Buffering or Deteriorating: How Filial Piety Influences the Associations Between Elder Abuse, Social Well-being, and Depression among Chinese Older Adults

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Abstract

Background

Few empirical studies have examined how cultural values and social well-being affect depression amongst victims of elder abuse. This study thus incorporates the cultural context into a stress-and-coping model to explore how filial piety influences the dynamic associations between elder abuse, multi-dimensional social well-being, and depression among older adults in China.

Methods

The participants were 7,700 older adults (aged 60 years or older) enrolled in the 2018 China Longitudinal Aging Social Survey, a national population-based study of older adults. Moderated mediation models were applied to test the mediating effects of multidimensional social well-being (social isolation, loneliness, social network, and social participation) and the moderating effect of filial piety. All mediation and moderated mediation effects were estimated using SPSS.26.

Results

Different dimensions of social well-being have a partial mediating effect on the association between elder abuse and depression. Traditional attitudes towards filial piety exacerbated the effects of elder abuse on depression by increasing social isolation and loneliness, but they also reversed some negative effects by improving the social network.

Conclusions

Certain sociodemographic factors are associated with greater risk of depression for victims of elder abuse. Our findings suggest that filial discrepancy and stigma from elder abuse might influence not only older adults' feelings of loneliness and social isolation but also their social participation and social network; this will further deteriorate their depressive symptoms in late life. These results should be considered when developing culturally sensitive identification, prevention, and intervention services for older adults.

Background

Elder abuse is a traumatic life event experienced in old age, and it is increasingly being recognized as an important public health and human rights issue with negative effects on families and the society at large [1, 2]. Elder abuse encompasses physical, psychological, emotional, sexual, and financial/material exploitation or intentional or unintentional neglect [3]. The impacts of elder abuse are detrimental, and studies have showed that older adults subjected to abuse had greater risks of depression [3, 4], premature morbidity, and mortality [5] as well as worse physical and psychological well-being [6]. However, little is known regarding the complex psychosocial mechanisms that increase the levels of depression among older adults who have experienced elder abuse. To develop effective elder abuse prevention and intervention programs for the rapidly growing ageing population, it is crucial to enhance our understanding of the connections between elder abuse, social well-being, depression, and the factors contributing to depression.

Social well-being is an essential component of health. According to the World Health Organization [2], health is a condition of total physical, mental, and social well-being and not simply the absence of illness or physical impairment. Social well-being is a multi-attribute concept that depends upon a complex connection of the social network, social participation, social isolation, and loneliness. While old age does lead older adults to have less social participation, a smaller social network, and emotional distress such as through loneliness and depression [7], elder abuse is a stressful life event that leads to even more pronounced and long-lasting psychological distress. Evidence suggests that elder abuse is also associated with older adults' social well-being [8, 9, 10], which particularly warrants attention given that social well-being of the victims of elder abuse could be of crucial importance to the development of future intervention programs.

Partly due to the cultural emphasis on virtues of filial piety, elder abuse is an under-explored phenomenon in Chinese societies despite a growing public interest in this topic across countries. Nevertheless, a growing number of recent studies have found that elder abuse is common among older Chinese adults. For example, Li and Wang. [11] found that 7% of older people aged above 65 years have been victims of elder abuse based on the 2010 'The Third Wave of Chinese Women Social Status Survey'. A 2019 study surveyed a sample of 1,684 older adults aged 60 and above in a rural area of China and found that the prevalence of elder abuse was 25.1%. This study also found the most common types of elder abuse as psychological abuse (19.5%) and financial abuse (16.2%) [12].

The literature presents divergent views on the effects of filial piety on social well-being and depression among Chinese victims of elder abuse, with different scholars offering competing theories and interpretations. Based on an analysis of 164 Chinese older adults, Cheng and Chan [13] found that the level of respect children show towards their parents is the most important factor in determining how older adults feel about their relationship with their children and their psychological well-being. Their result corresponds with the systematic literature review of Wu et al. [14], who demonstrated that older people's perception of their children's filial piety is correlated with a reduction in their depression. Moreover, Yan [15] found that filial piety is a passive factor and barrier that may prohibit victims from admitting their abusive experiences and seeking help. However, many scholars arrived at different conclusions. For example, Tam and Neysmith found that Chinese older adults may have low tolerance towards elder abuse and disrespectful behaviours. As Confucian cultures emphasize that the younger generation should be respectful and provide care to the older generation, filial piety may promote family cohesion and mutual support, which can serve as a buffer against elder abuse[16]. These findings suggest that additional research is needed to fully understand the correlations between elder abuse and filial piety.

This study uses a nationally representative sample of people aged 60 and over from the '2018 China Longitudinal Aging Social Survey' (CLASS). It extends prior research by elaborating on the dynamic effects of filial piety and multi-dimensions of social well-being on the association between elder abuse and depression among Chinese older adults. Accordingly, it pursues the following research questions: (1) How, and to what extent, are attitudes towards filial piety associated with elder abuse and depression among Chinese older adults? (2) How, and to what extent, are different aspects of social well-being (i.e. social network, social isolation, loneliness, and social participation) correlated to elder abuse and depression? (3) Do attitudes towards filial piety affect the links among elder abuse, different aspects of social well-being,

and depression? To the best of our knowledge, this is the first attempt to identify the relationships among elder abuse, multi-dimensions of social well-being, and depression among Chinese older adults using the latest nationally representative data.

Literature Review

Different dimensions of social well-being as mediators

Currently, the literature has no generally accepted definition of social well-being. Nevertheless, scholars agree that, to be healthy in terms of social well-being, it is necessary to have good and functional relationships with others, receive sufficient social support, experience minimal stress or tension in social situations, engage in some form of social activity or involvement, be included and accepted within one's society, have a reliable and effective social network, and possibly have the freedom to express one's sexuality as desired [17].

For example, according to Ivankina and Ivanova [18], social well-being reflects individuals' general satisfaction with the environment, activities in which they are involved, and their possessions. Rowe and Kahn [19] provided a definition of social well-being as 'active involvement in life'. This means maintaining personal connections and participating in either paid or unpaid activities that contribute to the production of goods or services with economic value. According to Waite [17], social well-being may include adequate and well-functioning social relationships, adequate social support, minimal or no interpersonal tension, some social participation, social inclusion in one's society, and strong and well-functioning social networks. Having a diverse and supportive social network is linked to low levels of depression, increased life satisfaction, and even lower rates of mortality.

Several theoretical and conceptual models, and a sizable body of research, have identified the significance of 'social well-being'. For example, the biopsychosocial [20], successful aging [19], and interactive biopsychosocial [21] models examine different dimensions of social well-being through theoretical and conceptual analysis. The social network, social participation, social inclusion, and loneliness are the most important and frequently assessed components of social well-being [17].

Social isolation has been a central concern in the research on health, but indicators of isolation vary widely both across and within disciplines in myriad ways. As a candidate indicator of both poor social well-being and depression, social isolation has been defined at its most basic level as a lack of meaningful contact with a person's community, family, and friends or a lack of integration with their social network [22,23,24,25]. Existing research confirmed that socially isolated individuals tend to have a higher likelihood of living alone, being unmarried, having a limited social circle, participating in fewer groups, having fewer friends, and having infrequent social interactions compared to those who are not socially isolated [7]. Thus, social isolation can increase the likelihood of unfavourable events by limiting the availability of assistance and care.

Loneliness and social isolation are two important components of social well-being that are frequently used interchangeably. Rather than being identical, they are more like siblings with similar traits [26]. Loneliness, as

a subjective assessment of one's social relationships, is often characterized by a lack of companionship, lack of friends, and feelings of exclusion. Loneliness is a major source of stress, and the existing literature has proved that chronic loneliness can cause significant stress, leading to higher likelihood of depression, cognitive decline, hypertension, stroke, and cardiovascular disease [23,24,27]. The UCLA Loneliness Scale [28] and Three-item Loneliness Scale [29] are used frequently to measure loneliness.

Individuals' social network plays a vital role in promoting social well-being as it provides them with a sense of belonging, emotional support, and opportunities for social interaction. Social networks are defined and measured using various methods. Inspired by the Social Network Index and Social Network Scale, Nicholson et al. [30] developed an instrument to examine older adults' social networks. This scale has three items: (1) number of monthly face-to-face interactions with family, friends, and neighbours; (2) connections with others through phone, e-mail, the internet, or video chat; and (3) number of individuals with whom they have a close connection. A large body of research has demonstrated the health risks associated with having a small social network [31,32], infrequent social contact [33], and lack of social network diversity [34]. According to Antonucci et al. [35], social networks, particularly relationships with family members, are essential in helping older individuals cope with chronic conditions and reducing their feelings of depression.

Social participation is not only an important aspect of well-being and quality of life but also a key element in the preventions of loneliness. This is because older adults become reliant on community resources and planned activities for meaningful social interactions and engagement. Social participation involves participating in organized group activities, such as religious services, clubs, sports teams, volunteer activities, or community organizations. This can create weak connections that facilitate both the provision and receipt of support. Social participation is also linked to lower or higher levels of depression, depending on the type of organization in which one participates [36]. Sociologists have also identified social participation as a protective factor that can reduce older adults' negative psychological health symptoms, including depression [37] and cognitive impairment [38]. For example, Chiao et al. [39] found that participating actively in social groups can significantly decrease the likelihood of depression in older women from Taiwan. Low participation in social activities, particularly volunteering and religious attendance, can be a potential threat to health.

The four aspects of social well-being (i.e. social network, social isolation, loneliness, social participation) are inter-connected concepts that complement each other. A strong social network and participation in social activities can help prevent social isolation and loneliness; in contrast, experiencing social isolation and loneliness can reduce social participation and physical activity as well as impair mental health and cognition. Thus, there is great variety and complexity in older adults' social worlds, which can scarcely be captured by only one or two measures, and so previous studies do not provide a clear understanding of how different aspects of social well-being interact or independently affect later-life depression. Therefore, it is important to understand the mechanisms through which aspects of social well-being may present depression risks for, particularly, victims of elder abuse.

Filial piety as moderator

Filial piety is rooted in Confucian philosophy and generally refers to ‘a set of norms, values and practices regarding how children should behave toward their parents’ [40]. Filial piety emphasizes that adult children must care for, respect, and financially support their parents and show obedience [13,41]. It is a combination of children’s special social attitudes and social behaviour towards their parents [42]. According to prior research, traditional attitudes towards filial piety and unfilial piety are the two extremes of consent, while modern filial piety tends to deal with intergenerational issues from the viewpoint of expediency, that is, through the practice of filial piety in various ways.

Filial piety has long been recognized as a potential protective factor against elder abuse [13]. Traditional attitudes towards filial piety are found to relate to high tolerance of abuse, reluctance to seek help, and mistrust towards third-party intervention; this is because accepting their victimization before others means acknowledging that their adult children do not fulfil their filial obligations, which will cause a significant loss of face [13,43,44]. According to Yan [15], concepts such as ‘family and social harmony’, ‘blood is thicker than water’, ‘face issues’, and ‘not hanging dirty laundry out in public’ are recurrent themes among victims of elder abuse who are reluctant to seek help. Other researchers have arrived at divergent conclusions, Chen et al. [45] and Hwu et al. [46] reported that within a social context that emphasizes order and respect for older people, individuals with traditional attitudes towards filial piety are more likely to develop stronger social networks with families and peers, obtain more instrumental support from older adults, and reduce interpersonal conflicts. Filial piety also implies a stable psychological trait that buffers against the changing environment and psychological damage caused by poor family relationships [14].

Few prior studies focused on the relationship between filial piety and older adults’ social well-being. Due to variations in measurement methods, different scholars have different views on how filial piety affects the social well-being of older people. Makhtar and Samsudin [47] found that high filial piety expectations were associated with low-level loneliness among older people in Malaysia. Ren et al. [50] discussed the impact of filial piety and generativity on the well-being and loneliness of older adults in China and Denmark. They suggested that filial piety and generativity affect older adults’ social and emotional well-being positively, while loneliness affects them negatively.

In the field of geriatric depression, the effects of filial piety on older adults were inconsistent. Li and Dong [49] found that the expectation of filial piety was negatively correlated with depressive symptoms, but there were differences between different expectation categories. For example, the depressed group tended to have high economic expectations, while the non-depressed group had high expectations for respect. Another possible explanation why filial piety protects against depression is related to its interpersonal function.

Motivated by such existing research and theoretical frameworks of the stress-and-coping model for ageing, we believe it is necessary to include filial piety in the theoretical framework to understand the complex effects of social well-being.

The present study and hypotheses

Incorporating the cultural context into the stress-and-coping model [50], this study aims to address the aforementioned gaps by testing the following hypotheses:

Hypothesis 1 (mediation): *Different aspects of social well-being (i.e. social network, social isolation, loneliness, social participation) (partially) mediate the relationship between elder abuse and depression.*

Hypothesis 2 (moderation): *The positive relationship between elder abuse and depression is moderated by filial piety. Specifically, this relationship is stronger among individuals with traditional filial piety.*

Hypothesis 3 (moderation): *The association among elder abuse, different aspects of social well-being, and depression is moderated by filial piety.*

In the process of ageing, health and functional declines are the primary stressor, while elder abuse experience is the secondary stressor—also called the 'external stressor'. The different aspects of social well-being, as mediators, become both consequences and coping strategies. Older adults' attitudes towards filial piety constitute the cultural context; however, whether these attitudes play a buffering or deteriorating role is yet unknown (see Figures 1 and 2).

[Insert Figures 1 and 2 here]

Methods

Sample and procedure

This study used a nationally representative sample of people aged 60 and over from the 2018 CLASS conducted by the Center for China Survey and Data of Renmin University of China. The survey is conducted with a continuous national probability sample representing the living conditions, attitudes, intergenerational relationships, and socioeconomic and health statuses of older people. This survey used a multi-stage sampling method. County-level units (counties, county-level cities, and districts) within provinces were selected as primary sampling units. Villages (*cun*) in rural areas and neighbourhoods (*shequ* or *juweihui*) in urban areas were selected as secondary sampling units. From 2014 to 2018, the CLASS conducted three survey waves in a total of 476 village/neighbourhood committees and 30 provinces/autonomous regions/municipalities. The 2018 wave of CLASS was selected because only this wave contained scales on elder abuse experiences and attitudes towards filial piety. The 2018 CLASS included 11,419 participants. We excluded participants who had missing data on the scales of depression, abuse experience, social participation, social isolation, social network, loneliness, and filial piety. We also deleted samples with missing values on relevant covariates. The final data included 7,700 participants (see Fig. 3).

[Insert Fig. 3 here]

Measures

Independent variable: elder abuse. Elder abuse was measured by the Chinese version of a modified Hwalek–Sengstock Elder Abuse Screening Test [51], which measured the occurrence of physical abuse, physical

neglect, psychological abuse, psychological neglect, material abuse, and violation of personal rights. Participants answered either 'yes' (coded as 1) or 'no' (coded as 0) to seven questions. The Cronbach's alpha for the total scale was 0.91, indicating favourable internal consistency. Table S1 in Supplementary Materials presents more details about the Chinese version of the H-S/EAST.

Dependent variable: depression. Depression was assessed using an abbreviated nine-item Center for Epidemiological Studies Depression Scale (CES-D), which includes three items assessing positive feelings, two items assessing negative emotions, two items assessing somatic symptoms, and two items assessing the sense of marginalization. CES-D is reliable and valid for detecting depressive symptoms among Chinese older people [52]. For the current study, each item had a score of either 1 (rarely or none of the time), 2 (some of the time), or 3 (most of the time). By reversing the coding of the positive effect items, a higher mean score indicated higher level of depression. In this study, the internal Cronbach alpha for the nine items was 0.85.

Mediators: multi-dimensions of social well-being. Social isolation. Eight items were used to measure the social isolation of older adults, including four items assessing positive feelings and four assessing negative feelings (see Table S2). Participants were asked about the degree to which they agree or disagree (1 = completely disagree, 2 = disagree, 3 = fair, 4 = agree, and 5 = completely agree). By reversing the coding of the positive effect items, a higher average score indicated a higher level of social isolation. The Cronbach's alpha for these items was 0.893 in this study.

Loneliness. Loneliness was measured by the Three-item Loneliness Scale [29], which previous studies have proven to have good reliability in the Chinese social context [53]. Total score of the three items was used to assess the level of loneliness. A higher score indicated higher-level loneliness. In this study, Cronbach's alpha for loneliness was 0.77.

Social network. Six items were used to measure the size of the older adults' social network (see Table S3). Participants rated each question into one of six categories: none, 1, 2, 3–4, 5–8, and 9 and above, with the total score ranging from 0 to 40. The social network's size was constructed by summing the unweighted points from these questions. A higher score indicated a larger social network.

Social participation. Seven items were used to measure the older adults' level of social participation, including community security patrols participation, help provided to other older adults, environmental protection, dispute resolution, conversation with others for psychological advice, provision of professional volunteer services, and care of another family's children. Participants were asked whether they participated in the above activities in the last year. Each item had five options (1 = never participate, 2 = several times a year, 3 = at least once a month, 4 = at least once a week, and 5 = almost daily), We added these items and averaged them to represent the level of social participation. The greater the value, the greater the social participation.

Moderator: filial piety. Attitudes towards filial piety was measured using an abbreviated eight-item Filial Piety Scale [54], which considers different dimensions of filial piety, including reciprocal filial piety, authoritarian filial piety, egalitarian parent-child relationship, and spiritual filial piety. For the current study, each item had a score from 1 = strongly agree to 5 = strongly disagree, with the total score ranging from 0 to 40. After

reversing the coding, a higher score indicated a traditional attitude towards filial piety in this study. The internal Cronbach's alpha for the eight items was 0.87.

Control variables

The study collected several sociodemographic characteristics of participants, including age (continuous variable), gender (1 = men), educational attainment (1 = above high school), marital status (1 = married), residence area (1 = urban), living arrangement (1 = live alone), work status (1 = employed), and personal income (continuous variable). We also included a series of variables to measure the primary stressor, including the older adults' physical and psychological health status, including their activities of daily living (continuous variable), instrumental activities of daily living (continuous variable), number of chronic diseases (continuous variable), and cognitive function (continuous variable), based on the Chinese version of the Mini-Mental State Examination screening test (see Table S2).

Data analysis

Four interlinked steps were taken to evaluate how elder abuse, older people's attitude towards filial piety, and social isolation influenced the depression of older people. First, each scale's validity and reliability were measured. Second, Pearson correlation matrices were used to clarify the associations between the study's variables. Third, an integrated moderated mediation model (Model 59) [55], which investigates how elder abuse, older people's attitude towards filial piety, and depression predict social isolation of older people, was examined. Fourth, simple slope tests were used to determine whether the relationship between depression and social isolation varied for participants scoring one standard deviation (SD) above and below the mean scores of filial piety.

Results

Characteristics of the participants

Demographic information was analysed using descriptive statistics, including frequency distribution and means, as shown in Table 1. There were 48.74% women and 50.82% men between the ages of 60 and 109 years (M = 71.97, SD = 7.07). Most participants lived with family members, one-fourth were out of work, and 7.01% had experienced elder abuse. The mean scores of depression and filial piety were 1.76 (SD = 0.29) and 4.00 (SD = 0.57), respectively. Based on the t-test results (see Table 1), participants with high-level depression tended to be older, female, and widowed/separated/single; have lower education attainment and worsened physical health and cognitive functions; live in rural areas; be out of work; and have relatively poor economic status and (higher-level social isolation, higher-level loneliness, smaller social network, and less social participation; $p < 0.001$).

Table 1
Descriptive statistics of the study variables

Variable	Total	Experience higher depression	Experience lower depression	p-value
	(n = 6,184)	(n = 3,140)	(n = 3,044)	
Age (range: 60–109)	71.97 (7.07)	72.84 (7.26)	71.03 (6.75)	0.00
Gender (%)				
Women	48.74	50.06	47.31	0.09
Men	50.82	49.94	52.69	
Education level (%)				
Above high school	12.06	8.92	15.43	0.00
Blow high school	87.94	91.08	84.57	
Marital status (%)				
Married	70.45	65.17	76.13	0.00
Widowed/separated/single	29.55	34.83	23.87	
Residence (%)				
Urban	52.09	48.84	55.59	0.00
Rural	47.91	51.16	44.41	
Living arrangement (%)				
Live alone	11.45	13.83	8.90	0.00
Live with family members	88.55	86.17	91.10	
Working status (%)				
Unemployed	77.30	76.39	78.27	0.00
Employed	22.70	23.61	21.73	
Personal income (ln_year)	8.18 (1.39)	7.97 (1.39)	8.40 (1.35)	0.00
ADL	10.33 (1.34)	10.44 (1.60)	10.21(0.99)	0.00
IADL	8.67 (1.83)	8.86(2.08)	8.47(1.50)	0.00

Note: ADL: activities of daily living; IADL: instrumental activities of daily living.

Variable	Total	Experience higher depression	Experience lower depression	p-value
	(n = 6,184)	(n = 3,140)	(n = 3,044)	
Chronic diseases	1.63 (1.50)	1.84 (1.58)	1.42(1.39)	0.00
Cognitive function	13.64 (2.88)	13.37 (3.09)	13.93(2.59)	0.00
Elderly abuse (%)				
Abused	7.01	8.65	5.24	0.00
Not abused	92.99	91.35	94.76	
Filial piety (range: 1–5)	4.00 (0.57)	3.92 (0.58)	4.09(0.56)	0.00
Depression (range: 1–3)	1.76 (0.29)			
Social adaptation (range: 1–5)	3.09 (0.50)	2.98 (0.44)	3.21(0.54)	0.00
Loneliness (range: 1–3)	1.47 (0.52)	1.69 (0.53)	1.23(0.38)	0.00
Social network (range: 0–5)	2.30 (0.88)	2.24 (0.86)	2.38(0.91)	0.00
Social participation (range: 0–5)	0.34 (0.62)	0.32 (0.61)	0.36(0.63)	0.00
Note: ADL: activities of daily living; IADL: instrumental activities of daily living.				

[Insert Table 1 here]

Correlation of study variables

The bivariate correlations for all variables are shown in Table 2. The results showed that elder abuse was positively and significantly correlated with depression ($r = 0.0923$, $p < 0.01$), social isolation ($r = 0.0455$, $p < 0.01$), loneliness ($r = 0.0993$, $p < 0.01$), and social participation ($r = 0.0894$, $p < 0.01$) but negatively and significantly correlated with the social network ($r=-0.0221$, $p < 0.05$) and filial piety ($r=-0.0509$, $p < 0.01$). Depression was negatively correlated with the social network ($r=-0.1559$, $p < 0.01$), social participation ($r=-0.0623$, $p < 0.01$), and filial piety ($r=-0.2052$, $p < 0.01$) and positively correlated with social isolation ($r = 0.2463$, $p < 0.01$) and loneliness ($r = 0.4383$, $p < 0.01$). In addition, filial piety was positively correlated with the social network ($r = 0.0737$, $p < 0.01$) and social participation ($r = 0.1944$, $p < 0.01$) and negatively correlated with social isolation ($r=-0.0470$, $p < 0.01$) and loneliness ($r=-0.2946$, $p < 0.01$).

Table 2
Correlation matrix of the study variables

		1	2	3	4	5	6	7
1	Elder abuse	1						
2	Depression	0.0923***	1					
3	Social isolation	0.0455***	0.2463***	1				
4	Loneliness	0.0993***	0.4383***	0.1115***	1			
5	Social network	-0.0221**	-0.1559***	0.0400***	-0.1113***	1		
6	Social participation	0.0894***	-0.0623***	0.0010	-0.0631***	-0.0286***	1	
7	Filial piety	-0.0509***	-0.2025***	-0.0470***	-0.2526***	0.0737***	0.1944***	1

[Insert Table 2 here]

Mediation analysis

For the third step of the statistical analysis, we conducted a mediation analysis to assess whether social isolation, loneliness, social network, and social participation mediate the relationship between elder abuse and depression. Mediation analyses were conducted using Model 4 [55]. At the same time, the moderate variable and other control variables were included.

As Table 3 shows, elder abuse was positively associated with social isolation (B = 0.0841, [0.0433, 0.1248]), loneliness (B = 0.1593, [0.1173, 0.2014]), and social participation (B = 0.1922, [0.1409, 0.2434]). No significant association between elder abuse and social network was found. Social isolation (B = 0.1669, [0.1529, 0.1808]), loneliness (B = 0.2589, [0.2462, 0.2716]), and social network (B=-0.037, [-0.0447, -0.0292]) were significantly associated with depression. However, there was no significant association between social participation and depression.

Table 3
Summary of regression model testing the mediating effects of social isolation on depression

	Variable	Path	B	SE	LLCI	ULCI
Mediator of social isolation	Total effect	Abuse-Depression	0.0884	0.0134	0.0621	0.1146
	Direct effect	Abuse-social isolation	0.0841	0.0208	0.0433	0.1248
		Social isolation-depression	0.1669	0.0071	0.1529	0.1808
		Abuse-depression	0.0744	0.0129	0.049	0.0997
	Indirect effect	Abuse-social isolation-depression	0.014	0.004	0.0064	0.022
Mediator of loneliness	Total effect	Abuse-depression	0.0884	0.0134	0.0621	0.1146
	Direct effect	Abuse-loneliness	0.1593	0.0214	0.1173	0.2014
		Loneliness-depression	0.2589	0.0065	0.2462	0.2716
		Abuse-depression	0.0471	0.0122	0.0232	0.0711
	Indirect effect	Abuse-loneliness-depression	0.0413	0.006	0.0294	0.0531
Mediator of the social network	Total effect	Abuse-depression	0.0884	0.0134	0.0621	0.1146
	Direct effect	Abuse-social network	-0.0013	0.0383	-0.0764	0.0739
		social network-depression	-0.037	0.004	-0.0447	-0.0292
		Abuse-depression	0.0883	0.0133	0.0622	0.1145
	Indirect effect	Abuse-social network-depression	0	0.0015	-0.0029	0.0029
Mediator of social participation	Total effect	Abuse-depression	0.0884	0.0134	0.0621	0.1146
	Direct effect	Abuse-social participation	0.1922	0.0261	0.1409	0.2434
		Social participation-depression	-0.0045	0.0058	-0.0159	0.007
		Abuse-depression	0.0893	0.0134	0.0629	0.1156
	Indirect effect	Abuse-social participation-depression	-0.0009	0.0012	-0.0033	0.0014

Note: SE: standard error; LLCI: lower limit confidence interval; ULCI: upper limit confidence interval.

Additionally, our results revealed a significant indirect effect of elder abuse on depression through social isolation and loneliness. The indirect effect was 0.014 and 0.0413, respectively. Thus, Hypothesis 1 was partially supported. Basic three stepwise regression models with control variables are shown in Tables S5–S8 in the Supplementary Materials.

[Insert Table 3 here]

Moderated mediation analysis

The fourth step was evaluating the moderating function of filial piety—through the social network, social isolation, social participation, and loneliness—on the indirect effects between elder abuse and depression. To test the role of filial piety in these relationships, moderated mediation analyses were conducted. As Table 4 shows, filial piety was negatively associated with depression. When the mediators were social isolation, loneliness, social network, and social participation successively, the significant coefficients were − 0.1232, -0.0831, -0.137 and − 0.1421, respectively. However, the interaction between elder abuse and filial piety was positively associated with depression. The significant coefficients were 0.0671, 0.0584, 0.1237, and 0.0832, respectively. Thus, Hypothesis 2 was completely verified.

Table 4
Testing the moderated mediating effect of abuse on depression by social isolation and filial piety

Interaction	M				Y			
	B	SE	LLCI	ULCI	B	SE	LLCI	ULCI
	Social isolation				**Depression**			
Abuse	0.1061	0.0211	0.0648	0.1474	0.0827	0.0132	0.0569	0.1085
Social isolation					0.1682	0.0072	0.1542	0.1822
Filial piety (FP)	-0.1059	0.0095	-0.1246	-0.0872	-0.1232	0.006	-0.135	-0.1115
Abuse*FP	0.2244	0.0381	0.1496	0.2991	0.0671	0.0238	0.0203	0.1138
SI*FP					-0.037	0.0123	-0.0612	-0.0129
	Loneliness				**Depression**			
Abuse	0.1686	0.0218	0.1259	0.2113	0.0502	0.0124	0.0259	0.0745
Loneliness					0.2648	0.0065	0.252	0.2776
FP	-0.2262	0.0099	-0.2456	-0.2069	-0.0831	0.0058	-0.0944	-0.0718
Abuse*FP	0.0948	0.0394	0.0175	0.1721	0.0584	0.0225	0.0143	0.1026
Loneliness*FP					0.0691	0.0106	0.0483	0.09
	Social network				**Depression**			
Abuse	0.0269	0.0389	-0.0494	0.1032	0.0976	0.0135	0.0711	0.1241
Social network					-0.0381	0.004	-0.0458	-0.0303
FP	0.088	0.0176	0.0534	0.1226	-0.137	0.0061	-0.149	-0.125
Abuse*FP	0.2866	0.0704	0.1485	0.4247	0.1237	0.0246	0.0755	0.172
SN*FP					0.0284	0.007	0.0147	0.0421
	Social participation				**Depression**			
Abuse	0.1842	0.0266	0.1321	0.2362	0.0989	0.0136	0.0722	0.1256
Social participation					-0.0015	0.0059	-0.013	0.01
FP	0.0145	0.012	-0.0091	0.0381	-0.1421	0.0062	-0.1542	-0.1301
Abuse*FP	-0.0817	0.0481	-0.176	0.0125	0.0832	0.0248	0.0346	0.1319
SP*FP					0.0471	0.0094	0.0286	0.0656

Note: N = 7,700. SE: standard error. Model 59 for the mediator of social adaptation. Model 8 for the mediator of loneliness. Model 15 for mediator of social participation.

[Insert Table 4 here]

Moreover, the interaction between elder abuse and filial piety was positively associated with social isolation (B = 0.2244, [0.1496, 0.2991]), loneliness (B = 0.0948, [0.0175, 0.1721]), and social network (B = 0.2866, [0.1485 0.4247]), while there was no significant association between the above interaction and social participation. The interaction between social well-being and filial piety was significantly associated with depression. The effect of social isolation (B=-0.037, [-0.0612, -0.0129]) was negative, while the effects of loneliness (B = 0.0691, [0.0483, 0.09]), social network (B = 0.0284, [0.0147, 0.0421]), and social participation (B = 0.0471, [0.0286, 0.0656]) were positive. Thus, Hypothesis 3 was partially verified. Figure 4 illustrates the effect of the moderators on each path.

To facilitate comprehension, we plotted a simple slope in Fig. 5 and tested the conditional indirect effects in Table 5. In general, participants with traditional filial piety were more depressed upon experiencing elder abuse (Fig. 5a) and felt more socially isolated (Fig. 5b) compared with participants with modern filial piety. Moreover, participants with traditional filial piety were lonelier but had a larger social network than participants with modern filial piety (Figs. 5c and 5d). When we focused on the path between social well-being and depression, we found that participants with traditional filial piety were less depressed than participants with modern filial piety when experiencing high social isolation (Fig. 5e). However, participants with traditional filial piety were more depressed when experiencing high level of loneliness (Fig. 5f), large social network (Fig. 5g), and high social participation (Fig. 5e) compared with participants with modern filial piety.

Table 5
Conditional indirect effects of elder abuse on depression.

Filial piety	B	BootSE	BootLLCI	BootULCI
Social isolation				
-1-SD	-0.0044	0.005	-0.0142	0.0053
Mean	0.0178	0.0042	0.0097	0.0261
-1 + SD	0.0346	0.0061	0.023	0.047
Loneliness				
-1-SD	0.0256	0.0073	0.0111	0.0396
Mean	0.0447	0.006	0.0326	0.0561
-1 + SD	0.068	0.0112	0.0461	0.0893
Social network				
-1-SD	0.0075	0.0028	0.0023	0.0132
Mean	-0.001	0.0016	-0.0043	0.002
-1 + SD	-0.0042	0.002	-0.0087	-0.0009
Social participation				
-1-SD	-0.0066	0.0021	-0.0112	-0.0029
Mean	-0.0003	0.0011	-0.0025	0.0019
-1 + SD	0.0035	0.002	0.0003	0.0084

Note: SE: standard error; SD: standard deviation; LLCI: lower limit confidence interval; ULCI: upper limit confidence interval.

Table 5 shows the mediating effects of the bootstrap method at different levels of moderated variables. When filial piety is traditional, the effect of elder abuse on depression through social isolation (B = 0.0346, [0.023, 0.047]), loneliness (B = 0.068 [0.0461, 0.0893]), and social participation (B = 0.0035, [0.0003, 0.0084]) is significantly enhanced. However, the effect of elder abuse on depression was significantly reduced through the social network and showed a negative correlation (B=-0.0042, [-0.0087, -0.0009]).

[Insert Fig. 4 here]

Discussion

This study is the first to consider how and to what extent different dimensions of social well-being (i.e. social network, social isolation, loneliness, and social participation) are correlated with elder abuse and depression. It also examined how the relationship between elder abuse and depression among Chinese older adults is mediated by the multi-dimensions of social well-being, and how these associations may vary as a function

of older adults' attitudes towards filial piety. This study incorporated the cultural context into the stress-and-coping model and used the 2018 CLASS data. Accordingly, it obtained four main results: First, consistent with the literature [4,56], victims of elder abuse are more likely to feel depressed compared with older adults who have not experienced elder abuse. Second, filial piety is not a protective factor for depression among victims of elder abuse. Instead, it exacerbates the effect of elder abuse on depression, and older adults with traditional filial piety are more likely to feel depressed after suffering from elder abuse. Third, social isolation and loneliness have a mediating effect on the association between elder abuse and depression. Fourth, filial piety has a moderating effect on the links among elder abuse, different aspects of social well-being, and depression.

Filial piety exacerbates depression

In contrast to earlier findings [15], the cultural value of filial piety does not protect Chinese older adults from elder abuse. Instead, filial piety exacerbates the association between elder abuse and depression. The filial discrepancy arising from elder abuse exaggerated the negative effect of elder abuse on depression in late life. This is because the mismatch between older adults' expectations and their children's behaviour violates the essential filial obligation. In addition, our findings verified the effect of filial piety on the psychosocial pathway of elder abuse and depression: victims of elder abuse with traditional filial piety were more likely to feel isolated and lonely, and this further contributed to their depression. A possible explanation is that since elder abuse is a significant violation of traditional filial obligations, older adults with traditional filial piety may prefer to 'eat bitterness' and not complain to outsiders [15]. This is because disclosing their family's disfunction brings shame to the family and ancestors, and existence of elder abuse indicates that older adults have lost their traditional authoritative status. The loss of such authoritative status may exacerbate feelings of worthlessness and hopelessness among older adults, leading to significant social isolation and increased loneliness, which further increases depression.

Various aspects of social well-being as coping strategies operate differently

Various dimensions of social well-being have different mediating effects on the association between elder abuse and depression. Our findings suggest that, when not considering older adults' attitudes towards filial piety, social isolation and loneliness are important mediators for the relationship between elder abuse and depression. This indicates that victims of elder abuse are more likely to feel isolated and lonely than older adults who have never experienced elder abuse, as their isolated and lonely status will exaggerate their depressive symptoms. However, when older adults' attitudes towards filial piety were considered, one unanticipated finding was that the social network and social participation are significant mediators. Specifically, victims of elder abuse with traditional filial piety and a larger social network are less likely to feel depressed compared to those with a small social network. In addition, victims of elder abuse with traditional filial piety tend to have more social participation, but social participation does not alleviate their depressive symptoms.

Our findings further support the association between the social network and reduced depression. Victims of elder abuse with a larger social network are less likely to feel depressed, as their social network provides them not only access to instrumental resources but also emotional support. However, the findings do not support previous research on the presumption of social participation and depression (e.g. [36,37]). There are several possible explanations for the negative associations between social participation and depression among victims of elder abuse with traditional filial piety. One explanation is that to avoid a sense of worthlessness, victims of elder abuse may increase their social engagement when participating in various social activities. However, too much social activity becomes a stress factor, leading older people to become overwhelmed because of the concern about 'losing face', which further escalates their depressive symptoms.

Coping is 'a set of concrete responses to a stressful situation or event that are intended to resolve the problem or reduce distress' [57]. As mediators of elder abuse and depression, loneliness and social isolation are both consequences and ineffective emotion-focused coping mechanisms for victims of elder abuse. They do not address the root cause of the problem but can exacerbate the negative effects of elder abuse. Social isolation also prevent older adults from receiving the support and resources they need to address the abuse they are experiencing. Without a support network, they may be less likely to report the abuse or seek help from others, which can allow the abuse to continue. On the other hand, the social network and social participation are effective problem-focused coping strategies. This is because having a supportive social network can help victims of elder abuse feel less isolated as well as receive practical help and emotional support. Social participation can help victims of elder abuse to not only develop new relationships and support networks but also feel a sense of belonging and purpose, which can in turn improve their mental health and well-being (see Figure S1 in Supplementary Materials).

Limitations and future directions

This study provides new insights into the complex and different roles that social well-being and filial piety appear to play in the relationship between elder abuse and depression among Chinese older adults. However, these results should be interpreted cautiously as there are several limitations to this study that are worth mentioning.

First, while our research presented a theoretical causal model to explain the identified effects, it is important to acknowledge that alternative interpretations are also possible. The effects' directionality remains difficult to verify, and further longitudinal research is necessary to clarify these relationships. Second, one novelty of this study lies in measuring the various dimensions of social well-being and exploring how they are connected to older adults' depression. Thus, variations in measurements may contribute significantly to the differences observed in different studies' findings. Despite these limitations, this study provides valuable data on how filial piety and multi-dimensions of social well-being influence the emotional well-being of victims of elder abuse.

Conclusions

Drawing from the existing empirical research and the well-established stress-and-coping model, this study puts forth a comprehensive framework of elder abuse as an important stressful life event. It also highlights filial piety and various dimensions of social well-being as factors that potentially moderate or mediate the association between elder abuse and depression for Chinese older adults. To our knowledge, this is the first study that sheds light on the how filial piety exacerbates the depression of victims of elder abuse through various dimensions of social well-being. Our analyses demonstrated that filial piety as a cultural value might become a catalyst of severe depression among Chinese victims of elder abuse. The filial discrepancy and stigma resulting from elder abuse might influence not only older adults' feelings of loneliness and social isolation but also their social participation and social network, which will further deteriorate depressive symptoms in later life.

These findings have important implications for service provision and intervention design for older adults: (1) It is important to adapt a culturally sensitive multifaceted approach that involves prevention, detection, education, improved access to social services and legal protections, and addressing of cultural attitudes and beliefs that may contribute to the depression of older people. (2) By acknowledging that social well-being is also a coping strategy, it is essential to tap into the social network resources and involve community members to prevent and address the issues of elder abuse, as they can play a critical role in identifying and reporting incidents of abuse. Additionally, community participation is particularly relevant in buffering and as a coping strategy against depression in late life. (3) To improve older adults' mobility and activity engagement, healthcare professionals, non-profits, private businesses, local communities, and state agencies should work together to develop sound community development and social work intervention mechanisms that reflect the needs of the ageing population.

Abbreviations

ADL: activities of daily living

CES-D: Center for Epidemiological Studies Depression Scale

CLASS: China Longitudinal Aging Social Survey

H-S/EAST: Hwalek–Sengstock Elder Abuse Screening Test

IADL: instrumental activities of daily living

LLCI: lower limit confidence interval

SD: standard deviation

SE: standard error

ULCI: upper limit confidence interval

Declarations

Ethics approval and consent to participate: Ethical approval for collecting data on human subjects was received at Renming University by their institutional review board (IRB). This approval is updated annually. All subjects gave their informed consent for inclusion before they participated in the survey. We confirm that all methods were carried out in accordance with relevant guidelines and regulations.

Consent for publication: Not applicable.

Availability of data and materials: The data that support the findings of this study are available from the official website of China Longitudinal Aging Social Survey.

Competing interests: The authors declare no potential conflicts of interest with respect to the research, authorship, or publication of this article.

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Authors' contributions: All authors worked collectively to develop the theoretical framework and interpretation of the results. SX significantly contributed to statistical analysis plan and conducted statistical analyses. YZ substantially contributed to the manuscript drafting. All authors critically reviewed and revised the manuscript draft and approved the final version for submission.

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Figures

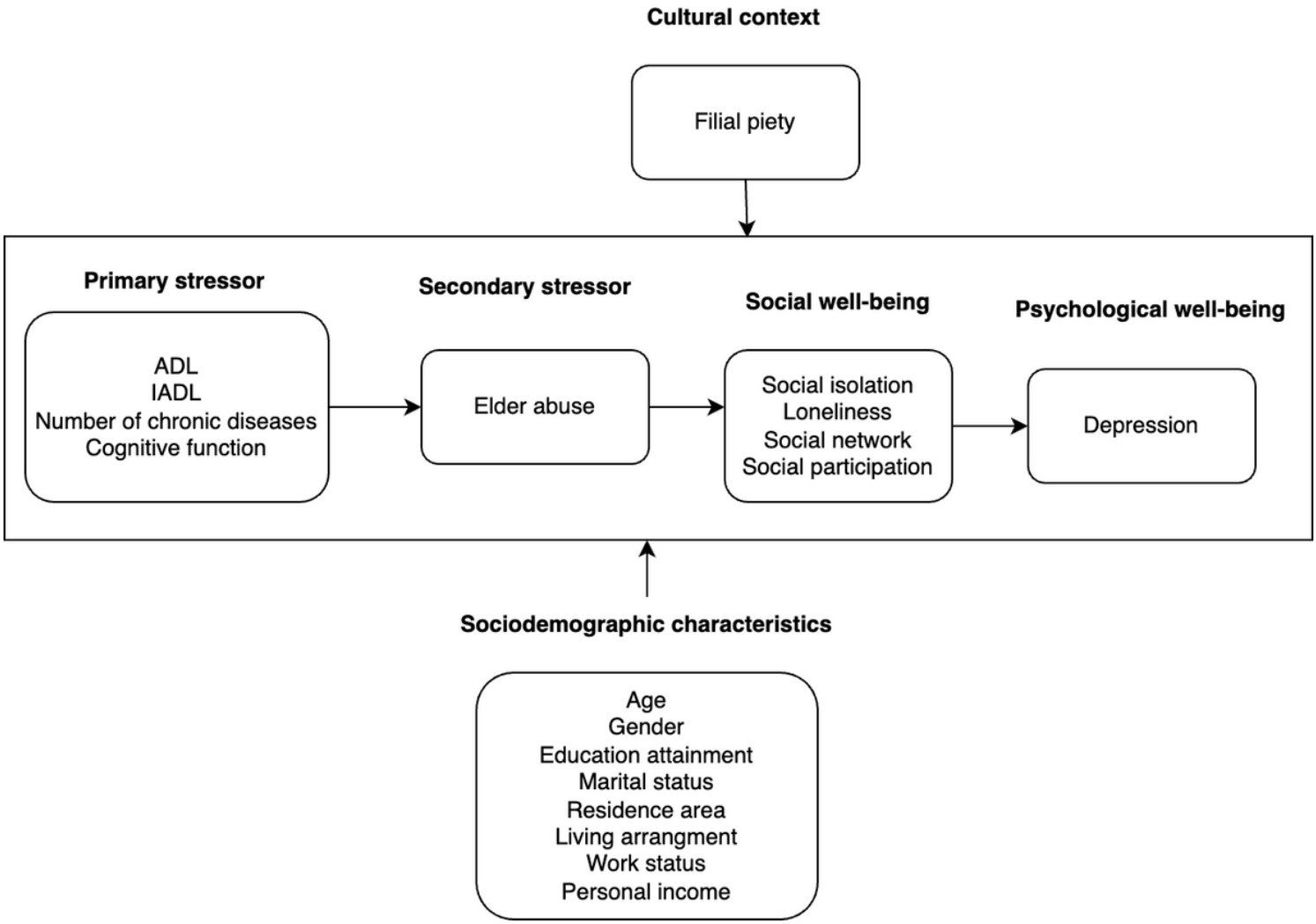

Figure 1

A conceptual model based on the stress-and-coping model.

Note: ADL: activities of daily living; IADL: instrumental activities of daily living.

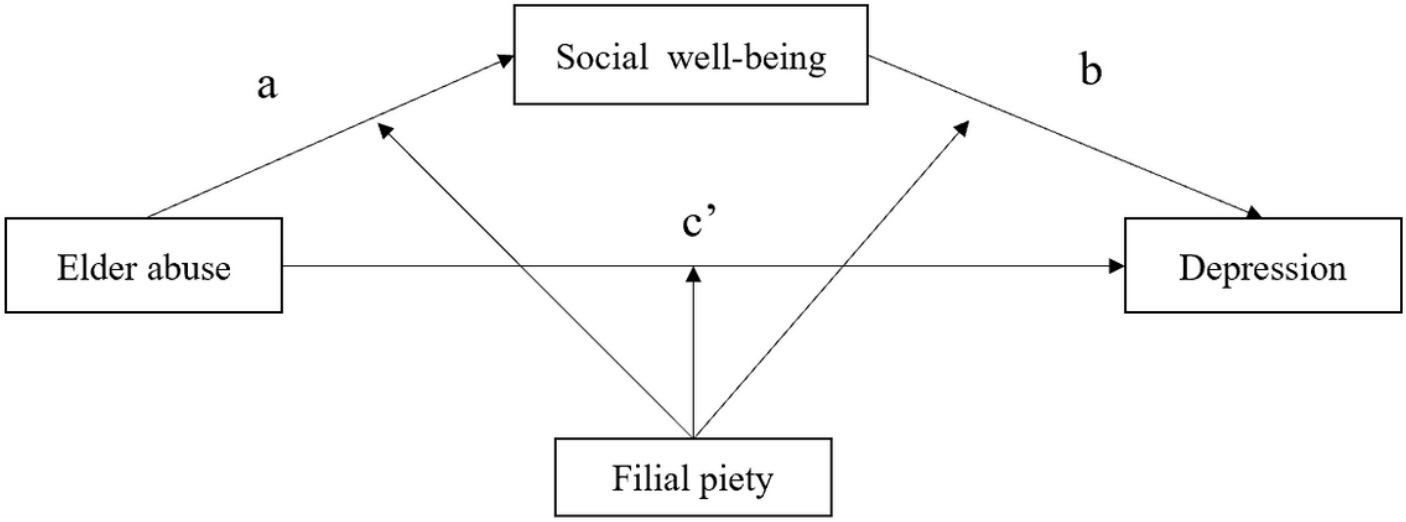

Figure 2

Hypothesized schematic model of filial piety as the moderator in the mediation model of social well-being and its links with elder abuse and depression (Andrew Hayes's moderation-mediation model 59) [55]

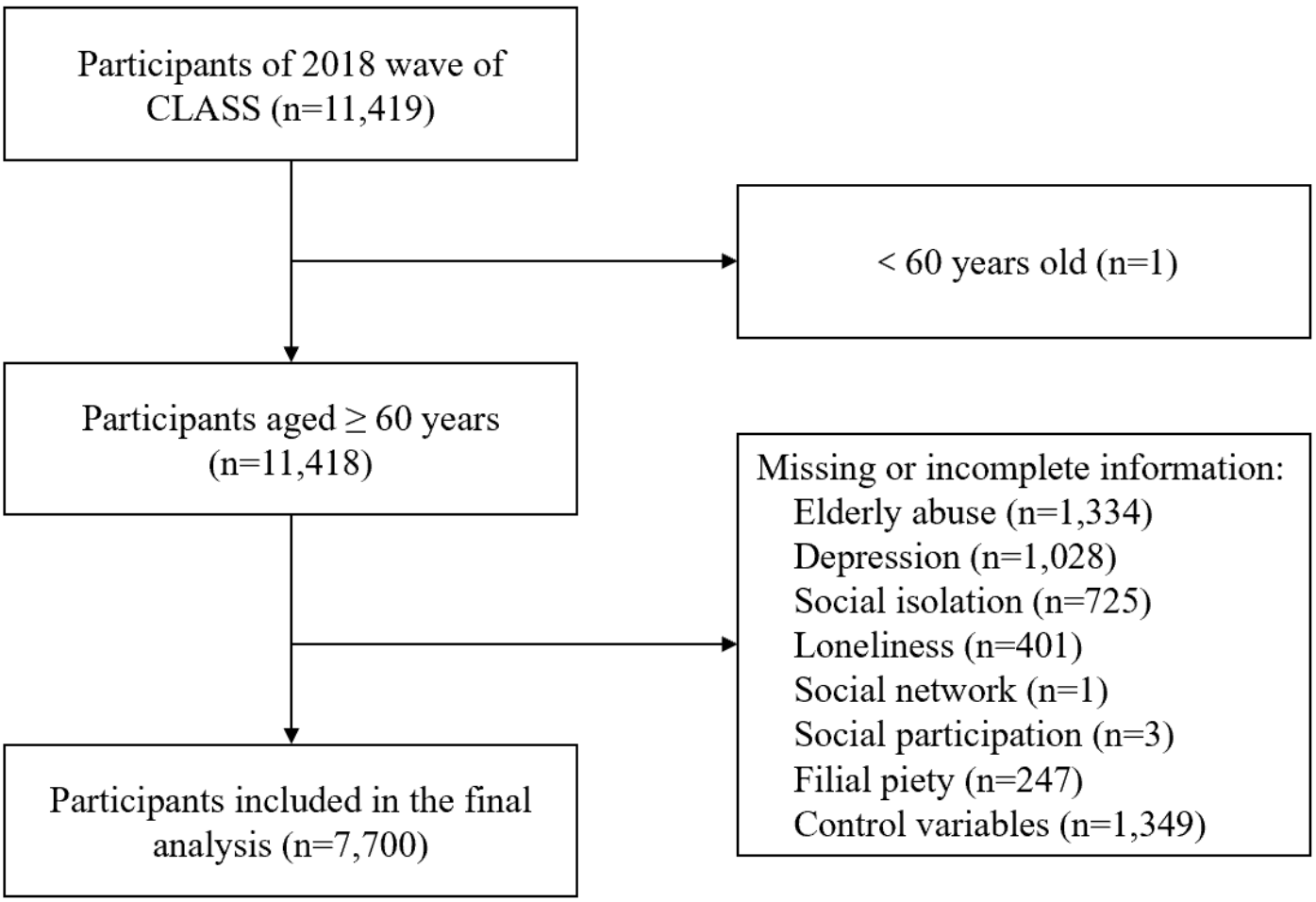

Figure 3

Flowchart for the selection of study participants.

Note: CLASS: China Longitudinal Aging Social Survey.

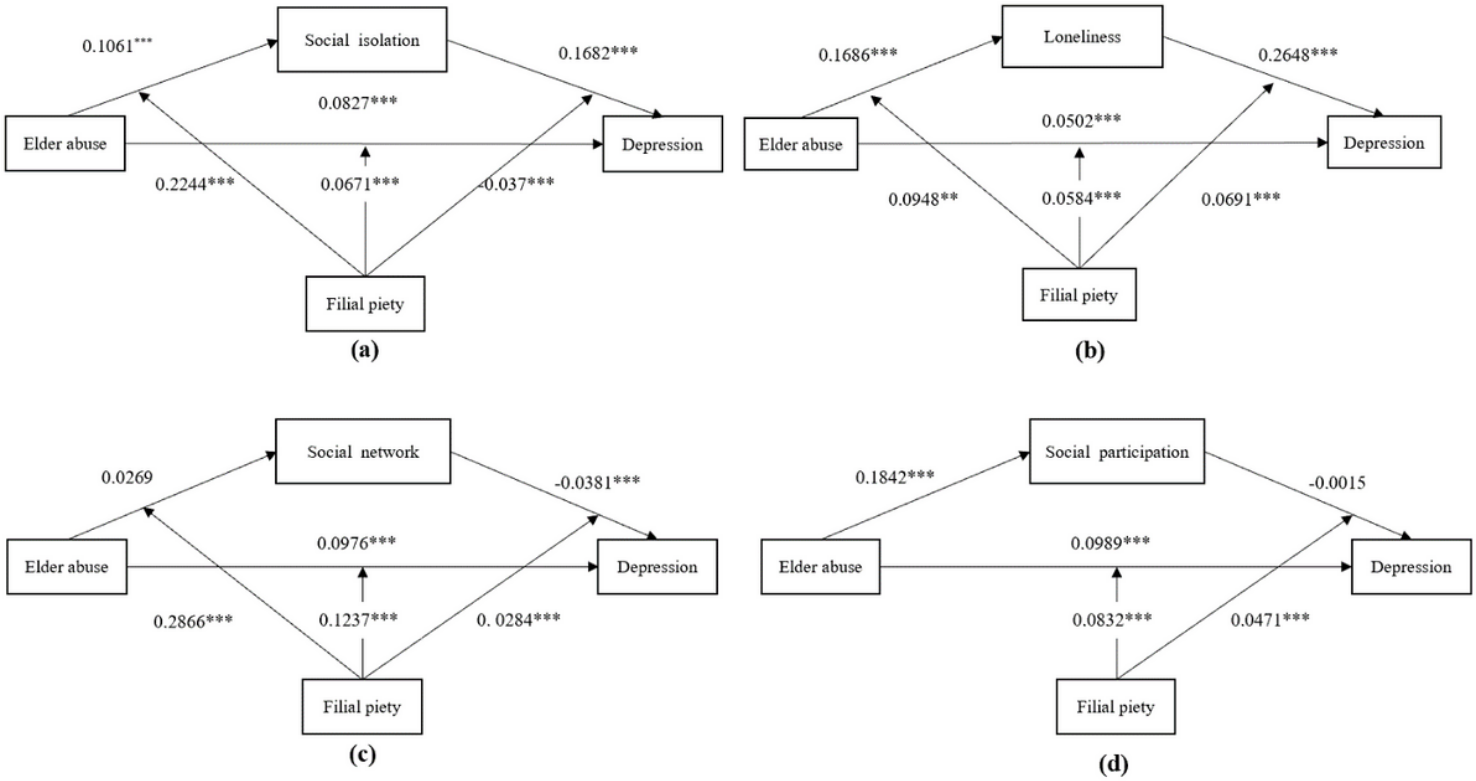

Figure 4

Three moderated mediation models.

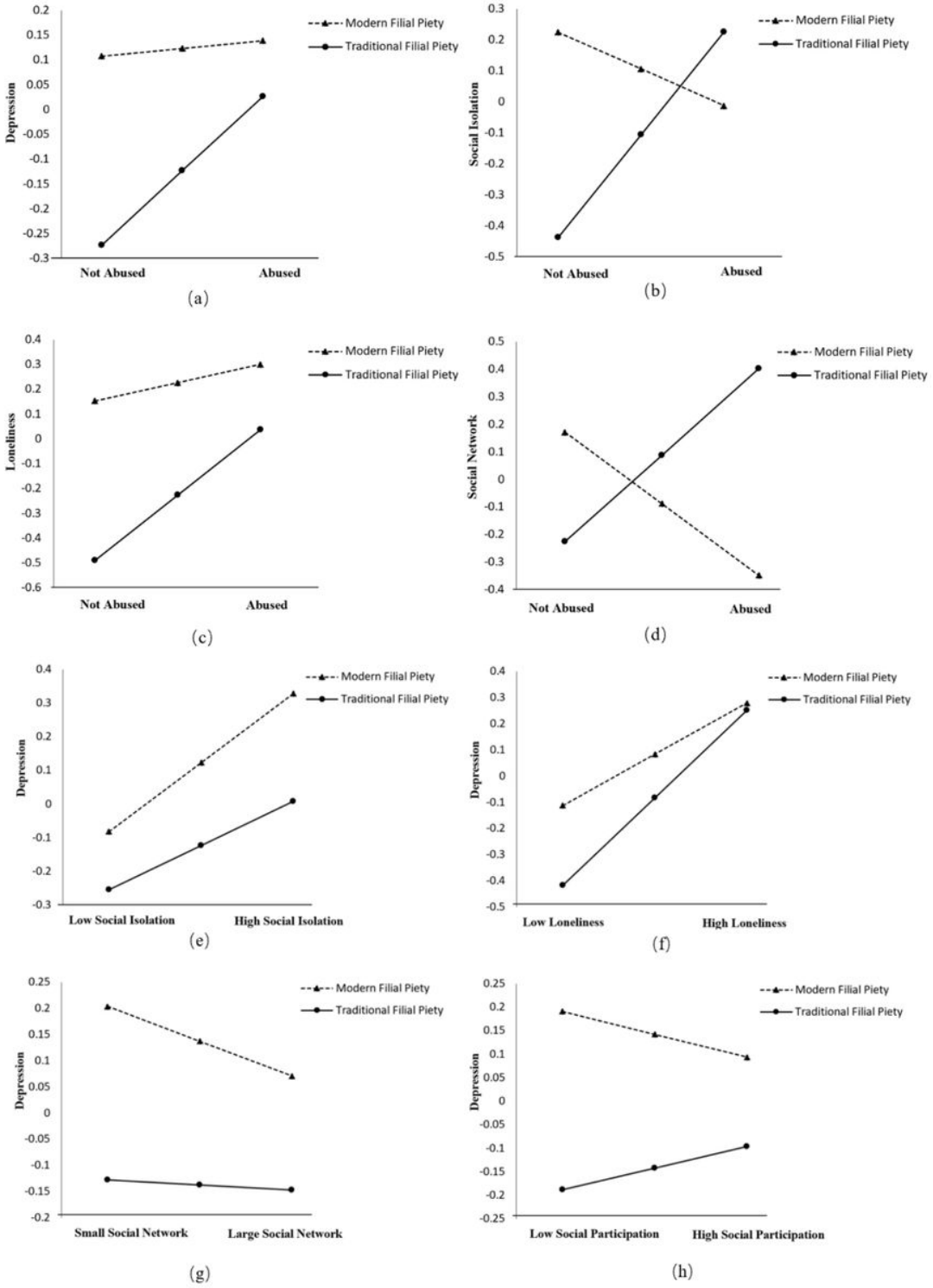

Figure 5

Simple plot of paths a and c' indicating the relationship between abuse, social well-being, and depression among different filial piety levels.

Supplementary Files

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- 0410supplementary1.docx