ORIGINAL PAPER

Caregiver Burden and Depression Among Chinese Family Caregivers: the Role of Self-compassion

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Abstract

Objectives This study aimed to examine the association between caregiver burden and depression among Chinese cancer caregivers, and to identify the buffering role of self-compassion in the relationship between caregiver burden and depressive symptoms. In China, family caregivers perform major tasks and responsibilities on behalf of cancer patients because of unique Chinese norms regarding family obligations and the underdeveloped healthcare system. The caregiver burden has become a major challenge facing family members, and it could elicit depressive symptoms, but the protective factors buffering the effects of caregiver burden on depression are understudied.

Methods A convenience sample of 208 family caregivers of cancer patients visiting a hospital in Tianjin City was surveyed. Data on depression, caregiver burden, and self-compassion were collected using reliable established scales. A series of linear regression models was estimated to determine the statistical relationships among the variables and the moderation effect of self-compassion.

Results Caregiving burden was positively associated with depression, and the hierarchical multiple regressions revealed that self-compassion was associated with a reduction in the negative influence of caregiver burden on depression.

Conclusions This correlational study, which found an association between caregiving burden and depression, provides the basis for a longitudinal study that examines whether there is a causal relationship between caregiving burden and depression among Chinese caregivers of individuals with cancer.

Keywords Oncology caregivers · Self-compassion · Caregiver burden · Depression · Chinese culture

Cancer has been the leading cause of death in China since 2005 (National Bureau of Statistics of China 2005). In 2015, about four million Chinese were newly diagnosed with invasive cancers and about three million Chinese died from cancer (Chen et al. 2016). Providing cancer patients with high quality of care is a major challenge of the healthcare system. Informal caregivers, such as spouses and adult children, are playing significant roles in taking care of cancer patients. Caregiving of cancer patients, particularly for the loved ones, can be a stressful activity and entails great effort and knowledge (Romito et al. 2013). Family caregivers take responsibility for meeting many of the major personal needs of cancer patients, such as assisting patients with their daily activities, helping them to navigate the healthcare system, and working with their treatment and rehabilitation plans (Girgis et al. 2013; Given et al. 2004; Sherwood et al. 2008).

It has been widely acknowledged that cancer and its related treatment can result in psychological distresses in both patients and their family caregivers (Kayser et al. 2007; Li and Loke 2014; Lu et al. 2010). Depression is one of the most prevalent psychological distresses among family caregivers (Fann et al. 2008). Depression influences the well-being of the caregivers, disturbs their family environments, and influences the quality of care provided to the patients, thereby jeopardizing the cancer patient's well-being (Siminoff et al. 2010; van Ryn et al. 2011). A meta-analysis of 21,149 cancer caregivers of studies with no limit in countries of origins found that the overall prevalence of depression is 42% (Geng et al. 2018). However, this rate is much higher among

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Chinese caregivers of cancer patients with the range between 47.2 and 67.3% (Han et al. 2013; Yang et al. 2012). Such high prevalence may attribute to the caregiving burden that produced by several unique features of Chinese caregivers.

Despite long-term care services are booming in China, it is still at a very early stage and facing great challenges, such as unstructured system, unstandardized regulations, and lack of resources and healthcare personnel (Lu et al. 2015; Zhou et al. 2018). The abilities to provide good quality of care can be a big concern of many patients and their families. Additionally, given that most long-term care programs are primarily subject to the rapid aging population, limited attentions have been given to address the needs of other populations, such as cancer patients, who also have the needs for intensive long-term care. Very few formal care options are left for cancer patients and their families. As such, most patients have to rely on their family members for care, which puts family members on the front lines of caregiving for Chinese cancer patients (Chen et al. 2004).

Moreover, the traditional Chinese norm of filial piety, which expected family members as primary care providers, imposes a heavy burden on Chinese caregivers. The notion of filial piety requires the family caregivers to put their own needs behind to provide unconditional caregiving commitment to their care recipients. To perform filial piety, family caregivers may neglect their own physical and psychological needs. Because filial piety is considered to be virtue and obligations, the inability to provide good quality of care and support can cause great regrets, self-blame, and shame in the family caregivers (Chan et al. 2012). A study with 164 dyads of cancer patients and their caregiving daughters found that a greater sense of filial obligation was associated with a higher level of depression (Raveis et al. 1998).

The physical, psychological, and emotional caregiving burden can accumulate and produce tremendous psychological distress among Chinese family caregivers of cancer patients. Studies have documented the significant associations between caregiving burden and many psychological distresses. While most of them were mostly conducted in the Western countries (Fujinami et al. 2015; Milbury et al. 2013), limited studies have been conducted in mainland China. It remains unclear that to what extent caregiving burden contributes to the high prevalence of depression among Chinese caregivers of cancer patients. It is also worth exploring the ways that Chinese family caregivers engaged to cope with depressive symptoms. Self-compassion that derives from the traditional Chinese philosophy and the Eastern Buddhist philosophy may serve as a unique buffer to depressive symptoms among Chinese family caregivers for cancer patients.

The idea of self-compassion was introduced by Western scholars into psychology to describe a psychological state in which individuals are aware of and accept their personal suffering and they offer the same kindness and care to themselves that they would extend to others (Neff 2003a). Neff (2003a, b) conceptualized three major components of self-compassion: self-kindness, common humanity, and mindfulness. Self-kindness refers to extending kindness and empathy to oneself in the adverse situation, rather than self-blame. Common humanity involves the recognition that suffering is not an individualized failure, but a shared experience of all human in some way. Mindfulness is characterized by a balanced perception of one's thoughts and feelings, rather than avoiding or over-identifying contain feelings. Additionally, although these three components can be conceptually distinctive, they build upon and enhance one other to allow the individuals to restructure positive cognition in the face of negative events.

These components make self-compassion a robust predictor of positive well-being. Many studies have found plausible associations between self-compassion and measures of psychological well-being, such as forgiveness, positive thinking, positive affect, and empathy (Barnard and Curry 2011; Shonin et al. 2015; Wu et al. 2019). Research also has repeatedly found that self-compassion can promote healthcare professionals' emotional intelligence, overall resilience, compassion toward others, and perspective-taking (Heffernan et al. 2010; Kemper et al. 2015; Lutz et al. 2008; Gustin and Wagner 2013).

Although one study on dementia caregivers found that self-compassion is negatively related to caregiver burden (Lloyd et al. 2019), studies have not been conducted on family caregivers of cancer patients, and very few studies have investigated the role of self-compassion for mitigating the effects of caregiver burden on depression among Chinese family caregivers. Therefore, this study attempted to test the following two hypotheses: (1) caregiver burden is positively associated with depression among Chinese family caregivers of cancer patients, and (2) this association is more significant for cancer caregivers with low self-compassion than those with high self-compassion.

Method

Participants

The data used in this study were derived from a mental health survey of Chinese caregivers of cancer patients conducted by Renmin University of China in January 2019. Convenience sampling methods were used to collect data at Tianjin Medical University Cancer Institute and Hospital, a third-grade class-A hospital in Tianjin City. Its cancer patients are from diverse places. According to the hospital's record, the patients scheduled for checkup were about 500 each day and 10% were confirmed as cancer patients. There were 214 primary caregivers participating in this survey within 20 days, which was about 20% of all eligible participants. Cancer-specific data were collected from the patients' medical records and primary

caregiver was self-reported by the participants. After collecting the questionnaires, six cases were excluded because of missing data, for a final sample of 208 respondents.

The average age of cancer caregivers was 43.39 (SD = 11.78), ranging from 18 to 69 years. Males comprised 50.5% of the sample, 29.8% came from rural areas, 88% of the sample was married, and 94.7% reported in good health. The respondent's relationship to the cancer patient was spouse (41.8%), child (38.0%), parent (10.6%), and siblings or other (9.7%). The average amount of time spent providing care was 17.52 h per day (SD = 7.77). The average age of cancer patients was 50.64 (SD = 15.85), 95% of them ranging from 21 to 78 years. The patients' cancer types were esophageal (24.5%), breast (19.7), lung (11.5%), gynecological (11.1%), cartilage (10.1%), liver tumors (6.3%), nasopharyngeal (5.8%), and other (11.1%). The distributions of cancer stages were stage I (15.4%), stage II (22.1%), stage III (28.4%), and stage IV (9.1%); however, 25.0% did not report their cancer stage. In total, 94.7% of the patients had medical insurance (see Table 1).

Procedures

The questionnaire was distributed to primary caregivers of cancer patients who were accompanying the patients to the hospital for regular physical checkups at one of the hospital's five buildings. A trained interviewer explained the study's purpose, procedures, potential risks, confidentiality, and anonymity, and informed written consent was obtained from all respondents before they completed the questionnaire. The questionnaire was administered in the waiting rooms when the caregivers were available while they waited for the patients to complete their appointments. The questionnaire usually took about half an hour to 1 h to complete. The respondents were informed that they could stop participating at any time for any reason. Before collecting the data, the study was approved by Renmin University of China's research ethics committee.

Measures

Depression Depressive symptoms were measured using the 20 items of the Center for Epidemiological Studies Depression Scale (CES-D) (e.g., "I was bothered by things that don't usually bother me") (Radloff 1977). The Chinese version has been well validated (Lei et al. 2011). The response options ranged from 1 = never through 5 = always. Four items were reverse-coded, and the composite scores ranged from 20 through 100 with higher scores reflecting more depressive symptoms. Cronbach's alpha coefficient of this scale in our study was .94.

Table 1 Characteristics of the sample in this study

	Percentage (%)/M (SD)
Descriptive statistics of cancer caregivers	
Age	43.39 (11.78)
Gender	
Male	50.5
Female	49.5
Household registration	
Rural areas	29.8
Urban areas	70.2
Marital status	
Single	10.1
Married	88.0
Divorced	1.9
Physical health	
Good	94.7
Poor/chronic disease	5.3
Time spent on caring for patients per day	17.52 (7.77)
Relationship with the patient	
Spouse	41.8
Children	38.0
Parents	10.6
Siblings	8.7
Others	1.0
Caregiver burden (2–74)	30.44 (15.97)
Self-compassion (61–121)	87.24 (11.64)
Mindfulness (17–65)	45.54 (8.57)
Isolation (16–54)	36.29 (8.43)
Depression (0–51)	14.69 (12.18)
Descriptive statistics of cancer patients	
Age	50.64(15.85)
Cancer type	
Esophageal	24.5
Breast	19.7
Lung	11.5
Gynecological	11.1
Cartilage	10.1
Liver tumors	6.3
Nasopharyngeal	5.8
Others	11.1
Cancer stages	
Stage I	15.4
Stage II	22.1
Stage III	28.4
Stage V	9.1
Not report	25.0
Having medical insurance	94.7

Caregiver Burden The Chinese version of the Zarit Burden Interview (ZBI) measured the respondents' subjective burden regarding functional/behavioral impairments and the home care situation. The ZBI has had wide application in studies of caregiver burden in the West and in China (Higginson et al. 2010; Ko et al. 2008; Wang et al. 2008). It comprised the 22 items of the revised version, such as "Do you feel that your relative asks for more help than he/she needs?" and "Do you feel that because of the time you spend with your relative that you have time enough time for yourself?" The response options were 1 = never through 5 = almost always, ranged from 22 through 110, and higher scores indicated higher perceived

caregiver burden. Cronbach's alpha coefficient of the ZBI in this study was .90.

Self-compassion Neff's (2003a) 26-item Self-Compassion Scale, which has been validated for Chinese adolescents and adults (Chen et al. 2011; Wu et al. 2018), was used to measure self-compassion. The construct comprises six subscales and response options ranged from 1 = almost never through 5 = almost always. Three subscales measured the positive aspects of self-compassion: (1) self-kindness (e.g., "When I am going through a very hard time, I give myself the caring and tenderness I need"), (2) common humanity (e.g., "When I am down and out, I remind myself that there are lots of other people in the world feeling like I am"), and (3) mindfulness (e.g., "When something painful happens, I try to take a balanced view of the situation"). The other three subscales measured negative aspects: (1) self-judgment (e.g., "I am disapproving and judgmental my own flaws and inadequacies"), (2) isolation (e.g., "When I think about my inadequacies, it tends to make me feel more separate and cut off from the rest of the world"), and (3) over-identification (e.g., "When something upsets toward self I get carried away with my feelings"). The responses on the three negative subscales (self-judgment, isolation, and over-identification) were reverse-coded before calculating the total score. Cronbach's alpha coefficient of self-compassion in our sample was .80.

Control Variables Age and gender was asked of the participants directly. Age was measured continuously, and gender was dichotomous. Relationships with the patient included spouse, children, parents, siblings, and others.

Data Analyses

The analysis was performed in two steps using the SPSS 22.0 software. First, descriptive statistics (means, standard deviations, and Cronbach's alphas) were generated. Pearson's correlation coefficients were calculated to assess the linear associations between depression, caregiver burden, and self-compassion. Then, hierarchical multiple regression analysis were performed to test the moderating effect of self-compassion on the relationship of caregiver burden to depression (Baron and Kenny 1986; Frazier et al. 2004). The regression analysis proceeded as follows: (1) depression was regressed on caregiver burden (path A), (2) depression was regressed on self-compassion (path B), and (3) depression was regressed on the interaction term between caregiver burden and self-compassion (a multiplicative term) controlling for the effects of age, gender, and relationship to the patient (path C). The moderator hypothesis was supported on the condition that the interaction term (path C) had a statistically significant influence on depression. Simple slope tests were performed to further interpret the interaction effects of path C. Following

Aiken et al. (1991), separate regression lines were computed, plotted, and tested for the respondents with scores one standard deviation below the self-compassion mean and the respondents with scores one standard deviation above the self-compassion mean.

Results

Bivariate correlations among caregiver burden, self-compassion, and depressive symptoms are presented in Table 2. Caregiver burden was positively associated with depression ($r = .77$, $p < .01$) and was negatively associated with self-compassion ($r = -.24$, $p < .01$), and self-compassion was negatively associated with depression ($r = -.48$, $p < .01$).

To examine the moderating role of self-compassion, three hierarchical multiple regression analyses were estimated. The effects of age of cancer caregivers and patients, gender, relationship to the patient, and severity of cancer were controlled for in all three models (Table 3), and the coefficients were standardized. The results of model 1 found that caregiver burden was positively associated with depression ($\beta = .73$, $p < .001$), and the model accounted for about 64% of the variance in depression and all VIFs were smaller than 5. In model 2, self-compassion was negatively associated with depression ($\beta = -.29$, $p < .001$), which significantly added 8% to the explanatory power of the analysis regarding the variance in depression. Model 3 added the interaction term between caregiver burden and self-compassion, which significantly contributed to the variance of depression ($\Delta F(8, 200) = 73.18$, $p < .001$, $\Delta R^2 = 2\%$).

To specify this result, separate regression analyses were performed on the influence of caregiver burden on depression for two groups of respondents: caregivers whose self-compassion scores were one standard deviation above the mean (high self-compassion [SC]) ($n = 34$) and caregivers whose self-compassion scores were one standard deviation below the mean (low SC) ($n = 26$). The results are shown in Fig. 1. Caregivers with high SC reported fewer depressive symptoms ($\beta = .65$, $p < .001$) than those with low SC ($\beta = .82$, $p < .01$).

Table 2 Zero-order correlations among caregiver burden, self-compassion, and depression

	Caregiver burden	Self-compassion	Depression
Caregiver burden	1.00		
Self-compassion	− .24**	1.00	
Depression	.77**	− .48**	1.00

**$p < .01$

Table 3 Hierarchical multiple regressions of depression on caregiver burden and self-compassion

	Depression					
	β	ΔR^2	β	ΔR^2	β	ΔR^2
Block 1						
		.65***		.65***		.65***
Age of caregiver	.01		− .04		− .02	
Age of patient	− .07		− .02		− .03	
Gender (ref.: male)	.12*		.11*		.11*	
Relationship with the patient						
Spouse (ref.)						
Children	.002		−.13		− .09	
Parents	.15*		.11		.10	
Siblings and others	.07		.04		.04	
Severity of cancer						
Stage I (ref.)						
Stage II	.04		.04		.06	
Stage III	.17**		.17**		.18**	
Stage IV	.22***		.17**		.15**	
Caregiver burden (CB)	.65***		.55***		.58***	
Block 2						
				.08***		.08***
Self-compassion (SC)			− .31***		− .30***	
Block 3						
CB × SC					− .14**	
						.02**
Adjusted R^2		.64		.73		.75

*p < .05, **p < .01, ***p < .001

Discussion

The present study examined the association between caregiver burden and depression among Chinese family caregivers of cancer patients considering the moderating role of self-compassion. Our findings supported the study's hypothesis that the association between caregiver burden and depression is positive, which self-compassion significantly moderates by decreasing the effect of caregiving's burden on depression. The findings offer several insights for understanding Chinese caregivers' psychological well-being.

In support of results from previous studies conducted in Western countries (Friðriksdóttir et al. 2011; Lambert et al. 2013; Sklenarova et al. 2015), we found a positive association between caregiver burden and depression in our sample. Although this finding was not surprising, it is important to recognize the unique cultural values and expectations that contribute to the caregiving burden of Chinese caregivers. As a way to prevent the deterioration of current health status, Chinese family members tend to not disclose or cover up a cancer diagnosis to a cancer patient as they believe the fear of death may worsen the disease. An empirical study confirmed this notion by finding the close association between the awareness of the diagnosis, cancer stage, and the depression level among Chinese cancer patients (Han et al. 2013). As such, about 62% of Chinese cancer patients were unaware of the cancer diagnosis before undergoing chemotherapy (Liu et al. 2018). However, the avoidance of truthful conversation regarding the disease may increase the caregiver burden as they struggling to hide the truth and their feelings in front of the cancer patients. It requires great effort to cope with such caregiving burden and stress alone.

This situation can be further aggravated by the lack of professional social support. Family caregivers rarely are prepared for the caregiving role (Blum and Sherman 2010; van Ryn et al. 2011). Many family caregivers reported little or no formal training for caregiving (Kurtz et al. 2005) and were lack the skills needed to successfully perform this multifaceted

Fig. 1 The moderating effect of self-compassion (SC) on caregiver burden and depression
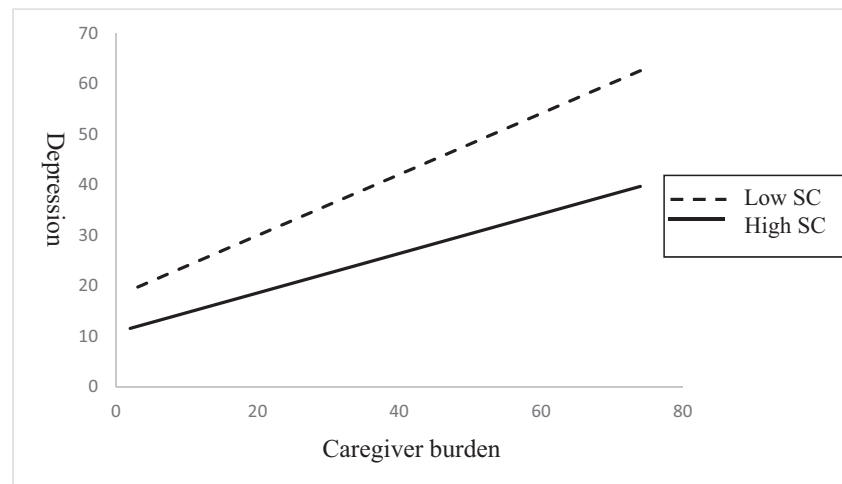
caregiving role (Bucher et al. 1999). A significant share of family caregivers reported that they were fearful about the patient's condition, receiving disease-related information, and that their personal emotional support needs were unmet (Sklenarova et al. 2015). Although psychosocial supports (e.g., emotional support and coping strategies) can help to lessen the level of depression (Badr et al. 2015; Blanchard et al. 1997), very few professional social support or services are available for caregivers in China. China does not have national-level caregiver associations, such as the Family Caregiver Alliance in the USA and the National Care Association in the UK who are taking the responsibility to prepare, educate, and assist family caregivers. Although multiple policies have been launched in recent years, services and policies, such as institutionalized care, community-based services, and respite care, that were intended to support family caregivers are still limited in China (Lu et al. 2015). Thus, Chinese cancer caregivers can be vulnerable and uneducated in the face of depression.

As expected, the results showed that self-compassion moderated the influence of caregiver burden on depressive symptoms among Chinese caregivers of cancer patients. Respondents with higher levels of self-compassion reported lower levels of depression. This finding supports a German study that found a similar moderating role of self-compassion for buffering depressive symptoms in the general population (Körner et al. 2015). This may be because that individuals with a higher level of self-compassion are less likely to develop depression (MacBeth and Gumley 2012), more likely to develop resilience to environmental and interpersonal hardships (Neff and Dahm 2015), and more resistant to burnout, worry, and fatigue (Dorian and Killebrew 2014; Raab 2014). Neff (2003b) demonstrated that self-compassion helps individuals to integrate the concerns with oneself and with others in a balanced way. It is possible that when taking care of cancer patients, self-compassionate caregivers are more likely to treat themselves and their care recipients with kindness and compassion. Those caregivers would not avoid their negative feelings or compromise themselves, but take a positive and compassionate attitude to the caregiving burden. This mindset prevents caregivers from depression and facilitates the development of resilience.

Additionally, the unique Chinese philosophy of Confucian could possibly provide a unique social context to maximize the moderating effect of self-compassion. While the self-compassion helps these caregivers to resolve their negative emotions and strengthen their emotional resilience, the Confucian philosophy encourages individuals to endure hardships (Lazarus 1993). A study of 330 Chinese college students found that participants reported the lowest depression and anxiety when combining self-compassion and Confusion coping (Zhou et al. 2017). In the Chinese culture, individuals are encouraged to endure challenges. The utilization of Confucian and self-compassion may help Chinese caregivers to be more resistant to the caregiving burden and further reduce the likelihood of developing depression.

Limitations and Future Research Directions

This study has several limitations to consider. First, its cross-sectional design limited the conclusions that could be drawn from the findings, and temporal variation in the moderating effect of self-compassion could not be investigated. It would be valuable to employ a longitudinal design to examine the effects of self-compassion on caregiver burden and depressive symptoms while it is being applied across time and as patients' conditions change (progressively through cancer stages or into and out of remission). Second, the data collection via convenience sampling at one institutional setting means that the results are not generalizable to all family caregivers of cancer patients. A random sample of caregivers should be surveyed across China. Third, the duration of receiving treatment and care given to the patient was not asked of directly, which should be added to future studies. In addition, just one

moderator was tested on the relationship between caregiver burden and depressive symptoms, and the cultural beliefs underlying self-compassion deserve further exploration. Lastly, this study suffers from common method bias. Participants were asked for their perceived experiences for multiple constructs in the same survey, which may lead to results confounded with common method variance (Podsakoff et al. 2003).

Compliance with Ethical Standards

Ethical Approval The research procedure and data collection method were approved by the research ethics committee in the School of Sociology and Population Studies at Renmin University of China.

Informed Consent All participants have been provided the purpose and procedures of this survey, and they were informed that they were voluntary and can quit anytime. Each participant signed an informed consent before the survey.

Conflict of Interest The authors declare that they have no conflict of interest.

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