Resilience as a protective factor against elder abuse by family caregivers: findings from a cross-sectional study in Hong Kong

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Abstract

Purpose – *This study aims to explore the risk and protective factors of abuse on older adults by family caregivers, with a special focus on the protective role of caregiver resilience in elder abuse.*

Design/methodology/approach – *This cross-sectional survey was conducted on a purposive sample of 600 family caregivers of community-dwelling older adults in Hong Kong (mean age = 71.04 and female = 67.2%). Caregivers reported in a guided interview about elder abuse behaviours, caregiver burden, care recipients' agitated behaviours, caregiver resilience, self-efficacy, social support and basic demographic characteristics. Hierarchical linear regression analyses were conducted to examine the predictors of different forms of elder abuse.*

Findings – *Caregiver resilience was predictive of lower levels of verbal abuse, physical abuse, injury and financial exploitation but not potentially harmful behaviour (PHB). Social support was independent with all forms of elder abuse, while self-efficacy predicted greater physical abuse after the adjustment of confounding variables. Caregiver burden and agitated behaviours by care recipients remained as significant risk factors in the final models when protective factors were considered.*

Research limitations/implications – *This study extends current knowledge on the protecting role of resilience in elder abuse in family caregiving. Mixed findings revealed on social support and self-efficacy also highlight the complexity of the prediction of caregiver abuse. Further research should address this area.*

Practical implications – *The findings of this study warrant the inclusion of caregiver resilience as a key component in developing interventions to prevent elder abuse. Addressing caregiver burden and agitated behaviours have the potential in preventing elder abuse.*

Social implications – *The findings raise awareness of the importance of supporting caregivers in the community to prevent elder abuse.*

Originality/value – *Research concerning the protective factors of elder abuse is in a preliminary stage. To the best of the authors' knowledge, this study is among the first which successfully demonstrates the protective role of resilience in caregiver abuse on older adults. The findings shed invaluable light on the design of effective interventions.*

Keywords *Elder abuse, Caregiving, Resilience, Social support, Self-efficacy, Caregiver burden, Older adults*

Paper type *Research paper*

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Introduction

Elder abuse represents a prevalent public health issue with tremendous negative consequences on individuals' health, social and economic outcomes. It is estimated in a meta-analysis that one in every six older adults in the world has experienced some form of abuse or mistreatment annually (Yon *et al.*, 2017). The World Health Organization (WHO, 2002) defines elder abuse as "a single or repeated act, or lack of appropriate action,

occurring within any relationship where there is an expectation of trust, which causes harm or distress to an older person (p. 152)," of which the main forms include physical, emotional, psychological, sexual, financial and organisational abuse, as well as neglect (Mikton *et al.*, 2022). The prevalence rates of elder abuse can vary to a great extent according to the types of abuse, study samples and research methodologies. According to an international review on 18 empirical studies (Pillemer *et al.*, 2016), the aggregated prevalence of elder abuse ranges from 2% to 36%, with the rates higher in developing countries (e.g. China: 36% and Nigeria: 30%) and lower in developed countries (e.g. Canada: 4% and the USA: 10%).

Elder abuse often occurs in caregiving relationships, where older adults are victimised by caregivers they confide in most (Orfila *et al.*, 2018). Older adults' dependence on caregivers, along with deteriorating health conditions, may expose them to abuse and neglect by family caregivers (Sadrollahi *et al.*, 2020). There has been evidence in the European and North American literature that many elder abuse incidents found in domestic settings are perpetrated by family members, mostly spouses and adult children, who take on the caregiving role (O'Keeffe *et al.*, 2007; Iborra, 2008; Thomas, 2000). It has been estimated that more than one fourth of older adults who are cared for by informal caregivers have experienced some form of elder abuse, with the most prevalent form being psychological abuse and emotional neglect (17%), followed by physical abuse (7%) and rejection (4%) (Heravi Karimoei *et al.*, 2012). In cases involving physical or mental impairments (e.g. dementia), older care recipients can be even more vulnerable to abuse because of the decline in their ability to discuss feelings or remember and recall experiences (Cooper *et al.*, 2008).

As the global population ages and diversifies, the number of elder abuse victims can expand rapidly if the prevalence rates remain constant (Mikton *et al.*, 2022). The rising elder population underscores the pressing need of cost-effective measures to stop elder abuse, especially in caregiving settings. In response to this, a growing number of research has been focused on the development of effective preventions and interventions (Stahl, 2015). However, some inventions have been regarded as ineffective or even counterproductive (Daly, 2011), and one of the major reasons behind is that most of them were not developed with strong theoretical foundations or empirical evidence (Jackson and Hafemeister, 2016).

The development of effective interventions relies heavily on an understanding of the causes and predictors of elder abuse (Pillemer *et al.*, 2016), and the importance of identifying risk and protective factors has been highlighted in the recent global mega-map project commissioned by the WHO (Mikton *et al.*, 2022). While there are many existing theories explaining elder abuse, caregiver stress theory is the most widely adopted when accounting for caregiver abuse (Fundinho *et al.*, 2021). The central premise of caregiver stress theory is that caregiving is a stressful situation, and the theory posits that elder abuse happens when an overburdened caregiver unleashes his or her negative emotions on the care recipient (Pillemer and Wolf, 1986). Caregiver burden, the multi-faceted strain perceived by caregivers when providing care, may emerge from different stressors. For example, they may be individual factors such as personal health problems and coping skills; care recipient factors such as agitated or disruptive behaviours and high levels of dependency; or environmental factors such as financial difficulties and social isolation (Fundinho *et al.*, 2021). Chronic exposure to burden can result in detrimental health consequences (Mahoney *et al.*, 2005), which may then lead to poor caregiving quality and greater risks of committing abuse (Given *et al.*, 1999).

While caregiving is often viewed as stressful, not every caregiver is abusive. Understanding what contributes to the ability of some caregivers to thrive is an essential step to developing effective interventions. It is, therefore, of great importance to explore protective factors that may buffer the effects of caregiver burden and other risk factors. Unfortunately, when compared with the literature on the risk factors of caregiver abuse, research on protective

factors is still lacked. According to the stress process model (Pearlin *et al.*, 1990), personal and social resources can intervene at multiple points along the process of stress perception. For example, social support has consistently been found to buffer the impact of risk factors on elder abuse. It is often viewed as an external resource that plays a protective role in caregiver burden (Shiba *et al.*, 2016). A lack of support networks and poor social support are major risk factors for elder abuse (Melchiorre *et al.*, 2013). As another well-documented protective factor, self-efficacy refers to an individual's belief in their ability to accomplish specific goals (Bandura, 1997) and plays a crucial role in caregiver stress and burnout (Fortinsky *et al.*, 2002). It has been shown that interventions promoting self-efficacy among caregivers have been found to mitigate perceived inefficacy and burnout (Evers *et al.*, 2001; Mackenzie and Peragine, 2003).

Resilience, a multi-dimensional psychological construct referring to the human regenerative capacity to maintain relatively stable, healthy levels of functioning in the face of potentially disruptive events (Agaibi and Wilson, 2005; Edwards *et al.*, 2015), may also help explain the successful adaption among non-abusive caregivers. Resilience can be conceptualised as an internal resource for caregivers to mitigate stress and challenges in the caregiving process, allowing them to cope with problems and crises in a way leaving them feeling stronger and wiser than before (Edwards *et al.*, 2015). Although the role of caregiver resilience in elder abuse has yet been known clearly because of the scarcity of research, there has been evidence supporting its usefulness in safeguarding caregivers of cancer survivors (Üzur-Özçetïn and Sümeyye İlayda Dursun, 2010). In cancer care, highly resilient caregivers report less burden and lower sense of helplessness by having reduced negative effects of stressful and adverse situations through adaption (Hornor, 2017).

Identifying protective factors in caregivers is extremely relevant, as it helps in the design of effective strategies to prevent burden, promote well-beings and reduce elder abuse. However, despite the burgeoning of literature devoted to topics related to resilience, there is still a lack of strong empirical evidence supporting its role in caregiver abuse on older adults. To date, most research has only addressed the dual relationships (e.g. between resilience and burden or between burden and elder abuse) (Ong *et al.*, 2018), and few have explored the relationships among different risk and protective factors in the same study. To fill the research gap, the present study sets out to examine the risk factors and protective factors of elder abuse in family caregiving, with a special focus on the predictive role of caregiver resilience in their perpetration of abuse against care recipients. In particular, this study aims at answering the following research questions:

RQ1. What are the effects of caregiver burden and agitated behaviours of the care recipients on caregivers' perpetration of elder abuse?

RQ2. Can caregiver resilience, self-efficacy and social support serve as protective factors of elder abuse in informal caregiving settings?

Methods

Design and participants

The present study used data from a cross-sectional, retrospective survey on family caregiving of older adults conducted in Hong Kong. Target respondents were family caregivers who were providing informal care to community-dwelling older adults who were 60 years old or above, recruited by a convenient sampling procedure in the elderly service centres. Family caregivers providing at least 10 h of informal care per week to older adults, aged 18 years or above and residing in Hong Kong during the study period were eligible to participate in the survey. As this study focused only on informal family caregiving, formal or paid caregivers were excluded. Our target sample size was 600, which was approximately 0.06% of the total population of community-dwelling older adults who needed informal care

by children, spouses, relatives or close friends in Hong Kong (Census and Statistics Department, 2009).

Procedure

Eligible caregivers were recruited by referral from 168 neighbourhood elderly centres and 41 district elderly community centres, which were the major source of community support services for community-dwelling older adults and their caregivers in Hong Kong. Caregivers were referred by staff members in the services centres and contacted for a face-to-face interview guided by trained research assistants under close supervision of the research team. Interviews were taken place in quiet corners at the elderly centres where the participants were recruited after informed consent was obtained. In this study, caregivers were the sole respondents of the interviews. Each caregiver received an incentive of $100 Hong Kong dollars (approximately US$12) upon completion of the interview. Research ethics of all procedures and protocols in the present study were approved by the institutional review board of the authors' affiliated university.

Instruments

Dependent variable. Elder abuse. Five forms of elder abuse were assessed in the present study, namely, verbal abuse, physical abuse, injury, financial exploitation and PHB. Verbal abuse, physical abuse and injury were measured with the adapted version of the 8-item verbal aggression, 11-item physical assault and 6-item injury subscales of the Revised Conflict Tactics Scale, respectively (CTS-2; Straus *et al.*, 1996). Financial exploitation was assessed with the 14-item Old Adults Financial Exploitation Measure (Conrad *et al.*, 2008), while PHB was measured using 10 items modified from the Conflict Tactics Scale to capture adverse behaviours that no legal intervention was required (e.g. screaming, handling roughly, etc.; Macneil *et al.*, 2010). All items were rated on a seven-point Likert scale, from 0 (never) to 6 (always), according to the frequency that the specific violent act was performed by the caregiver respondent against their care recipient. Item scores were averaged to give subscale scores, and higher scores indicated more frequently perpetration of the specific type of abuse.

Risk factors Caregiver burden. Subjective burden perceived by caregivers was measured using the 22-item Zarit Burden Interview (Zarit *et al.*, 1985). Items were rated on a five-point Likert scale, ranging from 0 (never) to 4 (nearly always).

Agitated behaviours by care recipients. Care recipients' agitation was measured with the 29-item Cohen-Mansfield Agitation Inventory (Cohen-Mansfield *et al.*, 1989). The Cohen-Mansfield Agitation Inventory was originally used to assess agitated behaviours by older adults in nursing homes. In the present study, caregivers provided proxy reports on their care recipients' behaviours by rating the items on a seven-point Likert scale from 1 (never engages in) to 7 (manifests on the average of several times per hour).

Protective factors. Resilience. Caregiver resilience was measured using the Connor Davidson Resilience Scale (Connor and Davidson, 2003), a ten-item scale assessing how well an individual was equipped to adapt to stressful events. Items were rated on a five-point Likert scale, ranging from −0 (not true at all) to 4 (true nearly all of the time).

Self-efficacy. Caregiver self-efficacy was measured with the ten-item Generalised Self-Efficacy Scale (Schwarzer and Jerusalem, 1995), which assessed the level of individuals' belief in their own ability to handle novel or hard situations and to deal with the associated problems and obstacles. Items were rated on a four-point Likert scale from 1 (not at all true) to 4 (exactly true).

Social support. Caregiver perceived social support was measured using the 15-item social support scale developed by Wills (1985). Items were classified into one of the two

subscales, including the seven-item emotional support subscale and the eight-item instrumental support subscale. Caregivers were asked to rate the extent to which they received specific forms of support from others on a five-point Likert scale.

Covariates. Demographic characteristics. Caregivers were asked to provide basic information about their background, including age, gender, highest education attainment, marital status and employment status. They were also asked to indicate their relationship with their care recipient, as well as the number of days they were living with the care recipient per month.

Data analysis

Descriptive statistics including mean, standard deviations and percentages were first obtained for each of the study variables where appropriate. Demographic variables such as age, education attainment and marital status were compared for any gender difference.

To explore the effects of different predictors on elder abuse, a series of hierarchical linear regression analyses was conducted. Multicollinearity was checked before the performance of all regression analyses, and a variance inflation factor of 10 would indicate the presence of multicollinearity. In the present study, each of the five forms of elder abuse was used as the dependent variable in each model, while predictor variables were grouped into three blocks and were entered to the regression models in the following sequence:

1. Block 1, which included age, gender, caregiver's relationship with the care recipient and number of days living with the care recipient per month;
2. Block 2, which included caregiver burden and agitated behaviours exhibited by care recipients; and
3. Block 3, which included caregiver resilience, self-efficacy and social support.

Results

Table 1 shows the demographic characteristics of the caregiver respondents in the present study. Among the 600 family caregivers successfully interviewed (mean age = 71.04 years and SD = 10.59), 67.4% were women. More than half of the respondents received secondary education or above (59.9%), and most had been retired (62.1%). A majority was married (87.5%), while the remaining were mostly single (9.4%). Approximately 77.9% of the caregivers were spouse or partner of the care recipient, 19.3% were children, 2.4% were siblings and 0.5% were extended family members (e.g. grandchild). On average, these family caregivers spent 26.41 days (SD = 10.13) per month living with their care recipient. Gender differences were found in the employment status and the marital status of the sample.

Table 2 shows the mean scores, standard deviations and internal consistencies of all study variables. Verbal abuse was the most frequently reported form of elder abuse (mean = 3.63 and SD = 5.72), followed by PHB (mean = 1.81 and SD = 3.63) and financial exploitation (mean = 1.47 and SD = 3.88). Comparatively, physical abuse was less common (mean = 0.31 and SD = 1.33), and injury resulted from elder abuse was least reported among the caregiver respondents (mean = 0.07 and SD = 0.52).

Table 3 presents the findings of the hierarchical linear regression analyses with the five forms of elder abuse as dependent variables. Caregiver burden (β = 0.31 and $p < 0.001$) and agitated behaviours exhibited by care recipients (β = 0.32 and $p < 0.001$) were two robust factors that positively predicted verbal abuse which explained 26.8% of its variance together. The two remained as significant risk factors after the inclusion of protective factors in the final model (β_{burden} = 0.28 and $p < 0.001$; $\beta_{\textit{agitated behaviours}}$ = 0.32 and $p < 0.001$). Caregiver resilience was the only significant protective factor that negatively predicted

Table 1 Demographic characteristics of the caregivers ($N = 600$)

Variable	*Overall* (N = *600*)	n *(%)* *Female* (n = *403*)	*Male* (n = *197*)	t *or* X^2 *test*
Age, mean (SD)	71.04 (10.59)	69.54 (10.00)	74.22 (11.14)	−4.916
Education attainment				5.276
Primary or lower	240 (40.2)	163 (40.7)	76 (39.1)	
Secondary	257 (43.1)	178 (44.4)	78 (40.2)	
Tertiary or higher	100 (16.8)	60 (15.0)	40 (20.6)	
Employment status				106.565***
Employed	62 (10.4)	42 (10.5)	20 (10.4)	
Retired	371 (62.1)	207 (51.6)	163 (84.0)	
Unemployed	21 (3.5)	13 (3.2)	8 (4.1)	
Homemaker	143 (24.0)	139 (34.7)	3 (1.6)	
Marital status				11.563**
Single	56 (9.4)	48 (11.9)	8 (4.1)	
Married	524 (87.5)	340 (84.4)	182 (93.8)	
Separated, divorced, widowed or other	19 (3.2)	15 (3.7)	4 (2.1)	
Relationship with care recipient				5.362
Spouse or partner	465 (77.9)	302 (75.1)	161 (83.4)	
Sibling	14 (2.4)	11 (2.7)	3 (1.6)	
Child	115 (19.3)	87 (21.6)	28 (14.5)	
Other	3 (0.5)	2 (0.5)	1 (0.5)	
Number of days living with care recipient	26.41 (10.13)	26.27 (10.27)	26.68 (9.88)	−0.468

Notes: $^{*}p < 0.05$; $^{**}p < 0.01$; and $^{***}p < 0.001$

Table 2 Means, standard deviations and internal consistencies of the study variables ($N = 600$)

Variable	*Range of score*	*Mean*	*SD*	*Cronbach's alpha*
Elder abuse				
Verbal abuse	0–6	3.63	5.72	0.76
Physical abuse	0–6	0.31	1.33	0.53
Injury	0–6	0.07	0.52	0.64
Financial exploitation	0–6	1.47	3.88	0.73
Potentially harmful behaviour	0–6	1.81	3.63	0.62
Caregiver burden	0–88	28.78	21.39	0.96
Agitated behaviour by care recipient	29–116	38.31	12.43	0.89
Resilience	0–40	25.70	7.32	0.94
Self-efficacy	10–40	27.71	4.78	0.93
Social support				
Emotional social support	0–28	17.59	6.36	0.89
Instrumental social support	0–32	16.50	8.23	0.93

verbal abuse in the final model when demographic background and other risk factors were adjusted for ($\beta = -0.10$ and $p < 0.05$). The final model explained 30.7% of variance of verbal abuse ($F_{10, 537} = 25.240$ and $p < 0.001$).

Similar patterns were observed in the models of physical abuse and financial exploitation. Caregiver burden and agitated behaviours significantly predicted greater physical abuse ($\beta_{burden} = 0.13$ and $p < 0.05$; $\beta_{agitated\ behaviours} = 0.27$ and $p < 0.001$) and financial exploitation ($\beta_{burden} = 0.17$ and $p < 0.001$; $\beta_{agitated\ behaviours} = 0.14$ and $p < 0.01$), even when protective factors were added in the final models. On the other hand, caregiver

Table 3 Hierarchical regression models of the five aspects of elder abuse ($N = 600$)

Variable	*Verbal abuse* B [95% CI]	SE	β	*Physical abuse* B [95% CI]	SE	β	*Injury* B [95% CI]	SE	β	*Financial exploitation* B [95% CI]	SE	β	*Potentially harmful behaviour* B [95% CI]	SE	β
Model 1															
Age	−0.03 [−0.09, 0.03]	0.03	−0.05	−0.01 [−0.02, 0.00]	0.01	−0.07	−0.00 [−0.01, 0.00]	0.00	−0.07	−0.04 [−0.08, 0.00]	0.02	−0.10	0.01 [−0.03, 00.04]	0.02	0.02
Gender[a]	−2.22 [−3.24, −1.19]	0.52	−0.18***	−0.22 [−0.46, 0.02]	0.12	−0.08	−0.07 [−0.17, 0.02]	0.05	−0.06	−0.94 [−1.67, −0.23]	0.36	−0.11*	−1.17 [−1.81, −0.52]	0.33	−0.15***
Relationship with CR[b]	−0.34 [−1.75, 1.08]	0.72	−0.02	0.13 [−0.19, 0.46]	0.17	0.04	−0.02 [−0.15, 0.11]	0.07	−0.01	−0.47 [−1.44, 0.51]	0.50	−0.05	−0.28 [−1.17, 0.61]	0.45	0.03
Number of days living with CR	−0.34 [−0.88, 0.21]	0.28	−0.05	−0.02 [−0.15, 0.11]	0.07	−0.01	−0.04 [−0.09, 0.01]	0.03	−0.07	−0.04 [−0.40, 0.33]	0.19	−0.01	−0.01 [−0.35, 0.34]	0.18	−0.00
Adjusted R^2	0.036			0.004			0.006			0.029			0.017		
F	6.242***			1.539			1.910			5.010***			3.373**		
Model 2															
Age	−0.05 [−0.10, 0.00]	0.03	−0.10*	−0.01 [−0.02, 0.00]	0.01	−0.07	−0.00 [−0.01, 0.00]	0.00	−0.05	−0.05 [−0.09, −0.01]	0.02	−0.13*	−0.01 [−0.04, 0.03]	0.02	−0.02
Gender[a]	−1.33 [−2.22, −0.44]	0.45	−0.11**	−0.08 [−0.29, 0.14]	0.11	−0.03	−0.03 [−0.12, 0.06]	0.04	−0.03	−0.64 [−1.33, 0.06]	0.35	−0.08	−0.63 [−1.20, −0.05]	0.29	−0.08*
Relationship with CR[b]	1.55 [0.31, 2.79]	0.63	0.11*	0.30 [0.00, 0.60]	0.15	0.10*	−0.00 [−0.12, 0.12]	0.06	0.00	0.24 [−0.72, 1.20]	0.49	0.03	0.85 [0.05, 1.64]	0.41	0.10*
Number of days living with CR	−0.26 [−0.76, 0.24]	0.25	−0.04	0.00 [−0.12, 0.12]	0.06	0.00	−0.04 [−0.09, 0.01]	0.02	−0.07	−0.08 [−0.45, 0.30]	0.19	−0.02	0.08 [−0.24, 0.40]	0.16	0.02
Caregiver burden	0.08 [0.06, 0.11]	0.01	0.31***	0.01 [0.00, 0.01]	0.00	0.14**	0.00 [−0.00, 0.00]	0.00	0.01	0.04 [0.03, 0.06]	0.01	0.24***	0.05 [0.04, 0.07]	0.01	0.30***
Agitated behaviours by CR	0.15 [0.11, 0.19]	0.02	0.32***	0.03 [0.02, 0.04]	0.01	0.26***	0.01 [0.01, 0.01]	0.00	0.24***	0.04 [0.01, 0.07]	0.02	0.13**	0.09 [0.07, 0.12]	0.01	0.31***
Adjusted R^2	0.304			0.114			0.058			0.121			0.267		
F	41.340***			13.100***			6.849***			13.170***			34.740***		
Model 3															
Age	−0.05 [−0.10, 0.00]	0.03	−0.10*	−0.01 [−0.02, 0.01]	0.01	−0.06	−0.00 [−0.01, 0.00]	0.00	−0.04	−0.06 [−0.10, −0.01]	0.02	−0.14**	−0.01 [−0.04, 0.02]	0.02	−0.03
Gender[a]	−1.36 [−2.26, −0.46]	0.46	−0.11**	−0.08 [−0.30, 0.14]	0.11	−0.03	−0.03 [−0.12, 0.06]	0.05	−0.03	−0.59 [−1.29, 0.11]	0.36	−0.07	−0.58 [−1.17, −0.00]	0.30	−0.08*
Relationship with CR[b]	1.73 [0.47, 3.00]	0.64	0.13**	0.34 [0.03, 0.65]	0.16	0.11*	−0.01 [−0.13, 0.12]	0.06	−0.00	0.29 [−0.68, 1.25]	0.49	0.03	0.94 [0.12, 1.75]	0.41	0.11*
Number of days living with CR	−0.18 [−0.70, 0.34]	0.26	−0.03	0.01 [−0.11, 0.14]	0.06	0.01	−0.04 [−0.09, 0.01]	0.03	−0.08	−0.06 [−0.44, 0.33[	0.20	0.01	0.12 [−0.21, 0.45]	0.17	0.03
Caregiver burden	0.08 [0.05, 1.00]	0.01	0.28***	0.01 [0.00, 0.01]	0.00	0.13*	0.00 [−0.00, 0.00]	0.00	−0.02	0.03 [0.01, 0.05]	0.01	0.17***	0.05 [0.03, 0.06]	0.01	0.27***
Agitated behaviours by CR	0.15 [0.11, 0.19]	0.02	0.32***	0.03 [0.02, 0.04]	0.01	0.27***	0.01 [0.01, 0.01]	0.00	0.25***	0.04 [0.02, 0.07]	0.02	0.14**	0.09 [0.07, 0.12]	0.01	0.30***
Resilience	−0.08 [−0.16, 0.00]	0.04	−0.10*	−0.02 [−0.04, 0.00]	0.01	−0.12*	−0.01 [−0.02, 0.00]	0.00	−0.18**	−0.12 [−0.18, −0.05]	0.03	−0.21***	−0.03 [−0.08, 0.02]	0.03	−0.06
Self−efficacy	0.07 [−0.04, 0.19]	0.06	0.06	0.03 [0.00, 0.06]	0.01	0.11*	0.01 [−0.00, 0.02]	0.01	0.07	0.03 [−0.06, 0.12]	0.05	0.04	−0.01 [−0.08, 0.06]	0.04	−0.01
Emotional social support	0.04 [−0.07, 0.14]	0.06	0.04	0.00 [−0.02. 0.03]	0.01	0.01	0.00 [−0.01, 0.01]	0.01	0.00	−0.01 [−0.09, 0.07]	0.04	−0.02	−0.04 [−0.11, 0.03]	0.04	−0.06
Instrumental social support	−0.06 [−0.14, 0.03]	0.04	−0.08	−0.01 [−0.03, 0.02]	0.01	−0.03	0.00 [−0.01, 0.01]	0.00	0.05	0.00 [−0.06, 0.07]	0.03	0.01	0.00 [−0.05, 0.06]	0.03	0.01
Adjusted R^2	0.307			0.117			0.069			0.149			0.270		
F	25.240***			8.366***			5.131***			10.100***			21.290***		

Notes: CR = Care recipient; B = unstandardised beta; 95% CI = 95% confidence interval; SE = standard error of B; β = standardised beta; a Gender: female (referent group). b Relationship with care recipient: relationship other than spouse or partner (referent group); $^{*}p < 0.05$. $^{**}p < 0.01$. $^{***}p < 0.001$

resilience served as a significant protective factor for both forms of elder abuse (physical abuse: $\beta = -0.12$ and $p < 0.05$; financial exploitation: $\beta = -0.21$ and $p < 0.001$). Self-efficacy ($\beta = 0.11$ and $p < 0.05$) was predictive of greater physical abuse against care recipients but not the others.

Unlike other forms of elder abuse, injury was not significantly predicted by caregiver burden ($\beta = -0.02$ and $p > 0.05$). Despite the positive relationship with agitated behaviours by care recipients ($\beta = 0.25$ and $p < 0.001$) and the negative association with caregiver resilience ($\beta = -0.18$ and $p < 0.01$), none of the study variables significantly predicted injury resulted from elder abuse. The final model explained 6.9% of the total variance of injury ($F_{10, 551} = 5.131$ and $p < 0.001$).

As to PHB, none of the protective factors investigated was statistically predictive of the abuse (all $p > 0.05$). In the final model, caregiver burden, agitated behaviours by care recipients, female gender of caregivers and spousal relationships between caregiver and their care recipient significantly predicted greater use of PHB, of which 27.0% of the total variance could be accounted for by all variables in the model ($F_{10, 538} = 21.290$ and $p < 0.001$).

Demographic factors had significant effects on the risks of some elder abuse. After controlling for other variables, younger caregiver age was associated with greater risks of verbal abuse and financial exploitation, female gender of caregivers was associated with greater risks of verbal abuse and PHB and a spousal relationship between the caregiver and the care recipient was related to greater risks of verbal abuse, physical abuse and PHB.

Discussion

Using a large sample of family caregivers in Hong Kong, the present study empirically examined the risk and protective factors of five different forms of elder abuse, with a special focus on the protective effect of caregiver resilience on the use of violence against older care recipients. Our findings clearly indicate that caregiver burden and agitated behaviours exhibited by care recipients emerge as two robust risk factors, while at the same time highlight the protective power of caregiver resilience in most form of elder abuse.

Consistent with previous research (Alvi and Zaidi, 2017; Constantino *et al.*, 2020; Serra *et al.*, 2018), caregivers with greater levels of resilience report fewer abusive acts against their older care recipients after adjusting for the effects of other variables. Resilient caregivers may be less vulnerable to triggers of negative responses and behaviour in highly stressful situations (Gallicchio *et al.*, 2002) and may also be more adaptive and better overcome undesirable experiences encountered when fulfilling their caregiving tasks (Menezes de Lucena Carvalho *et al.*, 2006). Serra *et al.* (2018) demonstrated empirically that resilience may serve as a positive psychological resource mitigating the negative impacts of caregiver burden in abuse against older care recipients. The authors further observed that regardless of the level of burden perceived, resilient caregivers have a lower probability of abuse. This finding was replicated in the present study, reflecting the potential universal effect of resilience in the reduction of caregiver abuse on older adults.

Besides the possible resilience–burden–abuse relationships, other researchers have suggested that social support may be an underlying variable that moderates the association between resilience and elder abuse. Pillemer *et al.* (2016) suggested in their review that greater social support enhances resilience while lowering the risk of elder abuse. Echoing this finding, a recent systematic review has highlighted the essential role that social support has in promoting resilience and protecting individuals from emotional distress and negative health consequences that heighten the risk of abuse (Palacio *et al.*, 2020). Positive social networks may stimulate resilience and favours the satisfaction levels of family relationships (Hornor, 2017), a factor that may protect care recipients from abuse

(Palacio *et al.*, 2020). When being viewed as an external resource of help, social support may also play a protective role in caregiver burden (Ruisoto *et al.*, 2020; Shiba *et al.*, 2016). In this sense, instrumental social support may ease subjective burden by relieving primary stressors related to caregiving (e.g. long hours of caring), which further facilitates caregivers' sense of control and improves their adjustment when facing high caregiving demands (Ong *et al.*, 2009).

While caregiver resilience inversely predicts most forms of elder abuse in the present study, its association with PHB was not significant after controlling for other variables. PHB is often defined as adverse care which is detrimental to the health and well-being of care recipients, although not severely abusive or required social or legal intervention (MacNeil *et al.*, 2010). In line with our current findings, there has been empirical evidence supporting the positive relationships between PHB, caregiver burden and agitation of care recipients (Toda *et al.*, 2018). Although previous research has proven that caregiver forgiveness is predictive of PHB (Cheng *et al.*, 2013), current finding does not support the predictive role of resilience in PHB when other variables are considered. This underscores the potential complexity in the effects of caregiver resilience on elder abuse. Whether resilience functions through different mechanisms on different forms of elder abuse is unclear: It may be possible that resilience helps reduce caregiver abuse in more severe forms (e.g. physical and verbal abuse that needs intervention) but not the others (e.g. threatening with nursing home placement). Clearly, more research is needed to examine the mechanisms underlying the associations.

It is surprising to see that neither emotional nor instrumental social support is predictive of any form of elder abuse with the present data. Social support has been demonstrated as an important protective factor of abuse related to family caregiving, as it helps reduce psychological burden (Shiba *et al.*, 2016), foster resilience to stress (Ozbay *et al.*, 2007) and maintain physical and psychological well-being among caregivers (Han *et al.*, 2012). In contrast to some previous research (Ong *et al.*, 2018), social support perceived by caregivers is independent to elder abuse after adjusting for other variables in the present study. One of the possible explanations may be the cultural-specific aspects of caregiving within the Chinese context and traditions. In Hong Kong, where the Chinese societal norm generally assigns the primary responsibility for the care of older adults to their families, caregiving may be bound by a set of cultural expectations and caregivers may sometimes be "forced" by cultural obligation to care for frail older family members (Chan and Chui, 2011). While the government lays the responsibility of care tightly with the family, there is growing evidence that families are experiencing care as a burden (Holroyd, 2001). It has been suggested that the Chinese style of coping or social support utilisation can be different from those observed in the Western culture, and Chinese individuals may prefer tackling problems by themselves rather than seeking help and support from others (Boey, 1999). In the context of family caregiving, caregiver may be reluctant to disclose their family problems to people who are not their family members to preserve face and not to burden others (Au *et al.*, 2012). In this sense, the protective effect of social support on caregiver burden and elder abuse may be minimal. Another possible reason is that the types of social support assessed in the study might not be relevant to the caregiving tasks, and its protective role may be masked because of mediation effects of other powerful predictors such as resilience and caregiver burden (Shiba *et al.*, 2016). Indeed, there is preliminary evidence that some forms of social support (e.g. social interactions) are more effective than the others when protecting care recipients from elder abuse (Serra *et al.*, 2018).

Unexpected results also appear in the associations between self-efficacy and caregiver abuse. Contrasting with evidence in the literature which supports the protective power of caregiver self-efficacy (Palacio *et al.*, 2018), current findings show that greater caregiver self-efficacy predicts greater use of physical abuse against care recipients. To explain the positive link between self-efficacy and abuse, reference may be taken from evidence revealed in the task performance literature. Tzur *et al.* (2016) suggest in their study that

reward can serve as a moderator of the relationship, that individual with high self-efficacy achieve higher performance with greater perceived reward while performing worse when perceived reward is smaller. Applying to the context of caregiving, it is possible that caregivers with high self-efficacy may have lower performance in fulfilling their role when they perceive the caregiving tasks as low in reward. The low performance may then lead to greater burden and higher risks of using abusive behaviour on their care recipients.

An important contribution of the present study is the confirmation of the robust effects of caregiver burden and care recipients' agitation on elder abuse, even after the adjustment for protective factors and demographic background. These effects are supported by different studies in the field (Serra *et al.*, 2018; Yan, 2014). A high level of objective stressors (e.g. disruptive, agitated behaviour exhibited by care recipients), together with a high level of subjective burden, may result in caregivers' use of violence as a means of expressing negative emotions, relieving stress and resolving problems. Current findings show that protective factors such as social support and resilience may not necessarily be effective in stopping all forms of elder abuse, warranting the need of future studies to explore other protective factors to combat the problem.

In line with previous studies (Ananias and Strydom, 2014), current findings show that caregivers' demographic characteristics can affect their risks of abuse. Female gender, younger age and a spousal relationship with the care recipient are all predictive of greater risks of some types of elder abuse. While there have been mixed findings on the directions of effects of caregiver demographics on elder abuse, female spouses, in general, report more caregiver stress (Penning and Wu, 2016). Female spousal caregivers are often burdened with increased demands in caregiving, which may be resulted from a possible socialisation and expectation that women should take on more responsibilities when family members are having health conditions (Brazil *et al.*, 2009). With the increased caregiving expectations and demands, female spousal caregivers may resent their caregiving experiences over time (Sabo *et al.*, 2013), leading to a greater risk of abuse.

Limitations of the present study

Current findings must be interpreted in light of the limitations of the present study. First, only caregivers of older adults who were using the services provided in elderly centres in Hong Kong were included as a purposive sample in the study, thus leading to a limited generalisability of the results to other populations. There might be an underestimation of the severity of elder abuse, as the most at-risk older care recipients might have been confined at home and were not able to get access to the elderly service centres. Second, the reliance on caregivers' report when measuring elder abuse may lead to underreporting. Fear of social or legal intervention as well as shame and guilt of perpetrating violence on older adults may cause reluctance among caregiver respondents to report accurately. Future studies may use other types of reports such as care recipients' self-reports and clinical or criminal records as a cross-check to minimise any social desirability and reporting bias. Third, the inclusion of predictors in the regression models was not exhaustive. The present study did not evaluate the effects of other risk factors (e.g. caregiver depression, financial difficulties, etc.) and protective factors (e.g. positive appraisal of caregiving, personal competence, etc.) found in the literature (Pillemer *et al.*, 2016). Similarly, the types of elder abuse included in this study were not exhaustive. For example, sexual abuse and structural abuse were not assessed, as their rates in Hong Kong have often found relatively low. According to the Central Information System on Elder Abuse Cases from the Hong Kong Government, the past-year prevalence of sexual abuse on older adults was around 2%–3% in the recent few years (Social Welfare Department, 2022). To avoid any confounding results that may possibly appear, this study only included the five more common types of elder abuse in the analysis. Finally, the rate of injury was extremely low, and the low occurrence of injury might affect the accuracy of the results in the hierarchical regression

analysis. Future studies may include clinical samples to look into the correlates of injury and gain a deeper understanding of the problem.

Implications of the findings

Risk of abuse is high among dependent older adults. To some care recipients, living long does not always mean living well. Yet, the present study has identified risk factors, such as caregiver burden, in family caregivers that to a certain extent are alterable. Primary preventions may focus on reducing burden with activities both instrumentally and emotionally supporting the caregivers. Our findings underscore the need to support informal caregivers of older adults and bear significant implications for practice and policy. The potential determinant effects of caregiver resilience on reducing elder abuse on older care recipients warrant the need to raise public awareness of this issue among health-care and social work professionals. Older adults detected as at-risk of elder abuse should be followed up by timely intervention and close monitoring (Orfila *et al.*, 2018). A characteristics or ability that helps individuals to successfully overcome and adapt to adverse conditions, resilience, is often viewed as modifiable and teachable (Chmitorz *et al.*, 2018). By investigating into the coping strategies adapted by caregivers with high resilience, health-care professionals may teach caregivers at risk of caregiver burden and other adverse caregiving situations similar strategies to build their resilience and protect care recipients from being abused. Past research has revealed some effective interventions for fostering resilience among individuals (Dias *et al.*, 2015), and resilience training may be helpful in equipping caregivers' coping skills to adapt to difficult circumstances (Huey and Hashim, 2015). Health-care professionals may encourage their caregiver clients to build essential skills to increase resilience through interventions such as cognitive behavioural therapy, mindfulness training and psychoeducation. The mixed findings on resilience and self-efficacy also shed lights on the need of individual-centred prevention and intervention programmes, so that the demands of caregivers and care recipients from different backgrounds can be addressed independently. In addition to enhancing resilience and self-efficacy at an individual level, our findings also highlight the importance of multi-disciplinary, community support services for informal caregivers. Advocacy for policy formation and increased funding is necessary, and efforts should focus on making the needs of informal caregivers a public health issue.

Conclusion

Elder abuse is a serious violation of an individual's fundamental right to be safe (WHO, 2002), and effective interventions are undoubtedly a key to protecting older adults from victimisation. The present study provides important data on the risk factors and protective factors of abuse on older care recipients, with a special focus on the protective role of caregiver resilience on the reduction of elder abuse. Despite the robust effects of caregiver burden and care recipients' agitated behaviours, resilience can serve as a key to the prevention of elder abuse. Findings serve as a call to action, bringing to light the need of more research on elder abuse in the caregiving context. While interests in the concept of resilience are growing in the field of family caregiving, there is yet little research on its usefulness in reducing caregiver burden and violence. Future research should fill the research gap and extend our knowledge on the protective factors or capabilities, so as to inform the development of meaningful and effective interventions to prevent elder abuse.

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