

Positive Caregiving Characteristics as a Mediator of Caregiving Burden and Satisfaction With Life in Caregivers of Older Adults

Journal of Geriatric Psychiatry
and Neurology
2018, Vol. 31(6) 329-335
© The Author(s) 2018



Article reuse guidelines:
sagepub.com/journals-permissions
DOI: 10.1177/0891988718802111
journals.sagepub.com/home/jgp

Restria Fauziana, BA¹, Rajeswari Sambasivam, BSc¹, Janhavi Ajit Vaingankar, Msc¹, Edimansyah Abdin, PhD¹, Hui Lin Ong, BA¹, Min-En Tan, BPsychSc(Hons)¹, Siow Ann Chong, MBBS, MMed, MD¹, and Mythily Subramaniam, MBBS, PhD¹

Abstract

Background: Satisfaction with life is recognized to be a factor in alleviating burden in stressful caregiving duties. However, the mechanism underlying this relationship is indistinct. Positive aspects of caregiving (PAC) may help to regulate caregiving burden among caregivers of older adults. The study aims to examine whether positive caregiving characteristics mediate the effect between satisfaction with life and burden of care. **Methods:** Participants were 285 caregivers of older adults (aged 60 and above) in Singapore and were recruited in a cross-sectional, self-report study (mean [M] = 47.0 years; 64.6% females). Measures included in the study were the Zarit Burden Interview (ZBI), Positive Aspects of Caregiving (PAC), and the Satisfaction with Life Scale (SWLS). Mediation analyses were used to study the indirect effects of life satisfaction on caregiver burden through features of PAC. **Results:** Mean scores for the ZBI, PAC, and SWLS scales were M = 23.15 (standard deviation [SD] = 15.98), M = 34.55 (SD = 8.19), and M = 23.56 (SD = 6.62) respectively. Results from the mediation analysis revealed that the association between life satisfaction and caregiving burden was significantly mediated by the PAC ($P < .001$). **Discussion:** Positive aspects of caregiving may be a mechanism that links satisfaction with life and caregiver burden. Findings may represent attempts to manage caregiving duties as well as maintaining a positive attitude toward their responsibilities.

Keywords

caregiving, caregiver, burden, satisfaction with life, positive caregiving, older adults

Introduction

Improvements in global health have increased both population growth and longevity. In 2013, life expectancy rose to 71.5 years, increasing from 65.3 in 1990.¹ The World Health Organization² predicts that the number of people aged above 60 will increase by 10% and reach 2 billion by 2050. Along with these growing numbers of older adults, support activities of daily living is also forecast to quadruple and many may require continual care. The cost of care for older adults is undeniable and will continue to rise along with the rapidly aging population. Caregivers in the United States providing health-related services are valued at an estimated US\$350 billion in 2006³ underscoring their critical role in long-term care. In Singapore, the cost of dementia care in 2013 was estimated at S\$532 million with an annual cost of over S\$10 000 per patient a year.⁴

The role of caregiving is often taken up by family members of the recipient, making them an integral national health-care resource for individuals with a myriad of conditions like dementia, age-related chronic conditions, and cancer. Informal caregivers are usually described as persons closely involved in offering care to older adults without monetary return.⁵ Assuming the role of an

informal caregiver can be extremely demanding and is often perceived as a chronic stressor. A meta-analysis of the physical and psychological health involving caregivers and noncaregivers found large differences in stress, depression, self-efficacy, and individual well-being between the 2 groups.⁶ Caregivers experience perceived burden, which is the negative psychological, behavioral, and physiological effects on their lives and health.⁷

Satisfaction With Life and Positive Aspects of Caregiving

Past research has shed light on the risk factors of caregiver burden, such as female sex, lower education, living with the

¹ Institute of Mental Health, Research Division, Singapore, Singapore

Received 1/25/2018. Received revised 8/3/2018. Accepted 8/7/2018.

Corresponding Author:

Rajeswari Sambasivam, Institute of Mental Health, Research Division, Singapore, Singapore.

Email: rajeswari_sambasivam@imh.com.sg

care recipient, financial difficulties, and lack of choice in assuming the role of caregiver.⁸ In addition, studies have observed that the amount of care provided and the unmet demands for psychosocial care and assistance in daily living activities were also associated with higher burden of care.^{9,10} Studies^{8,11} have traditionally documented that life satisfaction is largely influenced by the degree of burden perceived by the caregiver; caregivers with low degree of burden experience high satisfaction, while those with high degree of burden experience low satisfaction. On the contrary, studies have also found that low life satisfaction was significantly associated with high perceived burden,^{12,13} indicating a reverse relationship between life satisfaction and burden.

Caregivers also experience positive consequences throughout the caregiving process.¹⁴⁻¹⁷ Perceived gain or reward, satisfaction, or an increase in self-esteem are some of the positive effects of the caregiving relationship. A survey conducted in the United States by the National Opinion Research Center¹⁸ found that 83% of caregivers rated their caregiving experience positively and it helped strengthen their relationship with the care recipient despite being a cause of stress in the household. Lawton and colleagues¹⁹ propose a 2-factor model where emotional distress, psychological satisfaction, and growth occur simultaneously in the caregiving experience. An ability to find meaning through positive appraisals and spiritual or religious belief acts as coping mechanism in stressful situations, where caregivers feel a sense of pride and purpose in their roles. A cross-sectional study conducted among Asian family caregivers of patients with dementia in Singapore revealed that a significant predictor of gain was the use of encouragement. Spirituality and religion predicted gain indirectly via the use of encouragement.²⁰ Thus, the caregiving experience has positive aspects that are satisfying and rewarding and may improve the caregiver's psychological well-being by serving as a buffer against negative consequences.¹³

There is evidence²¹⁻²³ to suggest that positive associations with the caregiving role may be a mediation mechanism that links life satisfaction with self-perceived burden of care. Higher life satisfaction has been documented to be significantly associated with a more positive outlook on caregiving.²⁴ Caregivers tend to report higher life satisfaction even in the presence of increased burden of care contributed by positive caregiving experience.²⁵ This could be due to the caregiver's role perceived as pivotal when the care recipient has increased dependence.

The present study aims to examine the pathway of positive aspects of caregiving (PAC) in informal caregivers of older adults in Singapore. We propose that a positive outlook on the caregiving role mediates the association between satisfaction with life and burden.

Methods

Sample

The study utilized self-report data from a single-phase, cross-sectional analysis conducted with informal caregivers of older

adults in Singapore. Participants included in the study were Singaporeans or permanent residents between the ages of 21 and 65 years old, were fluent and understood English, and were current informal caregivers of at least 1 older adult aged 60 years and above. The study excluded those who were non-English-speaking and whose care recipients were long-term residents in hospice or nursing homes. The study and all the relevant materials used were approved by the National Healthcare Group Domain Specific Review Board. Trained members of the study team explained the procedures involved in the study to participants prior to obtaining their consent.

Recruitment

Participants were informal caregivers of elderly adults previously recruited in the Well-being of Singapore Elderly (WiSE) study who were agreeable to be recontacted for future studies²⁶ as well as those of elderly patients from Singapore's main psychiatric hospital, the Institute of Mental Health (IMH). Following contact via phone or e-mail, arrangements were made for a time and venue for the study to be conducted.

Data Collection

Following the consent procedure, participants completed a series of questionnaires which included sociodemographic details (age, gender, ethnicity, education level, marital and employment status, and relationship to care recipient), care needs of the care recipient, and 3 survey instruments, namely, the Zarit Burden Interview (ZBI), PAC, and the Satisfaction with Life Scale (SWLS).

Measures

Zarit Burden Interview

The ZBI is a self-reported, 22-item inventory that measures subjective burden among caregivers and examines the burden associated with functional or behavioral impairments.²⁷ Items on the scale are scored on a 5-point Likert scale which range from never (0) to nearly always (4). Total scores range from 0 to 88, with higher scores indicating greater burden. Bachner and O'Rourke²⁸ discussed that reported reliability coefficients range from $\alpha = .83$ to $\alpha = .94$, and concurrent validity with a single global rating of burden is 0.71. Zarit Burden Interview in the current study has a Cronbach α of .926.

Positive Aspects of Caregiving

The PAC is a 9-item instrument that presents statements about the caregiver's mental or affective state in the caregiving experience.²⁹ The scale is scored on a 5-point Likert scale ranging from (1) disagree a lot to (5) agree a lot and assesses caregiver's perceptions of benefits within the caregiving context such as feeling useful, appreciated, and finding meaning. Scores range from 9 to 45 and persons scoring higher indicate higher positive perception and gain from the caregiving experience. Tarlow

et al²⁹ tested PAC and reported an overall reliability of the instrument (Cronbach $\alpha = .89$); convergent validity was evaluated using Spearman rank correlation between the total score on the PAC instrument and the 4-item Well-Being ordinal subscale (Cronbach $\alpha = .72$) of the Center for Epidemiologic Studies–Depression. Cronbach α of PAC in the current study was .934.

Satisfaction With Life Scale

This 5-item questionnaire assesses the global life satisfaction of an individual and is measured on a 7-point Likert scale from strongly disagree (1) to strongly agree (7).³⁰ The scale assesses a person’s conscious evaluative judgment of their life by their own criteria. The possible range of scores is 5 to 35, with higher scores suggesting higher life satisfaction. The SWLS has reported a good convergent validity (Cronbach $\alpha = .81$) when compared with similar measure of satisfaction with life such as the Life Satisfaction Index-A.³¹ The SWLS had a Cronbach α of .877 in the present study.

Statistical Analyses

All descriptive statistics such as means and standard deviations (SDs) for continuous variables and frequencies and percentages for categorical variables were calculated using version 23 of SPSS Statistics (SPSS Inc, Chicago, Illinois). Pearson correlation matrix was calculated to provide an overview of the relationship between study variables. (SPSS PROCESS Macro, Andrew F. Hayes, Columbus, OH)³² was used to test for a mediation effect of PAC on the association between satisfaction with life as independent variable and caregiver burden as dependent variable. The mediation analyses were controlled for sociodemographic variables including age, gender, ethnicity, education, marital status, and employment statuses. Unstandardized indirect effects were computed for each of 1000 bootstrapped samples, and the 95% confidence interval (CI) was computed by determining the indirect effects at the 2.5th and 97.5th percentiles. Significant mediation effect was set if the CIs did not contain 0.

Results

Majority of the sample were caregivers from the WiSE study (n = 179, 62.8%), females (n = 184, 64.6%), and belonged to the older age group (n = 210; 73.7%; mean = 47.2 years; SD = 10.87). Caregivers were predominantly of Chinese ethnicity (n = 160; 56.1%), with Malays and Indians making up 13.3% (n = 38) and 30.5% (n = 87), respectively. Most caregivers had tertiary level education (n = 95, 33.3%), were currently married (n = 173, 60.7%), and were largely employed (n = 216, 75.8%) during the time of study. The most common recipient of care were parents (n = 224, 78.6%). Table 1 displays the socio-demographic characteristics of the sample population. Pearson correlations between study variables are presented in Table 2. The mean scores for the scales were as follows: mean = 23.15

Table 1. Sociodemographic Characteristics.

	N (%)
Sample Distribution	
Recruited from WiSE	179 (62.8)
Recruited from IMH	106 (37.2)
Age Group (in years)	
21-39	75 (26.3)
40-65	210 (73.7)
Gender	
Male	101 (35.4)
Female	184 (64.6)
Ethnicity	
Chinese	160 (56.1)
Malay	38 (13.3)
Indian	87 (30.5)
Highest Education Level	
Primary	9 (3.2)
Secondary	76 (26.7)
ITE	13 (4.6)
A Level	17 (6.0)
Diploma	74 (26.0)
Tertiary	95 (33.3)
Marital Status	
Single	85 (29.8)
Married	173 (60.7)
Separated/Divorced/Widowed	27 (9.5)
Employment Status	
Employed	216 (75.8)
Unemployed	69 (24.2)
Type of Caregiver	
Family Members/Friends/Neighbours	114 (40.0)
Paid Caregivers	75 (26.3)
No Hands-on Care Required	96 (33.7)
Relationship to Care Recipient	
Spouse	18 (6.3)
Sibling	2 (0.7)
Parent	224 (78.6)
Other relatives/Others	41 (14.4)

Abbreviations: IMH, Institute of Mental Health; ITE, Institute of Technical Education; WiSE, Well-being of Singapore Elderly.

Table 2. Means, Standard Deviations, Correlations of SWLS, ZBI, and PAC.

	Mean	SD	SWLS	ZBI	PAC
SWLS	23.56	6.62			
ZBI	23.15	15.98	−0.370 ^a		
PAC	34.55	8.19	0.237 ^a	−0.297 ^a	

Abbreviations: PAC, positive aspects of caregiving; SD, standard deviation; SWLS, Satisfaction With Life Scale; ZBI, Zarit Burden Interview.

^aCorrelation is significant at the .01 level (2-tailed).

(SD = 15.98) for ZBI, mean = 34.55 (SD = 8.19) for PAC and mean = 23.56 (SD = 6.62) for SWLS. Results showed that ZBI, PAC, and SWLS were significantly associated with each other.

The relationship between satisfaction with life (SWLS) and caregiver burden (ZBI) was mediated by PAC. As Figure 1 illustrates, the unstandardized regression coefficient between

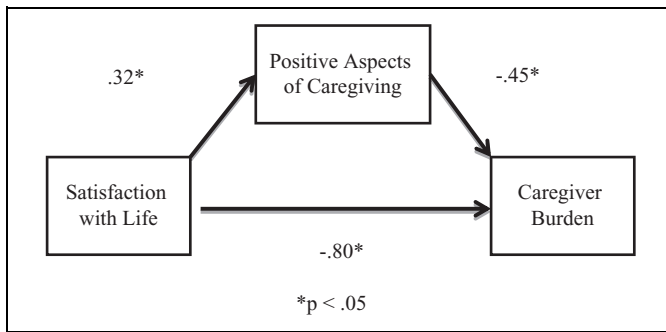


Figure 1. Mediation model with standardized coefficients.

Table 3. Path Analysis Results on Mediation Model.

	B ^{a,b}	SE	P	95% CI
1. Direct effect of satisfaction with life on ZBI	−0.80	0.15	<.001	(−1.09 to −0.50)
2. Direct effect of satisfaction with life on PAC	0.32	0.07	<.001	(0.18 to 0.46)
3. Direct effect of positive aspects of caregiving on ZBI	−0.45	0.13	<.005	(−0.70 to −0.20)
4. Indirect effect via positive aspects of caregiving	−0.14	0.07	<.001	(−0.31 to −0.04)
5. Total effect of satisfaction with life and PAC	−0.94	0.15	<.001	(−1.22 to −0.65)

Abbreviations: CI, confidence interval; PAC, Positive Aspects of Caregiving; SE, Singapore elderly; ZBI, Zarit Burden Interview.

^aControlled for age, gender, ethnicity, education, marital, employment status, and relationship to care recipient.

^bCoefficients are unstandardized.

PAC and SWLS was statistically significant, as was the unstandardized regression coefficient between PAC and ZBI. The unstandardized indirect effect was $(0.32 \times -0.45) = -0.14$. The significance of this indirect effect was tested using bootstrapping procedures. The bootstrapped unstandardized indirect effect was -0.14 , and the 95% CI ranged from -0.31 to -0.04 . Thus, the indirect effect was statistically significant. Results from the mediation analysis are shown in Table 3.

Discussion

The present study aimed to examine the positive caregiving pathway by considering life satisfaction and the burden of care on a sample of adults providing care to persons above the age of 60. Findings of the current study suggest that the perception of the burden of care can be explained by the caregiver's appraisal of their mental or affective state in the context of their caregiving duties as well as their satisfaction with life.

The results of this study support the notion that PAC may play an important role on the burden of care. Folkman's revised stress and coping model³³ suggests that an unfavorable solution to stressful experiences or emotional outcomes may bring rise to meaningful coping mechanisms. As the burden of care increases, care providers employ measures such as revising

their goals and spiritual beliefs, reappraising situations as more positive, and engaging in more constructive events. This, thus, provides caregivers a renewed sense of meaning in their roles as the condition of the care recipient progresses which could decrease burden and improve care. Evidence from the existent literature has consistently shown that PAC has a protective effect on the burden of care. A study by Hilgeman et al³⁴ found that self-affirmation and outlook on life (factors of PAC) was stable across time and intervention in caregivers of Alzheimer disease, postulating that resilience, emotional stability, and well-being vary between individuals. Caregivers can experience high levels of satisfaction and gain self-esteem regardless of care burden.¹³ Tarlow et al's²⁹ scale was utilized in this study as its "rewards" construct is aligned with the present study objective of examining caregiver gains.³⁵ Furthermore the scale has been validated in an Asian population³⁶ and also in a sample of caregivers of older adults with limited functionality.³⁷ The current study reflects high levels of perceived positive traits of caregiving, underlining its role as a protective factor in the overall perceived burden of care.

Subjective well-being comprises positive and negative affective appraisal and life satisfaction which is cognitively driven.³⁸ Individuals with high levels of satisfaction often have good problem-solving skills, perform better at work, have meaningful relationships, show positive qualities such as generosity and forgiveness, are more resistant to stress, and have better overall physical and mental health.³⁹ Previous findings have shown a negative association between burden and life satisfaction: people who feel that their role as caregivers is meaningful and beneficial had lower perceived burden of care¹³ and caregivers who had lower perceived burden engaged in more health-promoting behaviors.⁴⁰ Similarly, caregivers with higher SWL were found to perceive more gain in their roles as caregivers, possess a more positive outlook on life, and receive better social support from family and friends.²⁴ Additionally, identifying their caregiving duties favorably shows an inverse association with burden of care, which is consistent with past findings.⁴¹ Life satisfaction also mitigates the effects of stress and negative experiences. A study by Graham⁴² that looked at caregivers of long-term cancer survivors found that those who fulfilled their leisure needs had significantly lower levels of caregiver depression. On the other hand, individuals with lower satisfaction with life are at risk of psychological and social problems such as depression and anxiety as well as strained relationships with others. A study among caregivers of those with severe neuromotor and cognitive disorders found life satisfaction to be the best predictor of perceived burden,¹² highlighting its importance in the overall caregiving experience.

The ZBI expresses family caregiver burden from 5 concepts that focus on the perceptions of caregivers: sacrifice/strain, inadequacy, embarrassment/anger, dependency, and loss of control.²⁷ Several studies have shown that a positive experience of caregiving is dependent on the relationship of care provider and recipient, fewer hours of care, and when care is provided voluntarily.⁴³ In a collectivist society such as

Singapore, caregivers are more likely to experience notions of filial piety and obligation toward their duties which are intertwined by sociocultural norms.⁴⁴⁻⁴⁶ The cultural value of filial piety is unique concept in most Asian societies and plays a large role in the caregiving framework.^{47,48} Lai⁴⁸ found that burden of care is indirectly affected by filial piety and serves as a protective function by reducing the negative effects of stressors. An additional factor that affects caregiver distress is through spiritual or religious coping. Caregivers who found comfort in their religion or spiritual beliefs had better relationships with their care recipients, which in turn was associated with lower depressive symptoms, better self-esteem, and self-care.⁴⁹⁻⁵¹ As Singapore is still a largely religious country, this could play a role in mediating burden. However, results are inconclusive with some studies reporting little to no influence in the outcome of caregiver well-being.⁵² Another value that could affect the caregiving experience and caregiver burden is familism, which refers to strong feelings of attachment, dedication, and identification with family members. This is seen in highly collectivistic cultures where caregiving is deemed to be less of a burden. Despite this, results of studies examining this have been inconclusive,^{53,54} underlining the importance for more research in the cultural aspects of caregiving.

Maintaining a positive outlook on life is crucial to the well-being of the care provider. The caregiving experience necessitates the need for strong social support from both the family and community. Findings in research among caregivers have universally found an increased risk of depression owing to the responsibilities of care.⁵⁵⁻⁵⁸ Thus, it is imperative that health-care professionals assess and recognize caregiver burden. Early intervention could aid caregivers in their roles and identify support required to strike a balance between providing care and maintaining both physical and psychological well-being. Additionally, psychoeducational interventions and coping strategies can help alleviate caregiver distress. Finally, further studies into ethnic differences could shed light onto effective interventions, support, and coping methods to lessen the burden of care between ethnic groups of caregivers.

Limitations

The present study had certain limitations. The findings were based on a cross-sectional data and thus are unable to determine causation. As caregiving demands and response change over time, future research should include longitudinal studies. The inclusion criterion was limited to caregivers who were able to read and understand the English questionnaire, thus restricting generalizability for caregivers with less education. Part of the sample was participants who had previously participated in the WiSE study which had a response rate of 65.6%; there was, however, no attrition data collected for the present study.

The mediation analysis was based on a classical approach⁵⁹ to determine the mediation effects of PAC on caregiver burden and vice versa. According to Baron and Kenny,⁵⁹ the following criteria need to be satisfied for a variable to be considered a mediator: (1) the exposure variable should be associated with

the mediator, (2) the mediator should be associated with the outcome, (3) the exposure should be associated with the outcome, and (4) when controlling for the mediator, the association between the exposure and outcome should be reduced or to be nonsignificant to indicate partial or complete mediation effects. However, these requirements (1-4) have been criticized by many researchers as they are often assessed using significance testing and assume no exposure–mediator interaction.⁶⁰ Moreover, due to the cross-sectional nature of this study, we are unable to confirm the temporal ordering of the relationships between satisfaction, PAC, and caregiver burden that the mediation suggests; association does not necessarily imply the temporality. Thus, we recognize that this is an interesting area which can be studied and explored in future studies.

While the study examined positive caregiving characteristics among caregivers, it did not examine other potential mediators such as social support, caregiver resilience, or the quality of relationship between caregivers and care recipients. Also, the study did not have information on variables such as amount of caregiving and mental health status of care recipients (eg stage of dementia, behavioral problems) which affect caregiver burden. Finally, due to the sensitive nature of the study, participants included may present a social desirability bias in an effort to be viewed favorably.

Conclusions

Perceiving caregiving as a positive experience is essential in alleviating burden in persons providing care to older adults. Further research toward caregiving could also help shed light onto the protective factors of sociocultural norms. Findings of the current study underscore the importance of an optimistic outlook that can help manage the responsibilities of caregiving and offers a sense of significance and value to the caregivers. It is undeniable that efforts in reducing burden require further examination as it is critical to the psychological well-being of caregivers.

Acknowledgments

The authors thank the support from Singapore Ministry of Health's National Medical Research Council under the Centre Grant Programme.

Declaration of Conflicting Interests

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

Funding

The author(s) disclosed receipt of the following financial support for the research, authorship, and/or publication of this article: The study was funded by the Singapore Ministry of Health's National Medical Research Council under the Centre Grant Programme (Grant No.: NMRC/CG/004/2013).

References

1. Murray C, Barber R, Foreman K, et al. Global, regional, and national disability-adjusted life years (DALYs) for 306 diseases

- and injuries and healthy life expectancy (HALE) for 188 countries, 1990-2013: quantifying the epidemiological transition. *Lancet*. 2015;386(10009):2145-2191. doi:10.1016/s0140-6736(15)61340-x.
2. World Health Organization. *World Report on Ageing And Health*. Geneva, Switzerland: World Health Organization; 2015.
 3. Gibson M, Houser A. Valuing the invaluable: a new look at the economic value of family caregiving. *Issue Brief (Public Policy Institute (American Association of Retired Persons))*. 2007; IB82(IB82):1-12.
 4. Abdin E, Subramaniam M, Achilla E, et al. The societal cost of dementia in Singapore: results from the WiSE study. *J Alzheimers Dis*. 2016;51(2):439-449. doi:10.3233/jad-150930.
 5. Feinberg L, Whitlatch C. Family caregivers and in-home respite options. *J Gerontol Soc Work*. 1999;30(3-4):9-28. doi:10.1300/j083v30n03_03.
 6. Pinquart M, Sörensen S. Associations of stressors and uplifts of caregiving with caregiver burden and depressive mood: a meta-analysis. *J Gerontol B Psychol Sci Soc Sci*. 2003;58(2):P112-P128. doi:10.1093/geronb/58.2.p112.
 7. Bevans M, Sternberg E. Caregiving burden, stress, and health effects among family caregivers of adult cancer patients. *JAMA*. 2012;307(4). doi:10.1001/jama.2012.29.
 8. Adelman R, Tmanova L, Delgado D, Dion S, Lachs M. Caregiver burden. *JAMA*. 2014;311(10):1052. doi:10.1001/jama.2014.304.
 9. Yates M, Tennstedt S, Chang B. Contributors to and mediators of psychological well-being for informal caregivers. *J Gerontol B Psychol Sci Soc Sci*. 1999;54B(1):P12-P22. doi:10.1093/geronb/54b.1.p12.
 10. Vaingankar J, Subramaniam M, Picco L, et al. Perceived unmet needs of informal caregivers of people with dementia in Singapore. *Int Psychogeriatr*. 2013;25(10):1605-1619. doi:10.1017/s1041610213001051.
 11. Caldeira R, Neri A, Batistoni S, Cachioni M. Variables associated with the life satisfaction of elderly caregivers of chronically ill and dependent elderly relatives. *Revista Brasileira de Geriatria e Gerontologia*. 2017;20(4):502-515.
 12. Fianco A, Sartori R, Negri L, Lorini S, Valle G, Fave A. The relationship between burden and well-being among caregivers of Italian people diagnosed with severe neuromotor and cognitive disorders. *Res Dev Disabil*. 2015;39:43-54.
 13. Haley W, LaMonde L, Han B, Burton A, Schonwetter R. Predictors of depression and life satisfaction among spousal caregivers in hospice: application of a stress process model. *J Palliat Med*. 2003;6(2):215-224.
 14. Cohen C, Gold D, Shulman K, Zuccherro C. Positive aspects in caregiving: an overlooked variable in research. *Can J Aging*. 1994;13(03):378-391. doi:10.1017/s071498080000619x.
 15. Cohen C, Colantonio A, Vernich L. Positive aspects of caregiving: rounding out the caregiver experience. *Int J Geriatr Psychiatry*. 2002;17(2):184-188. doi:10.1002/gps.561.
 16. Beach S, Schulz R, Yee J, Jackson S. Negative and positive health effects of caring for a disabled spouse: longitudinal findings from the caregiver health effects study. *Psychol Aging*. 2000;15(2):259-271. doi:10.1037//0882-7974.15.2.259.
 17. Harmell A, Chattillion E, Roepke S, Mausbach B. A review of the psychobiology of dementia caregiving: a focus on resilience factors. *Curr Psychiatry Rep*. 2011;13(3):219-224. doi:10.1007/s11920-011-0187-1.
 18. National Opinion Research Center. *Long term care in America: Expectations and realities*. Chicago, IL: The Associated Press and NORC; 2014.
 19. Lawton M, Moss M, Kleban M, Glicksman A, Rovine M. A two-factor model of caregiving appraisal and psychological well-being. *J Gerontol*. 1991;46(4):P181-P189.
 20. Lim J, Griva K, Goh J, Chionh H, Yap P. Coping strategies influence caregiver outcomes among Asian family caregivers of persons with dementia in Singapore. *Alzheimer Dis Assoc Disord*. 2011;25(1):34-41.
 21. Kruithof W, Visser-Meily J, Post M. Positive caregiving experiences are associated with life satisfaction in spouses of stroke survivors. *J Stroke Cerebrovasc Dis*. 2012;21(8):801-807.
 22. Kulhara P, Kate N, Grover S, Nehra R. Positive aspects of caregiving in schizophrenia: a review. *World J Psychiatry*. 2012;2(3):43. doi:10.5498/wjp.v2.i3.43.
 23. Abdollahpour I, Nedjat S, Salimi Y. Positive aspects of caregiving and caregiver burden: a study of caregivers of patients with dementia. *J Geriatr Psychiatry Neurol*. 2017;31(1):34-38. doi:10.1177/0891988717743590.
 24. Chappell N, Reid R. Burden and well-being among caregivers: examining the distinction. *Gerontologist*. 2002;42(6):772-780.
 25. Araújo L, Brandão D, Duarte N, et al. Life satisfaction and positive aspects of caregiving among centenarians proxies: the more dependent the better?. *Gerontologist*. 2015;55(suppl_2):657-657. doi:10.1093/geront/gnv344.05.
 26. Subramaniam M, Chong SA, Vaingankar JA, et al. Prevalence of dementia in people aged 60 years and above: results from the WiSE study. *J Alzheimers Dis*. 2015;45(4):1127-1138.
 27. Zarit S, Reeve K, Bach-Peterson J. Relatives of the impaired elderly: correlates of feelings of burden. *Gerontologist*. 1980;20(6):649-655.
 28. Bachner Y, O'Rourke N. Reliability generalization of responses by care providers to the Zarit Burden Interview. *Aging Ment Health*. 2007;11(6):678-685. doi:10.1080/13607860701529965.
 29. Tarlow B, Wisniewski S, Belle S, Rubert M, Ory M, Gallagher-Thompson D. Positive aspects of caregiving. *Research on Aging*. 2004;26(4):429-453.
 30. Diener ED, Emmons RA, Larsen RJ, Griffin S. The satisfaction with life scale. *J Pers Assess*. 1985;49(1):71-75.
 31. Pavot W, Diener E, Colvin C, Sandvik E. Further validation of the Satisfaction With Life Scale: evidence for the cross-method convergence of well-being measures. *J Pers Assess*. 1991;57(1):149-161. doi:10.1207/s15327752jpa5701_17.
 32. Hayes A. *Introduction to Mediation, Moderation, and Conditional Process Analysis*. 2nd ed. New York, NY: Guilford; 2013.
 33. Folkman S. Positive psychological states and coping with severe stress. *Soc Sci Med*. 1997;45(8):1207-1221.
 34. Hilgeman MM, Allen RS, DeCoster J, Burgio LD. Positive aspects of caregiving as a moderator of treatment outcome over 12 months. *Psychol Aging*. 2007;22(2):361-371. doi:10.1037/0882-7974.22.2.361.

35. Stansfeld J, Stoner C, Wenborn J, Vernooij-Dassen M, Moniz-Cook E, Orrell M. Positive psychology outcome measures for family caregivers of people living with dementia: a systematic review. *Int Psychogeriatr*. 2017;29(08):1281-1296.
36. Lou V, Lau B, Cheung K. Positive aspects of caregiving (PAC): scale validation among Chinese dementia caregivers (CG). *Arch Gerontol Geriatr*. 2015;60(2):299-306.
37. Siow J, Chan A, Østbye T, Cheng G, Malhotra R. Validity and reliability of the Positive Aspects of Caregiving (PAC) Scale and development of Its Shorter Version (S-PAC) among family caregivers of older adults. *Gerontologist*. 2017;57(4):75-84.
38. Diener E. Subjective well-being. *Psychol Bull*. 2018;95(3):542-575.
39. Frisch M. Improving mental and physical health care through quality of life therapy and assessment. In: Diener E, Rahtz D, eds. *Advances in Quality of Life Theory and Research*. Netherlands: Kluwer Academic; 2000:207-241.
40. Sisk RJ. Caregiver burden and health promotion. *Int J Nurs Stud*. 2000;37(1):37-43.
41. Hsiao C, Van Riper M. Individual and family adaptation in Taiwanese families of individuals with severe and persistent mental illness (SPMI). *Res Nurs Health*. 2009;32:307-320.
42. Graham A. *Caregivers of long-term cancer survivors: the role leisure plays in improving psychological well-being* (Master's Thesis). Waterloo, CA: University of Waterloo; 2018.
43. López J, López-Arrieta J, Crespo M. Factors associated with the positive impact of caring for elderly and dependent relatives. *Arch Gerontol Geriatr*. 2005;41(1):81-94.
44. Wong O, Chau B. The evolving role of filial piety in eldercare in Hong Kong. *AJSSS*. 2006;34(4):600-617.
45. Pinquart M, Sörensen S. Ethnic differences in stressors, resources, and psychological outcomes of family caregiving: a meta-analysis. *Gerontologist*. 2005;45(1):90-106.
46. Lee Y, Sung K. Cultural differences in caregiving motivations for demented parents: Korean caregivers versus American caregivers. *Int J Aging Hum Dev*. 1997;44(2):115-127.
47. Zhan H, Montgomery R. Gender and elder care in China the influence of filial piety and structural constraints. *Gender Soc*. 2003;17(2):209-229.
48. Lai D. Filial piety, caregiving appraisal, and caregiving burden. *Research on Aging*. 2010;32(2):200-223.
49. Murray-Swank A, Lucksted A, Medoff D, Yang Y, Wohlheiter K, Dixon L. Religiosity, psychosocial adjustment, and subjective burden of persons who care for those with mental illness. *Psychiatr Serv*. 2006;57(3):361-365.
50. Pearce M, Singer J, Prigerson H. Religious coping among caregivers of terminally ill cancer patients. *J Health Psychol*. 2006;11(5):743-759.
51. Chang B, Noonan A, Tennstedt S. The role of religion/spirituality in coping with caregiving for disabled elders. *Gerontologist*. 1998;38(4):463-470.
52. Herrera A, Lee J, Nanyonjo R, Laufman L, Torres-Vigil I. Religious coping and caregiver well-being in Mexican-American families. *Aging Ment Health*. 2009;13(1):84-91.
53. Kim J, Knight B, Longmire C. The role of familism in stress and coping processes among African American and white dementia caregivers: effects on mental and physical health. *Health Psychol*. 2007;26(5):564-576.
54. Robinson G, Knight B. Preliminary study investigating acculturation, cultural values, and psychological distress in Latino caregivers of dementia patients. *J Ment Health Aging*. 2004;10(3):183-194.
55. Dunkin J, Anderson-Hanley C. Dementia caregiver burden: a review of the literature and guidelines for assessment and intervention. *Neurology*. 1998;51(issue 1, suppl 1):S53-S60.
56. Pinquart M, Sörensen S. Differences between caregivers and non-caregivers in psychological health and physical health: a meta-analysis. *Psychol Aging*. 2003;18(2):250-267.
57. Grunfeld E. Family caregiver burden: results of a longitudinal study of breast cancer patients and their principal caregivers. *CMAJ*. 2004;170(12):1795-1801.
58. Sherwood P, Given C, Given B, von Eye A. Caregiver burden and depressive symptoms. *J Aging Health*. 2005;17(2):125-147.
59. Baron R, Kenny D. The moderator-mediator variable distinction in social psychological research: conceptual, strategic, and statistical considerations. *J Pers Soc Psychol*. 1986;51(6):1173-1182.
60. MacKinnon D. *Introduction to Statistical Mediation Analysis*. New York, NY: Lawrence Erlbaum Associates; 2008.