Case Western Reserve University

Scholarly Commons @ Case Western Reserve University

Scholarly Commons @ Case Western Reserve University

Faculty Scholarship

12-14-2022

The Mediating Effect of Caregiving Relationship Quality on the Association Between Caregiving Stressors and Mental Health Problems Among Older Spousal Caregivers

Fei Wang
Case Western Reserve University, fxw125@case.edu

Elliane Irani
Case Western Reserve University, exi26@case.edu

Author(s) ORCID Identifier:

Fei Wang

Elliane Irani

Follow this and additional works at: https://commons.case.edu/facultyworks

Digital Commons Network Logo

Part of the Geriatric Nursing Commons

Recommended Citation

Wang F, Irani E, Tian MC, Yi Lau MM. The Mediating Effect of Caregiving Relationship Quality on the Association Between Caregiving Stressors and Mental Health Problems Among Older Spousal Caregivers. The International Journal of Aging and Human Development. 2023;97(4):435-455. doi:10.1177/00914150221143959

This Article is brought to you for free and open access by Scholarly Commons @ Case Western Reserve University. It has been accepted for inclusion in Faculty Scholarship by an authorized administrator of Scholarly Commons @ Case Western Reserve University. For more information, please contact digitalcommons@case.edu.

CWRU authors have made this work freely available. Please tell us how this access has benefited or impacted you!

The Mediating Effect of Caregiving Relationship Quality on the Association Between Caregiving Stressors and Mental Health Problems Among Older Spousal Caregivers

Fei Wang[1], MSW
fxw125@case.edu
ORCiD: 0000-0003-0860-6317

Elliane Irani[2], PhD, RN
Assistant Professor
elliane.irani@case.edu
ORCiD: 0000-0001-7381-3801

Michael Chao Tian[3], MSW
Michael_Tian_Chao@nuhs.edu.sg

Mandy Man Yi Lau[4], MSW
mandylau@link.cuhk.edu.hk

[1]Jack, Joseph and Morton Mandel School of Applied Social Sciences, Case Western Reserve University, Cleveland, OH, USA

[2]Frances Payne Bolton School of Nursing, Case Western Reserve University, Cleveland, OH, USA

[3]Jurong Community Hospital, Singapore

[4]Chinese University of Hong Kong, Hong Kong

Corresponding Author:
Fei Wang
Jack, Joseph and Morton Mandel School of Applied Social Sciences
Case Western Reserve University
11235 Bellflower Rd. Cleveland, OH 44106
Email: fxw125@case.edu
Phone: 503-780-0848

Abstract

Providing care to a spouse can be especially challenging for older adults given their compounding stressors resulting from aging and caregiving. This cross-sectional study examines the relationships between caregiving stressors and caregiver mental health problems and the potential mediator (i.e., caregiving relationship quality) of these associations. A total of 431 Americans (≥ 65 years) were selected from the National Study of Caregiving. Path analysis shows that care assistance was positively associated with caregiver mental health problems, and this association was mediated by negative relationship quality (Indirect effect = .14, $p = .016$). Moreover, role overload was positively associated with caregiver mental health problems, which was mediated by negative relationship quality (Indirect effect = .13, $p = .002$). Findings suggest that caregiving stressors can adversely affect mental health through exacerbating negative relationship quality. Interventions that limit negative exchanges and increase compassionate communications between older spousal caregivers and their care-receiving partners are needed.
Keywords: caregiving in late life, role overload, relationship quality, depression, anxiety

The older adult population in the United States is expected to expand rapidly in the next four decades—by 2060, nearly one in four Americans will be 65 years and older (Vespa et al., 2020). The growing aging population will likely increase the demands of care placed on their family caregivers, including their spouses who are aging and often develop chronic health conditions and functional limitations as they age. Caregiving can take a heavy toll on older spousal caregivers' mental health given their competing demands of caregiving and self-care (Wang et al., 2022). Moreover, older spousal caregivers may experience negative emotions that are detrimental to their mental health, such as feeling sad about the care-receiving partner's deteriorating health and worrying about the future (Lee & Zurlo, 2014). Given the adverse effects of caregiving on mental health among older spousal caregivers, it is imperative to examine the relationships between caregiving stressors and mental health problems as part of the efforts to reduce caregiving stressors and improve mental health for this population.

Spousal caregiving can represent a novel relationship stage (Meyer et al., 2021). As older spousal caregivers adapt to new roles and realities brought by disease processes, their relationship with the care-receiving partner may change. Research shows that providing care to a spouse can bring greater closeness in the relationship (McPherson et al., 2011) and yet result in relationship discord (Knobloch et al., 2019). Further, positive relationship quality may bolster older spousal caregivers' mental health (Monin et al., 2019), while negative relationship quality may diminish it (Kwak & Ingersoll-Dayton, 2020). These findings suggest that caregiving relationship quality could be a mediating mechanism that explains the associations between caregiving stressors and caregiver mental health. Previous research has identified that individual psychosocial factors can mediate the associations between caregiving stressors and mental health. For example, caregiving stressors can exert a negative impact on mental health through

reducing personal mastery, self-efficacy and resilience, as well as increasing activity restriction and avoidance coping (Mausbach et al., 2012; Mulud et al., 2017). Therefore, research on caregiving relationship quality as a psychosocial mechanism underlying the associations between caregiving stressors and mental health problems will have much to offer with respect to identifying the modifiable, relational factor that may mitigate mental health problems for older spousal caregivers.

According to the Stress Process Model (Pearlin et al., 1990), caregiving stressors, categorized as objective stressors (e.g., assistance with the care recipient's needs) and subjective stressors (e.g., caregiver role overload), can exert a direct effect on caregiver mental health problems. Moreover, caregiving stressors can affect caregiver mental health problems indirectly by intruding into different areas of the life of the caregiver (e.g., social relationships, finances, and employment) and creating secondary stressors in these areas (Pearlin et al., 1990). In other words, secondary stressors can mediate the associations between caregiving stressors and caregiver mental health problems. In this study, caregiving relationship quality can be seen as a secondary stressor that mediates the associations between caregiving stressors and caregiver mental health problems. Specifically, caregiving stressors can affect caregiver mental health problems through exacerbating negative relationship quality and/or decreasing positive relationship quality.

Guided by the Stress Process Model (Pearlin et al., 1990), this study aims to examine the relationships between caregiving stressors and caregiver mental health problems, as well as the mediating role of caregiving relationship quality in these associations in a nationally representative sample of older spousal caregivers. For the purpose of this paper, we define caregiving stressors as the circumstances and responses stem directly from the needs of older

spousal caregivers or their care-receiving partners during caregiving (Pearlin et al., 1990). Caregiver mental health problems refers to the psychological conditions of older spousal caregivers that can affect their mood, thinking, and behaviors (Pearlin et al., 1990).

Caregiving Stressors and Caregiver Mental Health Problems

Providing care to a spouse can introduce stressors that are detrimental to caregiver mental health. Studies show that caregiving responsibilities, such as the level of assistance with various tasks, is associated with the caregiver's depression (Duan & Chen, 2022; Kaufman et al., 2021). Moreover, role overload, a subjective caregiving stressor that represents the caregiver's negative appraisals of their responsibilities, is associated with depression and anxiety, and poorer psychological well-being (Nah et al., 2022). The negative effect of caregiving on mental health may be particularly pronounced for older spouses given their compounding stressors stemming from caregiving and aging. However, despite a large body of research on spousal caregiving, there are limited studies that examined the relationship between caregiving stressors and mental health problems in the older group of spousal caregivers. One exception is a study by Vara-Garcia et al. (2022), which demonstrates that role overload is associated with the negative affect of older spouses who provided care to a person with dementia. Given the specific focus on dementia caregivers of the aforementioned study, more investigations are needed to provide results that are generalizable to all older spousal caregivers.

Caregiving Stressors and Caregiving Relationship Quality

The relationship between older caregivers and their care-receiving partners can be complicated by various stressors, such as the partner's disability and the caregiver's feeling overloaded (Meyer et al., 2021). Older adults who provided care to a spouse with poorer functioning experienced higher levels of negative relationship with the spouse (Birditt et al.,

2015). Moreover, negative appraisals of the caregiver role (i.e., role overload) was associated with the negative relationship between older caregivers and their care-receiving partners (Polenick & DePasquale, 2019). Similarly, caregiving stressors can affect the positive aspect of caregiving relationship. For example, lower levels of functioning of the care recipient were associated were associated with decreased positive relationship quality (Shim et al., 2011). Caregivers who perceived their responsibilities to the care recipient was burdensome experienced lower levels of positive relationship with the care recipient (Buchanan & Huang, 2011).

Caregiving Relationship Quality and Mental Health Problems

Existing research in the context of late-life marriage suggests that the quality of a relationship with a spouse has a substantial impact on one's physical and mental health outcomes (Tucker et al., 2021). This impact may be particularly salient among older adults. As described in socioemotional selectivity theory (Ajrouch et al., 2001), older adults generally limit their social networks to family members with the closest emotional ties (e.g., spouses). Consequently, a negative relationship with a spouse can be extremely damaging to older adults' support system, leaving a persistent and detrimental effect on their mental health (Proulx et al., 2007).

Negative relationship quality was found as a risk factor for older spousal caregivers' mental health problems, such as depressive symptoms (Meyer et al., 2021). Similarly, Kwak and Ingersoll-Dayton (2020) established the detrimental effect of negative relationship quality on depressive symptoms for both older caregiving wives and husbands, with wives being more vulnerable to this effect compared to husband caregivers.

On the contrary, positive relationship quality contributes to older spousal caregivers' well-being. Research found that perceived helpfulness of companionship from the care-receiving

partner was associated with greater caregiver rewards for older spousal caregivers (Raschick & Ingersoll-Dayton, 2004). Positive relationship quality is particularly beneficial to caregiver mental health. For example, perceived support from a care-receiving partner was protective against depression among older spousal caregivers (Meyer et al., 2021). A greater relationship satisfaction perceived by older spousal caregivers has been also linked to fewer depressive symptoms (Monin et al., 2019; Williamson et al., 2001).

Collectively, the literature reviewed suggests that both objective and subjective indicators of caregiving stressors can exert negative impacts on caregiving relationship quality as well as caregiver mental health. Additionally, emerging evidence indicates that negative relationship quality is detrimental to mental health whereas positive relationship quality is protective against mental health problems among older spousal caregivers. Taken together, this body of literature suggests that positive and negative relationship qualities could potentially mediate the associations between caregiving stressors and mental health problems among older spousal caregivers. Therefore, it is imperative to specifically examine both relationship qualities as potential mediating mechanisms that can explain the associations between caregiving stressors and caregiver mental health problems.

Research Questions and Hypotheses

Using data on older spousal caregivers aged 65 years and older, we propose to address the following research questions:

1. Is care assistance associated with caregiver mental health problems?

2. Does positive relationship quality mediate the association between care assistance and mental health problems?

3. Does negative relationship quality mediate the association between care assistance and mental health problems?

As shown in Figure 1, we hypothesize that (1.1) higher levels of care assistance are associated with higher levels of mental health problems, (2.1) positive relationship quality mediates the association between care assistance and mental health problems, and (3.1) negative relationship quality mediates the association between care assistance and mental health problems.

4. Is caregiver role overload associated with caregiver mental health problems?

5. Does positive relationship quality mediate the association between caregiver role overload and mental health problems?

6. Does negative relationship quality mediate the association between caregiver role overload and mental health problems?

As shown in Figure 2, we hypothesize that (4.1) higher levels of role overload are associated with higher levels of mental health problems, (5.1) positive relationship quality mediates the association between caregiver role overload and mental health problems, and (6.1) negative relationship quality mediates the association between caregiver role overload and mental health problems.

The findings of the study will provide insight into the detrimental effects of caregiving stressors on caregiver mental health and inform interventions to mitigate these effects. Moreover, the investigation of the mediating roles of positive relationship quality and negative relationship quality will help identify potential targets for future interventions to improve mental health outcomes for this particularly vulnerable caregiving subgroup.

Methods

Sample

This study used a cross-sectional research design. Data were drawn from the 2017 National Study of Caregiving (NSOC), which included caregivers of participants in the 2017 National Health Aging Trend Study (NHATS)—a nationally representative study of Medicare enrollees ages 65 and older.

A two-stage screening process was conducted to identify eligible participants for the NSOC study. At Stage 1, Sample Persons were selected from NHATS if they were receiving help with mobility activities, self-care activities or household activities for health or functioning related reasons in the last month. Then, eligible Sample Persons were asked to identify all caregivers who assisted them with any of the above-mentioned activities. At Stage 2, caregivers who met the following criteria were eligible to participate the NSOC study: (1) providing assistance to an eligible NHATS Sample Person with mobility activities, self-care activities or household activities, or other activities (e.g., physician visits) and (2) either related to the Sample Person whether paid or not, or unrelated to the Sample Person and not paid to help. The details of the screening process were described in NSOC I-III User Guide Version 5.0 (Freedman et al., 2019).

Eligible NSOC participants completed a 30-minute telephone interview and provided information on various subjects, such as care activities, duration and intensity of help, effects of caregiving on caregivers, and basic demographic information. The current analysis focuses on a subset of NSOC participants ages 65 and older, who are spouses and provided care last month to a living NHATS Sample Person (base sample: $N = 431$). The final sample consisted of 323 participants who had valid data on variables in Model 1 and 319 participants in Model 2. For Model 1, we compared the sample with no missing data ($N = 323$) and the sample with any

missing data (N = 108) on each focal variable and covariate using chi-squared or independent t-tests. The results show no significant differences in each study variable between the two samples. We followed the same procedure for Model 2 and did not identify any significant differences in study variables between the sample with no missing data (N = 319) and the sample with any missing data (N = 112).

Measures

Caregiver Mental Health Problems

Caregiver mental health problems was measured using the 4-item Patient Health Questionnaire (PHQ-4; Kroenke et al., 2009)—a commonly used screening tool for mental health problems. Two of the items are screening instruments for generalized anxiety disorders (i.e., felt nervous, unable to stop worrying) and the other two items are used to assess major depressive disorders (i.e., felt little interest, depressed). While anxiety has an independent effect on functioning, anxiety and depression often co-occur. Further, the effect of anxiety is more pronounced when it occurs together with depression (Kroenke et al., 2009). Therefore, it is advised to screen for anxiety and depression together in one instrument (Kroenke et al., 2009).

All four items were modified in NSOC to examine the past one-month period rather than a two-week period. Items were rated from 1 (not at all) to 4 (nearly every day), with a total score ranging from 4 to 16. Higher scores indicate higher levels of mental health problems. The Cronbach's alpha of this scale for the current study sample is .76. This reliability coefficient was comparable to that reported in a study of a broader sample of NSOC caregivers (α = .74; Moon et al., 2020).

Caregiving Stressors

Objective Stressor. Care assistance was measured using four items. Participants were asked whether they helped their care recipients during the last month with (1) keeping track of

medications, (2) a special diet, (3) exercise, and (4) managing medical tasks (e.g., ostomy care). Dichotomous responses of 1 = yes and 0 = no were used for each item. A total score was created, ranging from 0 to 4, with higher scores indicating higher levels of care assistance. Because the responses were dichotomous, we calculated the Kuder-Richardson coefficient (KR-20) to assess internal consistency. The KR-20 score was .52 for the current sample.

Subjective Stressor. Role overload was assessed with three items derived from the Role Overload Scale (Pearlin et al., 1990). The following items were rated from 1 (very much) to 3 (not so much): "You are exhausted when you go to bed at night," "You have more things to do than you can handle," and "You don't have time for yourself." These items were reverse coded and a total score was created, ranging from 3 to 9, with higher scores indicating higher levels of role overload. The Cronbach's alpha of the Role Overload Scale for the current study sample was .66.

Caregiving Relationship Quality

Positive caregiving relationship quality was measured using two items: (1) "how much do you enjoy being with the care recipient" and (2) "how much does the care recipient appreciate you." Participants were asked to rate both items from 1 (a lot) to 4 (not at all). Items were reverse coded, with higher scores indicating higher levels of positive relationship quality. A total score was used, ranging from 2 to 8. Spearman-Brown reliability estimate (recommended for two-item scales) was 0.37.

Negative caregiving relationship quality was ascertained from participants' reports of how much the care recipient (1) argues with them and (2) gets on their nerves from 1 (a lot) to 4 (not at all). Items were reverse coded, with higher scores indicating higher levels of negative

relationship quality. A total score was summed, ranging from 2 to 8. Spearman-Brown reliability estimate was 0.67.

Covariates

We controlled for socio-demographic, caregiving, and health status characteristics of participants because of the possible associations of the selected variables with caregiver mental health problems (Liang et al., 2020; Moon et al., 2020). Sociodemographic characteristics included gender (0 = men, 1 = women) and race (0 = White, 1 = racial minorities). Racial minorities included African Americans, Indian Alaska Natives, Asians, and Native Hawaiian Pacific Islanders.

The two caregiving covariates were whether the caregiver provided assistance to a person with (1) dementia and (2) disability. We followed the criteria of dementia screening and technical process of classifying dementia status used in previous research (Skehan et al., 2013; Kasper et al., 2013) and generated a dementia status variable using NHATS data with three categories (i.e., possible dementia, probable dementia, and no dementia). Then, we merged data on the dementia status variable into the NSOC dataset based on the Sample Person ID. For the present analysis, we adopted the broad definition of dementia, as recommended by Kasper et al. (2013), and recoded probable dementia and possible dementia as 1 “dementia”, and no dementia as 0 “no dementia”. Similarly, for care-recipients’ disability, we generated a dichotomous variable using NHATS data based on the criteria established in previous research (Freedman & Spillman, 2014; Riffin et al., 2017), Specifically, care recipients were asked to indicate whether they experienced difficulty in performing six activities of daily living (ADLs) independently during the past month, including eating, bathing, toileting, dressing, transferring from bed, and getting around inside. Care recipients who had difficulty performing two or more ADLs were

coded as 1 “disability”, and those who had no difficulty or difficulty performing one ADL were coded as 0 “no disability”. We then merged data on the disability variable into the NSOC dataset based on the Sample Person ID.

Additionally, we controlled for participants’ self-rated health, which was measured with one item (1 = excellent to 5 = poor). This item was then reversed coded, with higher scores indicating better self-rated health.

Analysis Strategy

Data were analyzed using Stata 17.0. Frequencies and descriptive statistics were conducted for all variables. Pearson’s correlations were also conducted among focal variables. Using path analysis, we constructed two path models to examine the mediating effects of positive and negative relationship qualities on the associations between (1) care assistance and caregiver mental health problems and (2) role overload and caregiver mental health problems. Specifically, the “sem” command was used to estimate the coefficients and *p* value of direct paths in each path model; the “estat teffects” command was used to estimate the indirect effects in each path model. We used survey sampling weights to provide nationally representative estimates in each path model.

Results

Descriptive statistics of study variables are presented in Table 1. Over half were women (54.48%) and the majority of participants were White (91.78%). About 22% of participants provided care to a spouse with dementia and 41% of participants caring for a spouse with disability. The average score of self-rated health was 3.27, suggesting good health. On average, participants assisted their spouses with one task (M = 1.28) and experienced low to moderate levels of role overload (M = 4.74). The average level of positive relationship quality was high (M

= 7.72) and the average level of negative relationship quality was moderate (M = 4.51). On average, participants experienced low levels of mental health problems (M = 6.35).

Pearson's correlation coefficients among focal variables are presented in Table 2. Care assistance, role overload, and negative relationship quality were positively associated with caregiver mental health problems, whereas positive relationship quality was negatively associated with caregiver mental health problems. Moreover, care assistance and role overload were positively associated with negative relationship quality. Role overload was negatively associated with positive relationship quality. Additionally, higher levels of positive relationship quality were associated with lower levels of negative relationship quality. Given that the magnitude of all correlations, indicated by the absolute values of coefficients, ranged from .12 to .46, there was no violation of collinearity at the bivariate level (Warner, 2020).

Table 3 shows the results of the path analysis, which identified both direct and indirect effects of care assistance and role overload on caregiver mental health problems, while controlling for caregiver gender, race, and self-rated health, and care recipient's dementia status and disability status.

Care Assistance and Caregiver Mental Health Problems

Care assistance was associated with caregiver mental health problems (B = .29, p = .005). However, this relationship was not significant with the presence of negative relationship quality and positive relationship quality (B = .16, p = .08). As Figure 3 shows, negative relationship quality significantly mediated the association between care assistance and caregiver mental health problems (Indirect effect = .14, p = .016). Specifically, care assistance was positively associated with negative relationship quality (B = .27, p = .002), which in turn, was positively associated with caregiver mental health problems (B = .52, $p < .001$). Positive relationship

quality did not significantly mediate the association between care assistance and caregiver mental health problems.

Role Overload and Caregiver Mental Health Problems

Role overload was positively associated with caregiver mental health problems ($B = .56$, $p < .001$). This relationship was still significant with the presence of negative relationship quality and positive relationship quality ($B = .47$, $p < .001$). As Figure 4 shows, the mediating effect of negative relationship quality on the association between role overload and caregiver mental health problems was significant (Indirect effect = .13, $p = .002$). Specifically, role overload was positively associated with negative relationship quality ($B = .36$, $p < .001$), which in turn, was positively associated with caregiver mental health problems ($B = .36$, $p < .001$). Positive relationship quality did not significantly mediate the association between role overload and caregiver mental health problems.

Post-hoc Analysis

Given that caregiving stressors, care assistance and role overload, were associated with caregiver mental health problems respectively, and each association was mediated by negative relationship quality. We included care assistance and role overload in one model to assess the mediating effect of negative relationship quality on the association between (1) care assistance and mental health problems and (2) role overload and mental health problems simultaneously. Negative relationship quality still mediated the association between role overload and caregiver mental health problems (Indirect effect = .12, $p < .001$). Specifically, role overload was positively associated with negative relationship quality ($B = .34$, $p < .001$), which in turn, was positively associated with caregiver mental health problems ($B = .35$, $p < .001$). However, the mediating effect of negative relationship quality on the association between care assistance and

caregiver mental health problems was not significant (Indirect effect = .04, p = .306). Caregiver assistance was not associated with negative relationship quality (B = .10, p = .264) while negative relationship was associated with caregiver mental health problems (B = .35, $p < .001$)

Discussion

The present study examined the associations between caregiving stressors and mental health problems, as well as the mediating roles of positive and negative relationship qualities in these associations among older spousal caregivers. Overall, the findings of this study show that caregiving stressors not only can exert a direct, detrimental effect on mental health among older spousal caregivers, but also can indirectly exacerbate mental health problems through intensifying their negative relationships with their care-receiving partners. These findings largely corroborate the Stress Process Model and highlight the important role of secondary stressors in the mental health of older spousal caregivers.

Consistent with our hypotheses 1.1 and 3.1, care assistance and role overload were positively associated with caregiver mental health problems. These findings are consistent with prior research on the deleterious effects of caregiving stressors on mental health (e.g., Kaufman et al., 2021; Vara-Garcia et al., 2022) and extend previous findings by examining both objective and subjective indicators of caregiving stressors in the older spousal caregiver population. Higher levels of care assistance represent more demanding caregiving circumstances that can thwart older spousal caregivers' effort in performing their caregiving duties, which could in turn exert a negative effect on their mental health. With regard to the positive association between role overload and caregiver mental health problems, it is possible that older spousal caregivers who experience higher levels of caregiving overload may gradually lose confidence in coping with caregiving demands, which could adversely affect their mental health.

The findings also show that negative relationship quality mediated the associations between caregiving stressors and mental health problems and these findings support our hypotheses (3.1 and 6.1). Specifically, higher levels of care assistance and role overload were associated with higher levels of negative relationship quality, which in turn, were associated with higher levels of caregiver mental health problems. To start with, these findings suggest that both objective and subjective stressors can exacerbate negative relationship quality for older spousal caregivers. This is possibly because older spousal caregivers who experience higher levels of caregiving demands and feel more overwhelmed about the caregiving role tend to be more critical toward their care-receiving partners, which could intensify negative interactions (e.g., disagreements and arguments) between them. Consequently, older spousal caregivers may perceive their relationships with their care-receiving partners more negatively. Moreover, negative relationship quality is generally detrimental to one's mental health because it is upsetting in nature and deviates from normative social expectations (Wang et al., 2022). In the context of spousal caregiving, negative relationship quality may also restrict older spousal caregivers' use of emotional support from their care-receiving partners, which could lead to adverse mental health outcomes.

Contrary to our hypotheses, positive relationship quality was not a significant mediator. Previous research generally shows that positive relationship quality tends to be less influential on one's health and well-being than negative relationship quality (Carr et al., 2016; Grundström et al., 2021). Our findings support this idea that positive relationship quality was not associated with caregiver mental health problems whereas negative relationship quality was a significant predictor of mental health problems in both models. Another possible explanation is that, people tend to focus on searching for meaning in life as they age (Dewitte & Dezutter, 2021; Filip et al.,

2020). Therefore, it is possible that older caregivers view caregiving as a source of personal satisfaction and emotional fulfillment rather than perceiving it as a burden (Peacock et al., 2017). This may be especially true for older spousal caregivers. Given their care-receiving partners' health conditions and potentially shortened time horizons (Meyer et al., 2021), older spousal caregivers tend to value the positive aspects of the relationship with their partners regardless of the demands and adverse outcomes that they experience during caregiving.

The post-hoc analysis shows that when care assistance and role overload were assessed simultaneously, negative relationship quality mediated the association between role overload and caregiver mental health problems. However, negative relationship quality did not mediate the association between care assistance and caregiver mental health problems. Specifically, care assistance was not associated with negative relationship quality while negative relationship quality was associated with caregiver mental health problems. This is possibly because when care assistance and role overload were assessed simultaneously, role overload exerted such a substantial impact on negative relationship quality that care assistance was no longer significantly associated with negative relationship quality. Based on the Stress Process Model, these findings suggest that the subjective indicator of caregiving stressors (i.e., role overload) may be more influential in the stress process than the objective indicator of caregiving stressors (i.e., care assistance). In other words, compared to the objective indicator of caregiving stressors, the subjective indicator of caregiving stressors may play a more important role in affecting caregiver mental health problems through exacerbating negative relationship quality.

Additionally, two covariates were identified as protective factors against caregiver mental health problems, namely self-rated health and race. Better self-rated health was associated with lower levels of caregiver mental health problems. This is consistent with a large body of research

on the relationship between caregiver physical and mental health (Muliira & Kizza, 2019; Lee & Marier, 2020). Moreover, being a racial minority was associated with lower levels of caregiver mental health problems. This finding further supports the notion of the race paradox in mental health—a phenomenon in which racial/ethnic minorities generally experience better mental health outcomes than Whites, possibly due to their unique psychosocial resources (e.g., stress appraisals, resilience, and religious practices; Wang et al., 2022).

There are limitations to be considered when interpreting the results of the current study. First, the cross-sectional nature of the study design does not allow us to determine the temporal ordering among caregiving stressors, negative relationship quality and mental health problems. It is possible that the relationship between caregiving stressors and mental health problems is not causal but spurious. Instead of being a mediator, negative relationship quality could be a confounder that affects caregiving stressors and mental health problems. Future longitudinal analyses are needed to explore the causal relationships among these focal variables. Second, the analytic sample only contained 74 (8.22%) respondents who were of a racial minority. The small, aggregated sample of racial minorities could affect the generalizability of the finding on the protecting effect of race against mental health problems. Therefore, future studies should employ larger samples that allow for more nuanced categorizations of race rather than classifying African Americans, Indian Alaska Natives, Asians, and Native Hawaiian Pacific Islanders as one category. Third, the mental health assessment used in this study consisted of self-report measures, which are susceptible to social desirability and memory recall bias. Therefore, objective measures, such as reports from mental health professionals, are needed to provide a comprehensive assessment of caregiver mental health problems. Moreover, the Spearman-Brown reliability estimate was low for the positive relationship quality measure,

which suggests the need for a more reliable measure to assess positive relationship quality in future research. Fourth, our study only examined older spousal caregivers' perception of relationship quality without exploring care-receiving partners' perception. Future studies can adopt a dyadic approach to examine the perceptions of both parties. Finally, there may be other mediators that can explain the relationship between caregiving stressors and mental health problems. Nonetheless, our goal was to examine the most commonly identified relational factors, which conceptually represents one of the dominant pathways linking caregiving stressors and mental health problems in the Stress Process Model.

Despite the limitations, this study has several strengths and contributions. It focuses on older spousal caregivers—a rapidly expanding yet understudied population. The present study examined both objective and subjective indicators of caregiving stressors and identified their differential influences on the stress process. The findings suggest that subjective caregiving stressors may be more influential in affecting caregiver mental health problems through exacerbating negative relationship quality compared to objective caregiving stressors. Moreover, the bulk of aging research to date has examined either negative or positive caregiving relationship quality—only an exceedingly small number of studies have investigated both relationship qualities in relation to caregiver mental health problems (e.g., Meyer et al., 2021). Our study contributes to the scarce body of work by investigating the mediating effects of positive and negative relationship qualities on the associations between caregiving stressors and mental health problems. The findings highlight negative relationship quality as a mediator that can explain the associations between caregiving stressors and mental health problems among older spousal caregivers. Last, this study used a nationally representative sample, which allows for population estimates.

Research and Practice Implications

The present findings have important research implications. In the SPM, Pearlin et al. (1990) postulated that social relationships in general could be a secondary stressor that mediates the associations between caregiving stressors and mental health problems. Our study contributes to the SPM by identifying a specific type of social relationships—the caregiver-care recipient relationship. Furthermore, we examined positive relationship quality and negative relationship quality as independent, mediating mechanisms underlying the associations between caregiving stressors and mental health problems among older spousal caregivers. Our findings identified negative relationship quality as a significant mediator but not positive relationship quality, which suggests the need of differentiating these two relationship qualities when investigating their potential effects on the stressors-mental health problems pathway. Future studies should consider examining the positive and negative qualities of other social relationships, such as family relationship and relationship with friends.

Given the detrimental effects of caregiving demands and role overload on mental health among older spousal caregivers, practitioners from social service agencies may consider providing community-based services to address both objective and subjective caregiving stressors for this population. For example, respite care service can provide temporary relief to older spousal caregivers by assisting them with various caregiving tasks. In-home respite care, in particular, can also allow older spousal caregivers to keep their loved ones' company and help them age in place. Individual counseling and support groups can help older spousal caregivers reduce their feelings of overload and improve their mental well-being. Moreover, our post-hoc analysis revealed that subjective caregiving stressors may be more influential in the stress process than objective caregiving stressors. Therefore, priorities should be given to reducing

subjective caregiving stressors (e.g., mitigating or eliminating feelings of overload) for older spousal caregivers when developing intervention goals and delivering support services.

Our findings also demonstrate negative relationship quality as a potential target for future interventions to improve mental health outcomes among older spousal caregivers. Psychologists, social workers, and counselors have considerable expertise in providing direct services to older adults. These professionals can assess the quality of the caregiving relationship and determine the presence and extent of negative relationship quality. Individual-level interventions that limit the exposure to negative exchanges and facilitate social skills that help older spousal caregivers deal with interpersonal problems are needed. Moreover, they can provide couple interventions that focus on reducing couple conflicts and increasing compassionate communications between older spousal caregivers and their care-receiving partners. Moreover, through conducting family sessions, these professionals can have a better understanding of family resources, and help older spousal caregivers mobilize these resources to reduce their caregiving stressors and improve their mental health.

Conclusion

Older spousal caregivers are especially vulnerable to mental health problems given their compounding stressors that result from aging and caregiving duties. With an increasing life expectancy, older spousal caregivers are expected to take on the caregiver role to a much longer time and a much older age. Our study demonstrates that caregiving stressors not only can exert a direct effect on mental health problems but also affect mental health problems indirectly through impairing caregiving relationship quality. Taken together, these findings provide a pivotal step towards understanding and addressing the caregiving challenges in late life.

Acknowledgment

National Health and Aging Trends Study. Produced and distributed by www.nhats.org with funding from the National Institute on Aging (grant number U01AG32947).

National Study of Caregiving. Produced and distributed by www.nhats.org with funding from the National Institute on Aging (grant numbers R01AG054004).

Declaration of Conflicting Interests

The authors declared no potential conflicts of interest with respect to the research, authorship, and/or publication of this article.

Funding

The authors received no financial support for the research, authorship, and/or publication of this article.

References

Ajrouch, K. J., Antonucci, T. C., & Janevic, M. R. (2001). Social networks among blacks and whites: The interaction between race and age. *Journal of Gerontology: Social Sciences, 56, S112–S118.* https://doi.org/10.1093/geronb/56.2.S112

Birditt, K. S., Newton, N. J., Cranford, J. A., & Ryan, L. H. (2016). Stress and Negative Relationship Quality among Older Couples: Implications for Blood Pressure. *The journals of gerontology. Series B, Psychological sciences and social sciences, 71*(5), 775–785. https://doi.org/10.1093/geronb/gbv023

Buchanan, R. J., & Huang, C. (2011). Informal caregivers assisting people with multiple sclerosis: factors associated with the strength of the caregiver/care recipient relationship. *International Journal of MS Care, 13*(4), 177-187. https://doi.org/10.7224/1537-2073-13.4.177

Carr, D., Cornman, J. C., & Freedman, V. A. (2016). Marital quality and negative experienced well-being: An assessment of actor and partner effects among older married persons. *The journals of gerontology. Series B, Psychological sciences and social sciences, 71*(1), 177–187. https://doi.org/10.1093/geronb/gbv073

Dewitte, L., & Dezutter, J. (2021). Meaning reflectivity in later life: The relationship between reflecting on meaning in life, presence and search for meaning, and depressive symptoms in older adults over the age of 75. *Frontiers in psychology, 12,* 726150. https://doi.org/10.3389/fpsyg.2021.726150

Duan, H., & Chen, F. (2022). Gender, spousal caregiving, and depressive symptoms among Chinese older adults: Does work status matter?. *Aging & Mental Health*, 1-9. https://doi.org/10.1080/13607863.2022.2032596

Filip, M., Lukavská, K., & Šolcová, I. P. (2020). Dialogical and integrated self in late adulthood: Examining two adaptive ways of growing old. *The International Journal of Aging and Human Development, 90*(4), 337–362. https://doi.org/10.1177/0091415019831445

Freedman, V. A., Skehan, M. E., Hu, M. Y., Wolff, J., & Kasper, J. D. (2019). *National Study of Caregiving I-III user guide.* Johns Hopkins Bloomberg School of Public Health. https://www.nhats.org

Freedman, V. A., & Spillman, B. C. (2014). Disability and care needs among older Americans. *The Milbank quarterly, 92*(3), 509–541. https://doi.org/10.1111/1468-0009.12076

Grundström, J., Konttinen, H., Berg, N., & Kiviruusu, O. (2021). Associations between relationship status and mental well-being in different life phases from young to middle adulthood. *SSM - Population Health*, 14. https://doi.org/10.1016/j.ssmph.2021.100774

Kasper, J. D., Freedman, V. A., & Spillman, B. (2013). *Classification of persons by dementia status in the National Health and Aging Trends Study. Technical Paper #5*. Johns Hopkins University School of Public Health. https://www.nhats.org.

Kaufman, J. E., Lee, Y., Vaughon, W., Unuigbe, A., & Gallo, W. T. (2019). Depression associated with transitions into and out of spousal caregiving. *The International Journal of Aging and Human Development, 88*(2), 127–149. https://doi.org/10.1177/0091415018754310

Knobloch, L. K., Nichols, L. O., & Martindale-Adams, J. (2019). Applying relational turbulence theory to adult caregiving relationships. *Gerontologist, 60*, 598–606. https://doi.org/10.1093/geront/gnz090

Kroenke, K., Spitzer, R. L., Williams, J. B., & Löwe, B. (2009). An ultra-brief screening scale for anxiety and depression: the PHQ-4. *Psychosomatics, 50*(6), 613–621. https://doi.org/10.1176/appi.psy.50.6.613

Kwak, M., & Ingersoll-Dayton, B. (2020). Relationships between negative exchanges and depressive symptoms in older couples: The moderating roles of care and gender. *Journal of Social and Personal Relationships, 37*(3), 843–864. https://doi.org/10.1177/0265407519879504

Lee, K., & Marier, P. (2021). Aging in place with a spouse in need: neighborhood cohesion and older adult spouses' physical and mental health. *The International Journal of Aging and Human Development, 93*(4), 1012–1030. https://doi.org/10.1177/0091415020974616

Lee, Y., & Zurlo, K. A. (2014). Spousal caregiving and financial strain among middle-aged and older adults. *International journal of aging & human development, 79*(4), 302–321. https://doi.org/10.1177/0091415015574181

Liang, J., Aranda, M. P., & Lloyd, D. A. (2020). Association between role overload and sleep disturbance among dementia caregivers: The impact of social support and social engagement. *Journal of aging and health, 32*(10), 1345–1354. https://doi.org/10.1177/0898264320926062

Mausbach, B. T., Roepke, S. K., Chattillion, E. A., Harmell, A. L., Moore, R., Romero-Moreno, R., Bowie, C. R., & Grant, I. (2012). Multiple mediators of the relations between caregiving stress and depressive symptoms. *Aging & mental health, 16*(1), 27–38. https://doi.org/10.1080/13607863.2011.615738

McPherson, C. J., Wilson, K. G., Chyurlia, L., & Leclerc, C. (2011). The caregiving relationship and quality of life among partners of stroke survivors: A cross-sectional study. *Health and Quality of Life Outcomes, 9*(1), 1-10. https://doi.org/10.1186/1477-7525-9-29

Meyer, K., Patel, N., & White, C. (2021). The relationship between perceived support and depression in spousal care partners: A dyadic approach. *Aging & mental health, 25*(10), 1830–1838. https://doi.org/10.1080/13607863.2020.1836474

Monin, J. K., Levy, B., Doyle, M., Schulz, R., & Kershaw, T. (2019). The impact of both spousal caregivers' and care recipients' health on relationship satisfaction in the Caregiver Health Effects Study. *Journal of Health Psychology, 24*(12), 1744–1755. https://doi.org/10.1177/1359105317699682

Moon, H. E., Haley, W. E., Rote, S. M., & Sears, J. S. (2020). Caregiver well-being and burden: Variations by race/ethnicity and care recipient nativity status. *Innovation in aging, 4*(6), igaa045. https://doi.org/10.1093/geroni/igaa045

Muliira, J. K., & Kizza, I. B. (2019). The other untold burden of cancer in sub-Saharan Africa: Anxiety and depressive symptoms among family caregivers of adult cancer patients. *International journal of Africa nursing sciences, 11*, 100166. https://doi.org/10.1016/j.ijans.2019.100166

Mulud, Z. A., & McCarthy, G. (2017). Caregiver burden among caregivers of individuals with severe mental illness: Testing the moderation and mediation models of resilience. *Archives of Psychiatric Nursing, 31*(1), 24-30. https://doi.org/10.1016/j.apnu.2016.07.019

Nah, S., Martire, L. M., & Zhaoyang, R. (2022). Perceived gratitude, role overload, and mental health among spousal caregivers of older adults. The Journals of Gerontology: Series B, 77(2), 295-299. https://doi.org/10.1093/geronb/gbab086

Peacock, S., Sethi, B., Williams, A., Duggleby, W., Bayly, M., Swindle, J., Ploeg, J., & Markle-Reid, M. (2017). Older adult spouses with multiple chronic conditions: Challenges, rewards, and coping strategies. *Canadian Journal on Aging/La Revue canadienne du vieillissement, 36*(2), 209-222. https://doi.org/10.1017/S0714980817000095

Pearlin, L. I., Mullan, J. T., Semple, S. J., & Skaff, M. M. (1990). Caregiving and the stress process: An overview of concepts and their measures. *The gerontologist, 30*(5), 583-594. https://doi.org/10.1093/geront/30.5.583

Polenick, C. A., & DePasquale, N. (2019). Predictors of secondary role strains among spousal caregivers of older adults with functional disability. *The Gerontologist, 59*(3), 486-498. https://doi.org/10.1093/geront/gnx204

Proulx, C. M., Helms, H. M., & Buehler, C. (2007). Marital quality and personal well-being: A meta-analysis. *Journal of Marriage and family, 69*(3), 576-593. https://doi.org/10.1111/j.1741-3737.2007.00393.x

Raschick, M., & Ingersoll-Dayton, B. (2004). The costs and rewards of caregiving among aging spouses and adult children. *Family relations, 53*(3), 317-325. https://doi.org/10.1111/j.0022-2445.2004.0008.x

Riffin, C., Van Ness, P. H., Wolff, J. L., & Fried, T. (2017). Family and Other Unpaid Caregivers and Older Adults with and without Dementia and Disability. Journal of the *American Geriatrics Society, 65*(8), 1821–1828. https://doi.org/10.1111/jgs.14910

Shim, B., Landerman, L. R., & Davis, L. L. (2011). Correlates of care relationship mutuality among carers of people with Alzheimer's and Parkinson's disease. *Journal of advanced nursing, 67*(8), 1729–1738. https://doi.org/10.1111/j.1365-2648.2011.05618.x

Skehan, M. E. & Spillman, B. C. (2013). *STATA programming statements for construction of dementia classification in the National Health and Aging Trends Study. Addendum to NHATS Technical Paper #5.* Johns Hopkins University School of Public Health. https://www.nhats.org

Tucker, J. E., Bishop, N., Wang, K., & Phillips, F. (2021). Marital transitions, change in depressive symptomology, and quality of social relationships in midlife and older U.S. adults: An analysis of the Health and Retirement Study. *The International Journal of Aging and Human Development.* https://doi.org/10.1177/00914150211066551

Vara-Garcia, C., Mausbach, B. T., Romero-Moreno, R., Losada-Baltar, A., Jeste, D. V., & Grant, I. (2022). Longitudinal correlates of depressive symptoms and positive and negative affects in family caregivers of people with dementia. *The American Journal of Geriatric Psychiatry, 30*(2), 148-157. https://doi.org/10.1016/j.jagp.2021.06.011

Vespa, J., Lauren M., & Armstrong, D. M. (2020). *Demographic Turning Points for the United States: Population Projections for 2020 to 2060.* U.S. Census Bureau. https://www.census.gov/content/dam/Census/library/publications/2020/demo/p25-1144.pdf

Wang, F., & Nguyen, A. W. (2022). Correlates of physical and emotional strain among older adult caregivers. *Journal of gerontological social work*, 1–18. Advance online publication. https://doi.org/10.1080/01634372.2022.2097755

Wang, F., Nguyen, A. W., Lincoln, K. D., Qin, W., & Hamler, T. (2022). The moderating role of race and ethnicity in the relationship between negative family interactions and mental health among older adults. *The Gerontologist, 62*(5), 674–684. https://doi.org/10.1093/geront/gnab148

Warner, R. (2020). *Applied Statistics I: Basic Bivariate Techniques.* Sage Publications.

Williamson, G. M., & Shaffer, D. R. (2001). Relationship quality and potentially harmful behaviors by spousal caregivers: How we were then, how we are now. *Psychology and aging, 16*(2), 217. https://doi.org/10.1037/0882-7974.16.2.217

Table 1.

Demographic Characteristics of the Sample and Distribution of Study Variables (N = 431)

	N (%)	Mean (S.D.)
Gender (ref=Men)		
Women	246 (54.48)	
Race (ref=White)		
Racial minorities	74 (8.22)	
Dementia status (ref=No dementia)		
Dementia	131 (22.31)	
Disability status (ref=No disability)		
Disability	157 (41.11)	
Self-rated health (1-5)		3.27 (1.01)
Care assistance (0-4)		1.28 (1.09)
Role overload (3-9)		4.74 (1.69)
Positive relationship quality (4-8)		7.72 (.67)
Negative relationship quality (2-8)		4.51 (1.52)
Caregiver mental health problems (4-16)		6.35 (2.56)

Notes. Percentages and N are presented for categorical variables. Means, standard deviations, and range are presented for continuous variables. Percentages are weighted and frequencies are un-weighted.

Table 2.

Bivariate Correlations Among Focal Variables

	1	*2*	*3*	*4*	*5*
1. Caregiver mental health problems	-				
2. Care assistance	.13*	-			
3. Role overload	.46***	.25***	-		
4. Positive relationship quality	-.16**	-.04	-.19***	-	
5. Negative relationship quality	.36***	.12*	.32***	-.29***	-

*$p<.05$, **$p<.01$, ***$p<0.001$

Table 3.

Unstandardized Regression Coefficient Estimates for Care Assistance, Role Overload, Caregiving Relationship Quality, and Caregiver Mental health problems

	Model 1 *B* (*SE*)			Model 2 *B* (*SE*)		
	Positive relationship quality	Negative relationship quality	Caregiver mental health problems	Positive relationship quality	Negative relationship quality	Caregiver mental health problems
Women (ref=Men)	-.02 (.08)	.24 (.20)	.21 (.26)	.02 (.08)	.17 (.19)	.16 (.23)
Race (ref=White)						
Racial minorities	-.02 (.08)	-.32 (.53)	-.73 (.34)*	-.05 (.07)	-.09 (.43)	-.59 (.41)
Dementia status (ref=No dementia)						
Dementia	.05 (.08)	-.19 (.27)	-.34 (.21)	.08 (.07)	-.15 (.23)	-.32 (.21)
Self-rated health	.06 (.05)	-.14 (.11)	-.71 (.12)***	.04 (.05)	-.07 (.11)	-.64 (.12)***
Disability status (ref=No disability)						
Disability	-.03 (.11)	.14 (.18)	.06 (.28)	-.01 (.11)	.13 (.17)	.05 (.28)
Care assistance	-.02 (.06)	.27 (.08)**	.16 (.09)	-	-	-
Role overload	-	-	-	-.08 (.03)**	.36 (.05)***	.47 (.10)***
Positive relationship quality	-	-	-.10 (.36)	-	-	.01 (.36)
Negative relationship quality	-	-	.52 (.10)***	-	-	.36 (.10)***
Intercept	7.61 (.24)	4.56 (.43)	6.70 (3.03)	8.01 (.26)	3.06 (.49)	4.43 (3.09)
Complex design *df*		52			52	
N		323			319	

Notes. Model 1: Care assistance, positive and negative relationship quality, caregiver mental health problems. Model 2: Role overload, positive and negative relationship quality, caregiver mental health problems. *B*=regression coefficient. *SE*=standard error.

p* < .05; ** *p* < .01; * *p* < .001

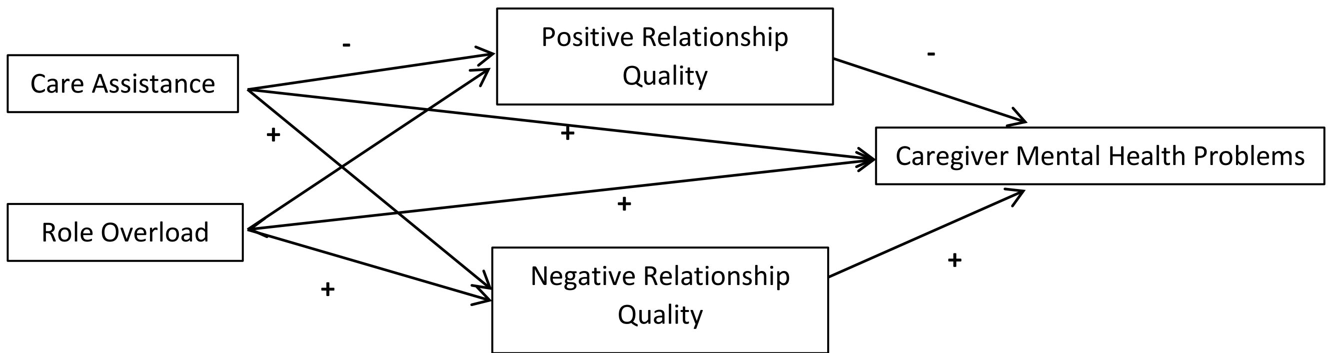

Figure 1. *Conceptual model illustrating potential mediating pathways between caregiving stressors and caregiver mental health problems*

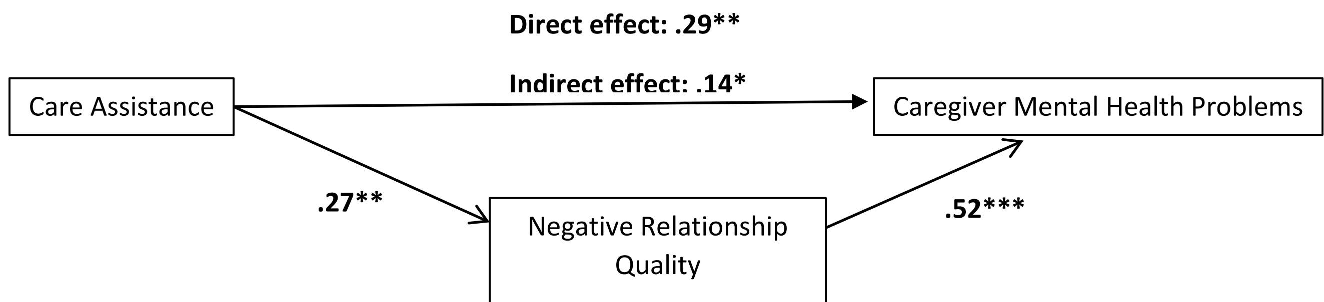

Figure 2. *Results on the direct and indirect effects of care assistance on caregiver mental health problems via negative relationship quality*
*$p < .05$. **$p < .01$. ***$p < .001$.

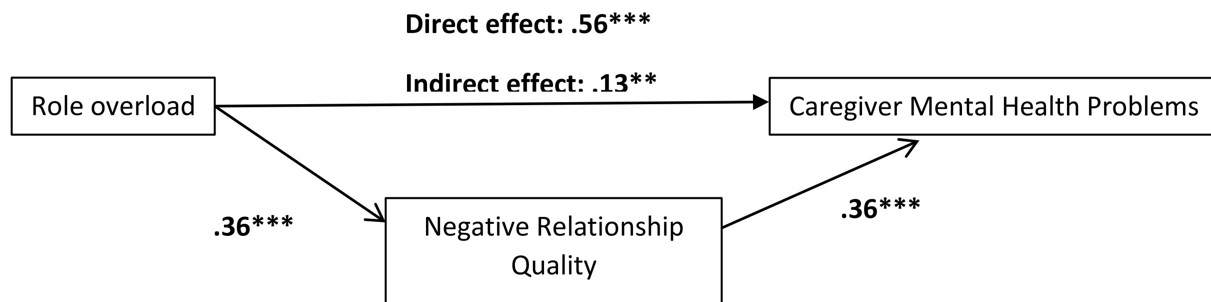

Figure 3. *Results on the direct and indirect effects of role overload on caregiver mental health problems via negative relationship quality*
$^{*}p < .05$. $^{**}p < .01$. $^{***}p < .001$.