects of time spent caregiving, while uplifts may buffer these effects and enhance the positive aspects of caregiving. This study aimed to explore the association between caregiving time and affect on a daily level by investigating the nature of caregiver-CR interactions as a moderator of this association.

Utilizing a sample of spousal caregivers who participated in the Midlife in the United States (MIDUS) project, we hypothesized that daily marital strain and uplifts would moderate the associations between caregiving time and affect. Specifically, on days with marital strain, caregiving time was expected to be more strongly associated with increased NA and reduced PA. Daily marital uplifts were hypothesized to buffer the association between caregiving time and NA and accentuate the positive association between caregiving time and PA.

METHODS

Sample

Data were drawn from MIDUS (Waves 2, 3, and Refresher 1) and the National Survey of Daily Experiences II (NSDE II), the daily diary component of MIDUS, which used an observational, correlational design. For 8 days, participants were asked via phone, "Since this time yesterday, did you spend any time providing assistance to someone who has a disability, health problem, or other special needs?" 227 participants reported they provided care to their spouse on at least one day during the study. Among this group, 14 participants provided care in both MIDUS 2 and 3 waves. For these participants, only MIDUS 2 data were included in the statistical analysis to avoid a partially nested design where some participants contribute data across multiple waves while others contribute data only from a single wave. Two participants were excluded because they endorsed caregiving but reported 0 minutes of caregiving time on all days, and 13 participants were excluded because they missed half or more of the daily data collection phone calls. 81% of participants had the full eight days of data, 12% missed one call, and 7% missed two to four calls, for a total of 55 missed days of calls out of 1696 days. Independent-samples *t*-tests and chi-square tests indicated that those who missed two or more calls and those who missed fewer calls did not differ based on age, sex, minority status, employment, education, proportion of uplift/strain days, or average care time. The remaining sample included 212 participants (53.77% women, M_{age} = 64.12, SD = 10.79) and 1,634 total days of data, excluding 55 days of missed calls. Table 1 shows descriptive statistics for the spousal caregiving sample. On average, each caregiving participant endorsed 3.52 days of spousal caregiving (SD = 2.71), with a total of 746 days of providing care only to a spouse.

Measures

Daily spousal caregiving time. Each night, caregivers indicated whom they cared for and for how long. To keep the interpretation of the caregiving time variable clear, days involving care to others in addition to a

TABLE 1. Descriptive Statistics

Variables	N = 212
Sex	
Men	98
Women	114
Minority status	
White non-Hispanic	172
Minority	40
Education	
Less than high school	5
High school or GED	114
Bachelor's degree	59
Graduate degree	33
Employment status	
Working	69
Not working	143
	M ± SD (range)
Age	64.12 ± 10.79 (32–86)
Daily physical symptom count	2.37 ± 2.61 (0–22)
Average daily negative affect	.24 ± .38 (0–3.54)
Average daily positive affect	2.66 ± .80 (0–4.00)
Daily spousal care time (minutes)	68.86 ± 160.79 (0–1440)
Daily spousal care time on days providing care (minutes)	157.00 ± 212.45 (2–1440)
Average daily spousal care time (minutes)	73.68 ± 146.13 (.88–1220)
Proportion of days with uplifts	.13 ± .19 (0–1)
Proportion of days with strain	.15 ± .19 (0–1)
Proportion of days caring for others	.08 ± .18 (0–.88)

spouse were excluded (27 instances), leading to the removal of 4 caregivers who never reported spouse-only care.

Daily affect. Participants reported how much of the day they felt each emotion (see Text, Supplemental Digital Content 1, which describes items) on a scale of 0 (None of the Time) to 4 (All of the Time). Separate sum scores were estimated for NA and PA by creating an average of the available items and multiplying by the total number of items. No participant missed more than two NA or PA questions on any given day. Because NA scores were zero-saturated and modeled using a generalized linear mixed model (GLMM) with Poisson distribution, the estimated sum scores were rounded to the nearest integer to fit model assumptions. Generalizability coefficients were calculated for each. The 11 PA items (Rc = .84 and R_{1f} = .93) and 14 NA items (Rc = .87 and R_{1f} = .85) captured within-person change and between-person differences reliably.

Marital strain and uplifts. Daily marital strain was assessed with the questions "Did you have an argument or disagreement with anyone since (this time/we spoke) yesterday?" and "Since (this time/we spoke) yesterday, did anything happen that you could have argued about but you decided to let pass in order to avoid a disagreement?" Arguments and avoided arguments are often combined in the literature to represent marital strain.[17–19] Separately, daily marital uplifts were assessed with: "Did you have an interaction with someone that most people would consider particularly positive (for example, sharing a good laugh with someone, or having a good conversation) since (this time/we spoke) yesterday?" This question has been used to measure uplifts[20] and it is common for daily diary studies to use one question to measure positive social interaction.[21] Only interactions with the spouse were included and coded dichotomously.

Covariates. Models controlled for caregivers' daily physical symptoms, caregiver age, care days for someone other than spouse, gender, employment status, minority status, education, and percentage of days with marital strain or uplifts.

Data Analysis Plan: Statistical analyses were conducted using SPSS version 28. The study was preregistered on OSF (https://osf.io/ys562).

A GLMM with an identity covariance structure and a random intercept was used to test whether marital interactions moderated the association between time spent caregiving and NA. Both daily strain and daily uplifts (level-1), and percentage of uplift days and percentage of strain days (level-2) were simultaneously tested in the model as moderators. A Poisson distribution with log link was selected because NA scores were zero-inflated and positively skewed (see Table, Supplemental Digital Content 2, which describes residual diagnostics). Several covariates exhibited positive skew, including daily spousal care time, mean spousal care time, physical symptoms, percentage of days caring for someone other than a spouse, percentage of days with uplifts, and percentage of days with strain. These variables were log- transformed to address skew. Daily care time was person-mean centered by subtracting each day's care time from a person's average caregiving time over the 8 days, to test changes in affect when a person spent more time caregiving than usual. Daily strain was also person-mean-centered by multiplying the dichotomous variable by 100 and subtracting each day's strain score

TABLE 2. Correlations Among Primary Study Variables (n = 212)

	1	2	3	4	5	6	7	8	9
1. Daily negative affect	—								
2. Daily positive affect	-.513[a]	—							
3. Daily spousal care time	.097[a]	-.121[a]	—						
4. Proportion of days with uplifts	.042	.026	.095[a]	—					
5. Proportion of days with strain	.185[a]	-.133[a]	.078	.042	—				
6. Average spousal care time	.108[a]	-.131[a]	.832[a]	.113	.101	—			
7. Proportion of days caring for others	.277[a]	-.099[a]	-.052	-.034	-.035	-.062	—		
8. Physical symptom count	.474[a]	-.319[a]	-.066	.050	.085[a]	.082[a]	.244[a]	—	
9. Age	-.177[a]	.184[a]	.071	-.089	-.036	.091[a]	-.212	-.144[a]	—

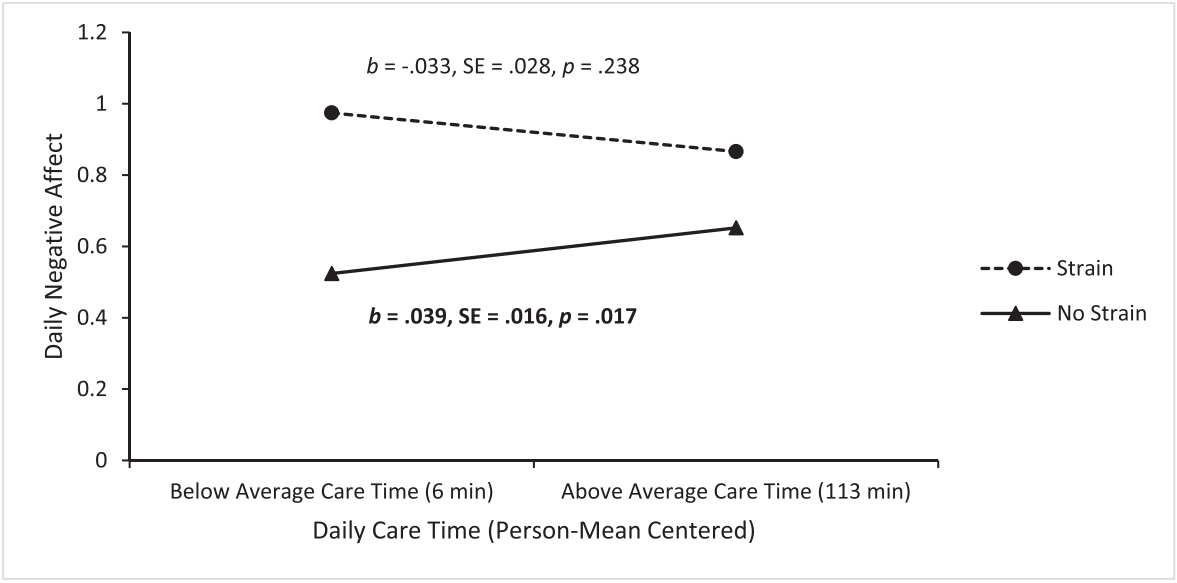
Notes. 212 participants with 1634 total days of data. Pearson correlations (two-tailed). Only continuous variables are included.
[a] $p < 0.001$.

from a person's percentage of days with strain. The same was done for the uplift variable.

In the second model, with PA as the outcome variable, GLMM with normal distribution, identity link, and unstructured covariance was used, as PA was not zero-inflated. All predictors in the model remained the same. Follow-up sensitivity analyses examined strain and uplifts separately to see if patterns would hold.

Statistical Power Considerations. An a priori power analysis was conducted using the MLM program Power in Two-Level Models (PinT v2.12). Intra-class correlations for NA and PA across the 8 days were .55 and .76, respectively.[22] For parameters where there

FIGURE 1. ***Conflict effect between daily care time and daily negative affect.*** **A GLMM using a Poisson distribution with a log link function and random intercept examined associations of daily care time with daily negative affect on days with and without daily marital strain. Parameter estimates (*b*), standard errors (*SE*), and p-values are provided for each slope. Estimates in boldface are significant ($p < 0.05$). Marital strain significantly moderated the association between daily spousal care time and negative affect, *b* = -0.001, *SE* = 0.0004, 95% *CI* [-0.002, 0.000], *t*(1568) = -2.45. p = 0.014. On days with no marital strain, increased caregiving time predicted increased negative affect. This association was null on days with marital strain.**



was limited *a priori* information from the literature, a range of possible parameters was tested. N = 226 participants and 8 days of data provide 80% power to detect a very small effect for the cross-level interaction (Cohen's d = .02-.04). The study is likely sufficiently powered to detect similarly small effects for a level-1 interaction.

RESULTS

Bivariate correlations among main study variables are shown in Table 2. As expected, daily PA and NA were inversely correlated. Both daily spousal care time and overall spousal care time were positively correlated with daily NA and negatively correlated with daily PA. Proportions of days with strain were also positively correlated with daily NA and negatively correlated with daily PA, although proportions of days with uplifts were not significantly correlated with daily affect.

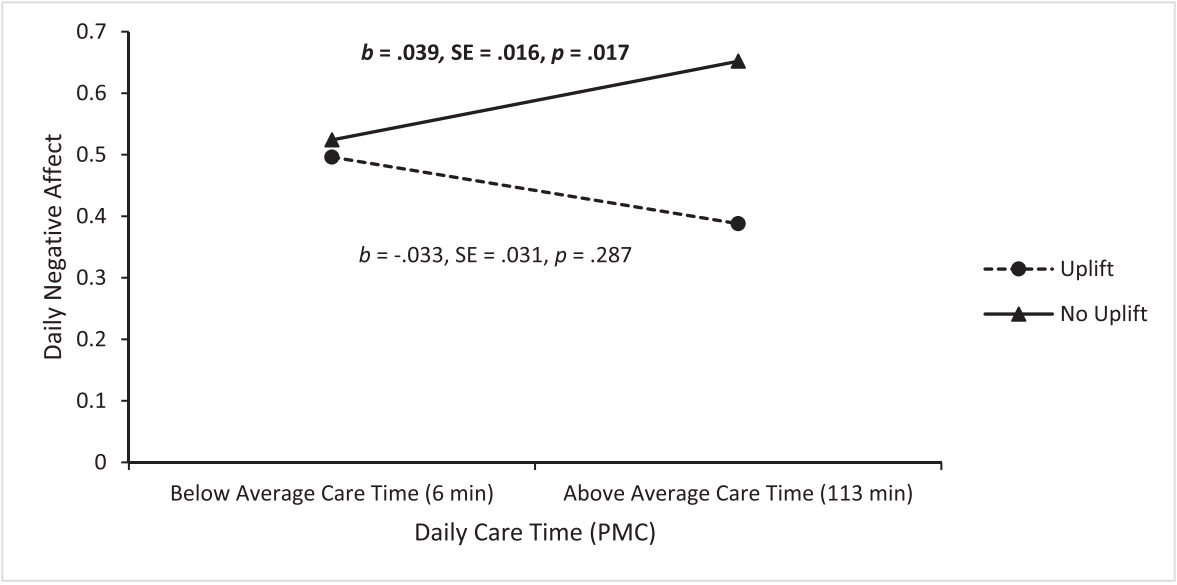
Daily Caregiving Time Moderated by Daily Marital Strain and Uplifts

Negative affect

Marital strain significantly moderated the association between daily spousal care time and daily NA, b = -0.001, SE = 0.0004, 95% CI [-0.002, 0.000], $t(1568)$ = -2.45, p = 0.014 (see Fig. 1). That is, on days with below-average strain, increased care time was significantly associated with increased NA (b = 0.050, SE = 0.019, 95% CI [0.012, 0.088], p = 0.009), while the link was not significant on days with above-average strain (b = -0.009, SE = 0.016, 95% CI [-0.041, 0.022], p = 0.573). On days with less strain, a one-minute increase in caregiving time was associated with a 5% increase in daily NA, holding all other variables constant. On days with more strain, this link was not significant.

Marital uplifts significantly moderated the association between daily spousal care time and NA, b = -0.001, SE = 0.0005, 95% CI [-0.002, 0.000], $t(1568)$ = -2.22, p = 0.026. (Fig. 2). That is, on days with below-average uplifts, increased care time was significantly associated

FIGURE 2. ***Uplift effect between daily care time and daily negative affect.*** **A GLMM using a Poisson distribution with a log link function and random intercept examined associations of daily care time with daily negative affect on days with and without daily marital uplifts. Parameter estimates (*b*), standard errors (*SE*), and p-values are provided for each slope. Estimates in boldface are significant (p < 0.05). Marital uplifts significantly moderated the association between daily spousal care time and negative affect, *b* = -0.001, *SE* = 0.0005, 95% *CI* [-0.002, 0.000], *t*(1568) = -2.22, p = 0.026. On days with no marital uplifts, increased caregiving time predicted increased negative affect. This association was null on days with marital uplifts.**



with increased NA (b = 0.051, SE = 0.021, 95% CI [0.011, 0.092], p = 0.013), while the link was not significant on days above their average uplifts (b = -0.010, SE = 0.017, 95% CI [-0.044, 0.023], p = 0.549). On days with fewer uplifts, a one-minute increase in caregiving time was associated with a 5% increase in daily NA, holding all other variables constant. On days with more uplifts, this link was not significant.

Positive affect

Marital strain did not significantly moderate the association between daily spousal care time and daily PA (b = 0.000, SE = 0.0002, p = 0.552), and neither did uplifts (b = 0.000, SE = 0.0002, p = 0.183).

Secondary Analyses

At the between-person level, the proportion of days with marital strain or uplifts did not significantly moderate the association between average spousal care time and daily NA (bs < .016, SE > 0.026, ps > .56) or PA ($|b|$s < .022, SE > 0.016, ps > .18).

For all outcomes, results remained consistent in follow-up analyses when marital strain and uplifts were tested separately as moderators, and the pattern of interactions remained unchanged.

CONCLUSION

We investigated how positive and negative daily marital interactions moderate the relationship between daily spousal care time and affect in a national sample of midlife Americans. Findings point to daily marital uplifts as protective against the links between increased caregiving time and poor everyday well-being. Specifically, daily uplifts buffered the positive association between caregiving time and NA, and on days caregivers had marital strain, they had high NA regardless of their caregiving time. Meanwhile, daily strain and uplifts did not significantly moderate the association between daily caregiving time and daily PA. At the between-person level, the proportion of days a caregiver experienced marital strain or uplifts did not moderate the association between care and affect. We did not find support that the benefit hypothesis of caregiving extends to daily affect, as neither daily caregiving time nor total caregiving time was associated with better mood, even when marital uplifts were present. On the contrary, these findings align with the caregiving literature that suggests when people spend more time caregiving, they experience lower well-being.[6,7] This study is the first to provide evidence that uplifts may buffer these associations in daily life.

Within-Person Associations

The primary aim was to analyze how daily marital strains and uplifts moderate the association between daily caregiving time and daily affect. Examining these questions using a within-person approach controls for between-person confounds, allowing for a clearer understanding of the dynamic processes linking caregiving time and caregiving relationships to caregivers' everyday well-being. It was hypothesized that marital strain would exacerbate the adverse association between caregiving time and NA, and marital uplifts would attenuate the risk. These hypotheses were partially supported. Marital strain significantly moderated the association between daily spousal care time and daily NA, but not as predicted. Instead, NA was already elevated on strain days, regardless of caregiving time, which may contribute to why caregiving time was not associated with NA on days with strain but was on days without strain. In contrast, marital uplifts did indeed buffer the association between increased caregiving time and heightened NA. On days when a caregiver provided more care than usual, those who experienced a marital uplift did not report increased NA, while those without a marital uplift did.

Contrary to predictions, the association between caregiving time and PA was not moderated by marital uplifts or strain. PA may not be sensitive to daily caregiving stressors and marital interactions. A daily diary study of nearly 300 adults revealed that daily stressors were associated with changes in NA but not PA.[23] NA may be reactive to marital strain and uplifts, while changes in PA may depend on more sustained relationship quality or strains and uplifts of larger magnitudes.

In sum, the primary analyses showed that caregivers experienced increases in NA on days they provided more care, but this association was mitigated by marital uplifts. Marital strain did not exacerbate the links between caregiving and worsened daily

affect, possibly because it was already tied to increased NA and overshadowed any additional effect of care time.

Between-Person Associations

A secondary analysis explored between-person moderation of strain and uplifts to examine differences in affect between individuals who provided more versus less care and had better versus worse marital interactions. Most literature on caregiver outcomes consists of between-person studies, but this work is the first to consider marital interactions as a moderator. Contrary to predictions, the association between overall care time and affect was not moderated by uplift or strain days. The differential moderation by marital uplifts at the within-person level, but not at the between-person level, suggests that daily marital uplifts could provide temporary relief from caregiving's negative impacts, but may not be sufficient to buffer the overall strain experienced by caregivers who provide extensive care. Similarly, overall strain may not have amplified this link because caregiving itself already imposes a considerable burden on daily well-being.

Implications for the Informal Caregiving Literature

The results support prior findings that higher-intensity caregivers have increased emotional burden[6] and depressive symptoms.[24] Daily increases in NA in response to stressors can accumulate over time, and in the same daily-diary data as the present study, lingering NA after a stressor has been associated with worsened health years later.[25] These results also align with conclusions from a review of dementia caregiving studies that better relationship quality predicts better caregiver well-being, such as lower depressive symptoms.[26] Similarly, in studies of spinal cord injury[27] and late-stage cancer caregivers,[28] caregivers who rated their relationship quality as high reported less caregiving burden. High-quality close relationships and social connection are associated with decreased risk for all-cause mortality and other disease morbidities.[29] These findings emphasize the value of interventions that extend beyond directly targeting caregiver burden and instead or additionally promote uplifts. For example, dyadic coping interventions that target how couples respond to stressors jointly have been shown to improve marital satisfaction, mental health, and positive well-being of caregivers.[30-32]

This study differs from prior literature in how care time was collected. Participants reported every day for 8 days, rather than estimating weekly or monthly care time retrospectively.[5,33,34] Daily sampling leads to more accurate recall and reporting, as caregivers tend to retrospectively overestimate the amount of time they spend providing care.[35] This study utilized a population-based sample, while studies that specifically recruit caregivers may overrepresent distressed caregivers.[4,11] Caregivers in this sample provided just over an hour of daily care, averaging 9 hours over the 8-day period, which is less than in most prior studies using retrospective reports. A 176-study meta-analysis on informal caregiving and physical health reported a caregiving average of 55 hours per week[36] and another 60-study meta-analysis yielded a weekly caregiving average of 25 hours.[37] Most, if not all studies in these meta-analyses relied on retrospective caregiving reports. A few studies reported average care times similar to the current study. A Dutch sample of spousal caregivers reported 15 hours a week of caregiving[34] and a German sample categorized 10 or more hours of weekly care as "high caregiving load".[24] The large range of care times reported in the literature makes comparisons across studies difficult, even when comparing the same caregiving relationships (e.g., spousal), health conditions (e.g., dementia), and outcomes (e.g., affect). The current study did not have a caregiving time requirement for inclusion, and there was a large range of care time provided, from less than an hour to nearly 24/7 care, but despite the relatively low average amount of time spent caregiving, the emotional burdens of caregivers are still evident.

Though participants provided daily reports, it is not possible to ascertain the temporal order—whether uplifts, strain, and caregiving preceded changes in affect. This, and the cross-sectional nature of between-person data, limit drawing causal conclusions about the relationships. Future research should incorporate longitudinal designs to examine the role of relationship quality in caregiving relationships over time, and ecological momentary assessment studies that can establish the temporal precedence of caregiving, marital interactions, and daily affect.

Nevertheless, this study is the first to explore daily marital interactions in the context of caregiving and provides an argument to pursue this line of research further.

In sum, this study highlights the complex dynamics of informal spousal caregivers' daily well-being. By employing a within-person approach, we captured day-to-day fluctuations in caregivers' experiences and well-being. These findings are the first to emphasize the protective power of daily marital uplifts in buffering the association between increased caregiving time and worsened emotional well-being.

AUTHOR CONTRIBUTIONS

Iris S. Yang, M.A. (Graduate Student) contributed to the conceptualization, methodology, data curation, data analyses, interpretation of findings, manuscript writing, review, editing, and visualization. David Rosenfield, Ph.D. (Collaborator) contributed to the methodology, data analyses, and interpretation of findings. Holly J. Bowen, Ph.D. (Advisor) contributed to the conceptualization, review, and editing. Stephanie J. Wilson, Ph.D. (Advisor) contributed to and supervised the conceptualization, methodology, interpretation of findings, review, and editing.

DATA SHARING STATEMENT

This study used data from the Midlife in the United States (MIDUS) Study, which is accessible online through the National Archive of Computerized Data on Aging (NACDA) collection at the Inter-university Consortium for Political and Social Research (ICPSR).

DISCLOSURES

The authors have no disclosures to report.

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SUPPLEMENTARY MATERIALS

Supplementary material associated with this article can be found in the online version at https://doi.org/10.1016/j.jagp.2025.08.011.

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