Long-Term Effects of Childhood Adversity on the Subjective Well-being of Older Adults in Urban China: The Mediating Effect of Elder Abuse

Objectives: Adverse childhood experiences (ACEs) have negative impacts on individuals' subjective well-being (SWB) in later life. This article investigates the relationships between the ACEs and SWB of Chinese older adults and examines how elder abuse victimization mediates the pathways in these relationships.

Method: We used retrospective cross-sectional survey data collected in Beijing, China, in 2019. The study sample consists of 1,002 older adults aged 65 years and over. The survey measured individual types, number, and various categories of ACEs of older adults and their elder abuse victimization experiences, along with their SWB (i.e., depression and life satisfaction). We tested the potential mediating role of elder abuse victimization in the relationships between ACEs and SWB.

Results: After controlling for socio-demographic factors and self-rated health, the results suggest a full mediating effect of elder abuse on the relationship between both individual types and multiple categories of ACEs (i.e., childhood victimization, the family's economic difficulties, and a family member's episodes of illness) and depression, in addition to a partial mediating effect of elder abuse between number of ACEs and depression. A full mediating effect of elder abuse was found in regard to the relationship between a family's economic difficulties and life satisfaction.

Discussion: This study provides evidence for a long-term impact of ACEs on the SWB of older adults in China. In analyzing and understanding elder abuse

victimization as a pathway linking ACEs and SWB, we stress the importance of the prevention of interpersonal violence across the life course.

Introduction

Subjective well-being (SWB) is an umbrella term describing a person's overall state based on the self-appraisal of one's life (Diener & Ryan, 2009). As a multidimensional concept, it includes both positive and negative dimensions, such as the evaluation of life satisfaction, happiness, anger, stress, anxiety, and depression. Research has found that SWB is closely related to one's health and serves as a protective factor for mortality (Martín-María et al., 2017). The cumulative burden of traumatic life events is closely related to older adults' SWB and is regarded as a risk factor for declining well-being in later life (Hamby et al., 2014; Ogle et al., 2014). There are various types of traumatic life events, ranging from adverse childhood experiences (ACEs) to exposure to violence and assault in later adulthood. However, the mechanism underlying the association between ACEs, elder abuse victimization, and the SWB of older adults requires further elucidation. The current study was designed to contribute to the literature concerning the impacts of these traumatic events on older adults' SWB and explore the mechanism underlying these impacts.

ACEs and SWB

ACEs are usually reported as a prevalent public health problem; the larger the number of ACEs, the greater the risk of health conditions (Petruccelli et al., 2019). ACEs can refer to a variety of direct and indirect traumatic experiences of individuals under the age of 18. Thus, multiple adversities are included in studies assessing ACEs, such as different types of childhood victimization (e.g., abuse and neglect, witnessing violence between parents), household dysfunction (e.g., parental separation, divorce, or death, incarceration, drug abuse, etc.), a family member's illness episodes, and the family's economic difficulties (e.g., family financial problems and strain, adverse living conditions). Despite the way in which ACEs have been examined in a few studies and identified as a prevalent issue in Chinese populations, the measurements used varied widely, which may have caused large

discrepancies in the prevalence rates reported (Ho et al., 2019). Further, evidence about the prevalence of ACEs among Chinese older adults is scant, with most research focusing on adversities experienced by Chinese young adults and adolescents (Li et al., 2021; Zhang et al., 2020).

Based on the life course stress perspective, individuals with ACEs may be more vulnerable to exposure to stress later in life and thus accumulate stress burden (Nurius et al., 2015). ACEs may have lasting effects on the emotions and other forms of functioning of individuals (Rhee et al., 2019). While most research findings to date concerning the negative impacts of ACEs focus on adolescents and adults (Hughes et al., 2017; Petruccelli et al., 2019), several emerging studies have demonstrated that the consequences of ACEs can extend into older adulthood (Raposo et al., 2014; Rhee et al., 2019; Roh et al., 2015; Sachs-Ericsson et al., 2011). For example, older adults with ACEs are more likely to experience anxiety disorder and depressive symptoms (Kim et al., 2019; Raposo et al., 2014; Rhee et al., 2019). ACEs could be associated with lower levels of life satisfaction in different old age cohorts (Krause, 2004). A national longitudinal study in the US also found that a larger number of ACEs was associated with lower levels of life satisfaction after controlling for age and other demographic factors (Mosley-Johnson et al., 2019).

Elder Abuse and SWB

Elder abuse is recognized as a significant public health problem, with a high prevalence rate and serious consequences for older adults, their families, and a country's health systems (Pillemer et al., 2016; Yon et al., 2017). It is estimated that one in seven community-residing older adults have experienced elder abuse (Yon et al., 2017). In the US, the past-year prevalence rate for elder abuse was 11%, based on a nationally representative sample (Williams et al., 2017). According to a large-scale national representative survey in China, 7% of older adults (65 years and older) had experienced one or more types of abuse in

the preceding year (Ji et al., 2018). The risk factors for elder abuse among Chinese adults are comparable to those reported in studies conducted in Western countries; they include low socio-economic status, poor physical and mental health, and a lack of social support (Dong, 2015).

Experiencing elder abuse can result in various forms of physical and psychological symptoms (Yon et al., 2017). As a stressful life event, elder abuse can cause higher levels of depression (Fisher & Regan, 2006), anxiety, stress, and suicidal ideation (Olofsson et al., 2012). Victims of elder abuse were found to have shortened telomere lengths, implying that there are also negative impacts of elder abuse on cellular aging (Fang et al., 2021). Research has further found that life satisfaction is negatively associated with violence victimization of one or more types, including child abuse, intimate partner violence, exposure to community violence, and elder abuse (Lamoureux-Lamarche & Vasiliadis, 2017).

Linking ACEs with Elder Abuse: Pathways to SWB

Emerging studies have shown that exposure to ACEs is associated with health problems in older adults. Because of the high prevalence rate of ACEs and the negative impacts of ACEs extending to adulthood and later adulthood, it is important to study the mechanism underlying the association between ACEs and later-life well-being outcomes to develop preventative or intervention strategies. The effects of early economic difficulties, health problems, victimization experiences, and other environmental disadvantages can accumulate over one's life course and cause long-term vulnerability to elder abuse due to an increase in individual-level risk factors. For example, poverty is a well-documented risk factor of elder abuse (Pillemer et al., 2016). In addition, early health problems (among both individuals and/or their family members) and family dysfunction are often associated with economic difficulties. The cycle of violence theory suggests that there is a link between childhood victimization and later-life victimization (Storey, 2020). Past child abuse

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victimization or exposure to domestic violence were also found to be associated with later perpetration (Dong et al., 2017) or elder abuse victimization (Kong & Easton, 2019).

According to cumulative inequality theory, structurally generated inequality accumulates over one's life course through demographic and developmental processes (Ferraro & Shippee, 2009). The accumulation of risks and disadvantages can manifest in later life and cause further damage. Guided by the idea of cumulative disadvantage, Easton et al. (2020) found that ACEs compromised health in middle adulthood and further increased individuals' risk of elder abuse victimization. In the current research, we posit that ACEs may increase individuals' risk of elder abuse victimization and then may negatively impact individuals' well-being in later life. As elder abuse chronologically follows early-life exposure, it could be a risk factor mediating the association between ACEs and SWB.

The Current Study

Most evidence about the relationship between ACEs and health outcomes among older adults comes from Western studies (Kim et al., 2019; Krause, 2004; Raposo et al., 2014; Rhee et al., 2019). Due to its distinct socio-cultural and historical contexts, ACEs specifically in China need to be considered. For example, across the past century, China has experienced a long period of poverty, underdevelopment, and food shortages, and many older people in China have experienced starvation and lived in rural areas during their childhoods (Liu et al., 2019). There is some evidence showing that exposure to hunger, experiencing parental mental illness, and experiencing physical and emotional abuse during childhood are associated with depression in older Chinese adults (Cui et al., 2020). However, research on the relationship between ACEs and SWB is still limited, especially considering the huge aging population.

To examine the impacts of ACEs, the focus of existing research has been on individuals with multiple ACEs (i.e., four types or more; Hughes et al., 2017). There are also

emerging studies that employed latent class analysis to define the patterns of exposure to ACEs (Kim et al., 2019). However, the ways in which different categories of ACEs are related to individuals' well-being are yet to be identified. In addition, the pathway linking ACEs to reduced SWB is not fully understood.

The aim of this study is to examine the ways in which ACE-related variables (individual types, categories, and number of ACEs) are related to the SWB of Chinese older adults. Based on the theoretical discussion and existing literature above, both exposure to ACEs and elder abuse can be linked to reduced SWB. Elder abuse may play a significant role in the connection between ACEs and older adults' SWB. Thus, using a community-dwelling elderly Chinese sample, we tested four hypotheses: (1) ACEs (individual types, categories, and number of ACEs) would be associated with a higher level of depression among Chinese older adults; (2) ACEs would be associated with decreased life satisfaction among Chinese older adults; (3) elder abuse would mediate the association between ACEs and depression among Chinese older adults; and (4) elder abuse would mediate the association between ACEs and life satisfaction among Chinese older adults.

Methodology

Sampling Method

The study used data from a 2019 follow-up survey of community-dwelling older adults from an urban area in Beijing, China. Data were collected in two steps using a systematic approach. First, with official approval from the Bureau of Civil Affairs of District A, Beijing, we obtained a list of the full names of all the older residents aged 65 years or above. Second, the older adults were selected through systematic sampling, which involved fixed intervals ($K = 6$) and non-repetitive random numbers being generated. If both members of a couple living within the same household were selected, the older of the two was invited to participate in the survey. A total of 2,061 valid samples were originally obtained in 2018.

In the 2019 follow-up study, we successfully followed up with 1,076 respondents, with a response rate of 52.2%. No significant differences in socio-demographic characteristics were found between the interviewed group and the drop-out group. After excluding participants with missing data for the relevant variables, 1,002 (93.1%) were eventually included in the present analysis.

Data Collection Procedure

The questionnaire survey was administered using face-to-face interviews. The questionnaire took 50 minutes on average to be completed. A total of 21 MSW students were trained as interviewers by the researchers before the start of the survey. The interviewers introduced the research purposes and obtained participants' informed consent before the interviews took place. All study procedures were approved by the Ethics Committee of the first author's affiliated university.

Measurements

Depression

Depression was measured using the 10-item Center for Epidemiologic Studies Short Depression Scale (CESD-10; Andresen et al., 1994). This scale has been widely used among Chinese older adults, with a Cronbach's alpha of 0.76 in the samples obtained from the China Health and Retirement Longitudinal Study (CHARLS Research Team, 2019). The score for each item ranges from zero (rarely or never) to three (all the time). A higher score represents a higher level of depression. In this study, the Cronbach's alpha of the scale was 0.803.

Life Satisfaction

Life satisfaction was measured using the revised Chinese version of the Satisfaction with Life Scale (SWLS; Diener et al., 1985), which contains five items rated on a seven-point Likert scale (ranging from 1 = completely disagree to 7 = completely agree). The total score ranges from five to 35, with a higher score indicating a higher level of life satisfaction. In this

study, the Cronbach's α was 0.858.

Elder Abuse

Elder abuse was measured using six self-constructed questions. Two questions measuring physical and psychological abuse were adopted and modified from the revised Conflict Tactics Scales (CTS2; Straus et al., 1996). For example, psychological aggression victimization was measured using the following question: "Has anyone used psychological violence (e.g., insulting, swearing, shouting, or yelling at you, saying something to spite you, calling you ugly, fat, or lousy, destroying something belonging to you, threatening to drive you out of the house, etc.) against you after the age of 60?". Four questions adopted from the Third National Chinese Women Social Status Survey were used to examine active and passive neglect, abandonment, and financial abuse. For example, financial abuse was measured using the following question: "Has anyone taken your belongings or money (e.g., old-age pension) without your permission?". Each item was coded as a binary variable (0 = never experienced this type of victimization after the age of 60, 1 = experienced this type of victimization after 60), and we calculated the total number of types of elder abuse.

ACEs

A total number of 15 items selected based on previous studies on ACEs (Börnhorst et al., 2019; Maclean et al., 2016; Nurius et al., 2015; Shi & Wu, 2018) were examined in the current research. Among these 15 ACE-related items, 13 items were further placed into different categories, including childhood victimization (i.e., experiencing frequent quarrels between parents, suffering frequent physical punishment from parents), the family's economic difficulties (i.e., perceived socio-economic difficulty of the original family, living in a rural area, having experienced starvation), household dysfunction (i.e., poor relationship with parents, parental divorce, death of father, death of mother), and a family member's illness episodes (i.e., participants' poor health status, father's poor health status, mother's

poor health status, serious or chronic disease). We also assessed two additional types of

ACEs: experiencing major natural disasters (e.g., earthquake, famine, flood, etc.) and

dropping out from school in childhood, which reflected the experience of drastic societal and

environmental changes among Chinese older adults. For individual types of ACEs, binary

variables (1=yes or 0=no) were used in the analyses. The number of ACEs and ACE

categories (namely, the number of ACEs under different categories) were examined as

continuous variables.

Other Variables

Participants were asked about their socio-demographic characteristics, including their

age, gender, educational level, whether they received a pension, marital status, and the

number of children. In addition, the participants also reported their self-rated health on a

three-point Likert scale. The above factors were controlled for in the analyses, as they could

be correlates to SWB. For example, Chinese older adults with children had better mental

health than those without children (Wu & Penning, 2019). Receiving a pension was related to

decreased depression and increased life satisfaction (Chen et al., 2019; Lu & Shelley, 2019).

Self-rated health also had a significant impact on depression (Peleg & Nudelman, 2021).

Statistical Analyses

First, we used descriptive statistics to examine the characteristics of the participants.

Second, we used a correlation matrix to calculate the bivariate correlations among all the

variables. Third, before conducting mediation models, we established linear regression

models to test the ACE-related predictors of elder abuse. Age, gender, educational level,

whether the participant received a pension, marital status, number of children, and self-rated

health were introduced into the model as covariates. Only the ACEs that were found to be

significantly ($p < 0.05$) or borderline significantly ($0.05 < p < 0.1$) related to elder abuse were

considered in the next step of the mediating effect tests. Fourth, to identify the relationships

among ACE-related variables, elder abuse, and SWB (i.e., depression and life satisfaction), path analyses were performed. The covariates mentioned above were also controlled when exploring mediating effects. The direct effect, and the indirect effect were calculated and reported. This approach involved using bootstrapping, which entails repeatedly sampling from the dataset with replacements (in this case, 1,000 bootstrap resamples) to create an approximation of the sampling distribution of the indirect effect, and to generate confidence intervals (CIs) for these effects. The indirect effect was deemed significant if the confidence interval did not cross zero. All the data analyses were performed using IBM SPSS 20.0 software and Process 3.3.

Results

Profile of the Sample and Correlational Analyses

Table 1 shows the descriptive statistics of participants' socio-demographic characteristics and self-rated health, ACE-related variables, elder abuse, and SWB. The age of the participants ranged from 65 to 96 years, with a mean of 74.9 (SD = 6.2). Slightly more than half were female (53.6%). Over 60% of the participants had an educational level of junior secondary or below and 93.3% of them were pension recipients. Those who were currently married comprised 68.6% of the total. The average number of children was 2.3 (SD = 1.1). A total of 31.4% of the respondents reported having good health. The average number of ACEs was 3.6 (SD = 2.0). Detailed information about the different types and categories of ACEs is shown in Table 1. A total of 7.3% of the participants had experienced elder abuse. The mean value of depression was 4.9 (SD = 4.9) and that of life satisfaction was 27.9 (SD = 5.7). According to the bivariate correlation analyses, no strong correlation ($r > 0.6$) was found among the variables, aside from some associations among ACE-related variables. Therefore, we chose to add ACE-related variables separately into the following models.

[Table 1 near here]

Impacts of ACEs and Path Analyses of Mediations

Before conducting the mediation models, we established univariate regressions to test the ACE-related predictors of elder abuse victimization. As shown in Appendix 1, the results of the univariate regression analyses demonstrated that respondents' socio-demographic characteristics and self-rated health did not predict elder abuse victimization. The association between age and elder abuse was borderline statistically significant ($p < 0.1$). After adjusting for respondents' socio-demographic characteristics and self-rated health, some ACE-related variables, such as serious or chronic disease ($\beta = 0.090$, $p = 0.030$), experiencing frequent quarrels between parents ($\beta = 0.188$, $p < 0.001$), and suffering frequent physical punishment from parents ($\beta = 0.147$, $p = 0.002$), were found to be significantly related to elder abuse; perceived socio-economic difficulties of the original family ($\beta = 0.047$, $p = 0.063$), having experienced starvation ($\beta = 0.050$, $p = 0.067$), and dropping out from school in childhood ($\beta = 0.053$, $p = 0.081$) were found to be borderline statistically significantly related to elder abuse. Number of ACEs was found to be related to elder abuse ($\beta = 0.025$, $p < 0.001$). Moreover, in terms of the categories of ACEs, childhood victimization ($\beta = 0.140$, $p < 0.001$), the family's economic difficulties ($\beta = 0.030$, $p = 0.021$), and a family member's illness episodes ($\beta = 0.031$, $p = 0.039$) were significantly associated with elder abuse. The ACE-related variables that were significantly or borderline significantly related to elder abuse were considered in the next step of the mediating effect tests.

A serial mediation model was performed via Process to examine the role of elder abuse in the connections between ACE-related variables and SWB (i.e., depression and life satisfaction). As shown in Table 2, Figure 1, and Figure 2 (please refer to Appendices 2–4 for the complete results), dropping out from school in childhood (coefficient = 0.7790, $p =$

0.0208), number of ACEs (coefficient = 0.1687, p = 0.0193), and elder abuse (p < 0.001) were significantly related to higher levels of depression. The perceived socio-economic difficulty of the original family (coefficient = 0.5029, p =.0744), childhood victimization (coefficient = 0.5697, p = 0.0911), and a family member's illness episodes (coefficient = 0.2995, p = 0.0741) were borderline statistically significantly associated with depression. Experiencing frequent quarrels between parents in childhood (coefficient = -1.4411, p = 0.0283), having experienced starvation (coefficient = -1.0863, p = 0.0039), and elder abuse (p < 0.05) were significantly associated with decreased life satisfaction.

[Table 2, Figure 1, and Figure 2 near here]

The results of the mediation analysis are shown in Table 3. With respect to the association between individual ACEs and depression, the results suggest a full mediating effect of elder abuse on the relationships between the perceived socio-economic difficulty of the original family (indirect effect = 0.0974, 95% CI [0.0012, 0.2472]), experiencing frequent quarrels between parents (indirect effect = 0.3812, 95% CI [0.1200, 0.8969]), having experienced starvation (indirect effect = 0.1031, 95% CI [0.0141, 0.2129]), suffering frequent physical punishment from parents (indirect effect = 0.3013, 95% CI [0.0567, 0.7454]), and depression among older adults. In terms of the number of ACEs, a partial mediating effect of elder abuse was found between the number of ACEs and depression (direct effect = 0.1687, 95% CI [0.0275, 0.3099]; indirect effect = 0.0504, 95% CI [0.0205, 0.0927]). In terms of the categories ACEs, the results suggest a full mediating effect of elder abuse on the relationships between childhood victimization (indirect effect = 0.2808, 95% CI [0.0929, 0.6129]), the family's economic difficulties (indirect effect = 0.0613, 95% CI [0.0210, 0.1174]), a family

member's illness episodes (indirect effect = 0.0643, 95% CI [0.0024, 0.1800), and

depression.

Regarding life satisfaction, an indirect effect was only found regarding the family's

economic difficulties via elder abuse (indirect effect = -0.0318, 95% CI [-0.0857, -0.0004]),

which indicated a full mediating effect of elder abuse on the relationship between the

family's economic difficulty and life satisfaction.

[Table 3 near here]

Discussion

The purpose of this study was to examine how ACEs affect later-life SWB among

Chinese older adults. We captured two important aspects of the SWB of older adults:

depression and life satisfaction. After controlling for socio-demographic characteristics and

self-rated health regarding their associations with SWB, we found that ACEs could be risk

factors for older adults' SWB. In partial support of Hypothesis 1, the findings revealed that

dropping out from school in childhood and the number of ACEs could predict a higher level

of depression. Perceived socio-economic difficulty of the original family, childhood

victimization, and a family member's illness episodes were borderline significantly

associated with depression. Fewer educational opportunities and a family member's illness

episodes can be significantly associated with socio-economic disadvantage, which increases

the risk for depression throughout the lifespan (Fang, 2019). The negative effects of

childhood abuse can also persist into older adulthood (Sachs-Ericsson et al., 2011). However,

we should interpret the results with some caution because of the lower levels of statistical

significance $(0.05 < p < 0.1)$ observed in some types of ACEs. In partial support of

Hypothesis 2, we found that only experiencing frequent quarrels between parents and having

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experienced starvation were significantly associated with decreased life satisfaction. The results demonstrated that ACEs might be more associated with the negative aspects of SWB, rather than the positive aspects. However, compared to the abundance of evidence linking ACEs and later-life mental health, less is known about the possible impacts of ACEs on life satisfaction (Mosley-Johnson et al., 2019).

This is one of the first studies to examine the mediating mechanism underlying the association between ACEs and SWB. As there could be cumulative effects of exposure to trauma across lifetime, we tested whether elder abuse victimization as a traumatic event in later life mediated the association between ACEs and SWB. In partial support of Hypothesis 3, we found that elder abuse victimization plays a full mediating role in the connection between several individual types of ACEs (i.e., perceived socio-economic difficulty of the original family, experiencing frequent quarrels between parents, having experienced starvation, and suffering frequent physical punishment from parents) and depression among Chinese older adults. In addition, elder abuse victimization not only partially mediated the association between the number of ACEs and depression, but fully mediated the associations between different categories of ACEs (childhood victimization, the family's economic difficulties, and a family member's illness episodes) and depression. The findings demonstrate that, as important geriatric syndromes among older adults (Dong et al., 2013), depression and elder abuse are both associated with prior trauma.

Regarding Hypothesis 4, the mediating effect of elder abuse in the association between ACEs and life satisfaction was not pronounced, except for the relationship between the family's economic difficulties and life satisfaction among older adults. This finding indicates that socio-economic conditions throughout the life course can shape an individual's SWB. Research has shown that lower levels of SES in childhood are associated with a greater risk of ACEs (Walsh et al., 2019).

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The results of the study demonstrate that the impacts of ACEs can be cumulative, and cumulative victimization experiences at different life stages can be a powerful correlate of SWB. Accumulative traumatic experiences may increase the vulnerability of older adults and reduce their psychological resilience, which further impairs their quality of life (Zheng et al., 2020). According to Hamby et al. (2014), addressing the intersection of different forms of violence and studying the impacts of cumulative victimization burden are fast-growing trends in violence research. The current study enhances the existing understanding of violence across the life course in this context.

Limitations

First, due to the cross-sectional nature of the study, it is difficult to determine whether the associations are reciprocal and to draw causal inferences. For example, psychological distress is also considered to be a risk factor for elder abuse (Dong et al., 2013). However, in our study, we focus more on the cumulative burden of victimization experiences. Second, the impact of ACEs can vary according to severity and frequency; the severity and frequency of elder victimization also have different impacts on the SWB of older adults (Fisher & Regan, 2006). Using the binary items to measure each type of ACEs and elder abuse limits further in-depth exploration of the associations between ACEs, elder victimization, and SWB. Third, as less than 10% of participants reported themselves as victims of elder abuse and neglect, the analyses of elder abuse as a mediator should be interpreted with caution. Fourth, since the assessment of ACEs was retrospective, recall bias was unavoidable in the current study and may have affected the estimates. Finally, due to sampling limitations, our findings may not be generalizable to individuals living in rural areas of China.

Implications

Our results have several implications for researchers, health and social workers, and policy makers. Regarding research, large-scale representative studies in China are warranted

in the future to comprehensively examine ACEs of different types, frequencies, and severities, as well as their cumulative influence. As there is a lack of evidence from follow-up studies examining the longitudinal impacts of different types of ACEs, future studies in health research with larger cohorts should consider including ACEs with more comprehensive measurements. Future studies should also incorporate more well-being constructs, such as life satisfaction and social well-being (Mosley-Johnson et al., 2019). Much more could be done to explore the mechanisms underlying the association between ACEs and well-being outcomes across the life course, which might provide new ways of understanding and preventing the negative consequences of ACEs. Such associations could also be investigated in future studies conducted in Western populations.

Regarding practice, understanding the long-term negative consequences of ACEs points to the need to consider early-life factors when providing health services to older adults. As experience seeking treatment can reduce the likelihood of mental health disorders in older adults with ACEs (Raposo et al., 2014), it is important to involve more older adults in intervention programs developed to address both cumulative victimization burdens and psychopathology among older adults. As suggested by Krause (2004), interventions providing emotional support may be helpful in terms of reducing mental health issues among older adults who are victims of lifetime traumatic events.

The findings of this study can also contribute to improvements to public health and welfare policies for the aging society in China. The aging population in China brings about a series of healthcare challenges that must be overcome to meet the growing physical and mental healthcare demands of the elderly. Because ACEs are associated with significant well-being and health outcomes, more policy efforts on the early prevention of ACEs should be made to prevent the cumulative victimization burden of individuals and to further reduce pressure on health and social welfare systems.

Conclusion

Using a life course perspective, our study recognizes the negative impacts of ACEs on the SWB of Chinese older adults. Elder abuse was found to be associated with prior ACEs and particularly mediated the relationship between ACEs and depression among Chinese older adults. More public health and social service efforts are needed to develop intervention programs to prevent ACEs and to reduce the negative impacts of cumulative victimization burdens.

Declaration of Conflicting Interests

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

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Table 1 *Characteristics of the Sample (N = 1,002)*

	N/ M(±SD)	%
Socio-demographic characteristics		
Age	74.9 ± 6.2	
Gender		
female	537	53.6
male	465	46.4
Educational level		
Pre-primary/primary	293	29.2
Junior secondary	332	33.1
Senior secondary	225	22.5
Tertiary or above	152	15.2
Pension recipient or not		
No	67	6.7
Yes	935	93.3
Marital status		
Currently not married	315	31.4
Currently married	687	68.6
No. of children	2.3 ± 1.1	
Self-rated health		
Poor health	243	24.3
General health	444	44.3
Good health	315	31.4
Individual types of ACEs		
1. Perceived socio-economic difficulty of the original family	531	53.0
2. Participant's poor health status	87	8.7
3. Father's poor health status	137	13.7
4. Mother's poor health status	166	16.6
5. Poor relationship with parents	12	1.2
6. Serious or chronic disease	102	10.2
7. Parental divorce	17	1.7
8. Experiencing frequent quarrels between parents	77	7.7
9. Death of father	120	12.0
10. Death of mother	92	9.2
11. Living in a rural area	670	66.9
12. Having experienced starvation	675	67.4
13. Suffering frequent physical punishment from parents	79	7.9
14. Experiencing major natural disasters	635	63.4
15. Dropping out from school in childhood	238	23.8
Number of ACEs	3.6 ± 2.0	
Category of ACEs		
Childhood victimization	0.2 ± 0.4	
Family's economic difficulties	1.9 ± 1.0	
Household dysfunction	0.2 ± 0.5	
Family member's illness episodes	0.5 ± 0.8	
Elder abuse	0.1±0.4	
No	929	92.7
Yes	73	7.3
Depression	4.9 ± 4.9	
Life satisfaction	27.9 ± 5.7	

Note. N= number, M = mean, SD = standard deviation.

Table 2 *Regression Coefficients for the Serial Mediation Models*

		Elder abuse			Depression			Life satisfaction	
		Coeff.	p		Coeff.	p		Coeff.	p
Perceived socio-economic difficulty of the original family	a	$.0474^+$	.0633	c_1	$.5029^+$	.0744	c_2	.1555	.6623
Elder abuse				b_1	2.0544^{***}	.0000	b_2	-1.1145^*	.0120
Serious or chronic disease	a	$.0905^*$	.0295	c_1	.5512	.2303	c_2	.3355	.5630
Elder abuse				b_1	2.0622^{***}	.0000	b_2	-1.1208^*	.0115
Experiencing frequent quarrels between parents	a	$.1877^{***}$	.0001	c_1	.7065	.1753	c_2	-1.4411^*	.0283
Elder abuse				b_1	2.0305^{***}	.0000	b_2	$-.9790^*$	.0278
Having experienced starvation	a	$.0496^+$	.0672	c_1	.1460	.6252	c_2	-1.0863^{**}	.0039
Elder abuse				b_1	2.0813^{***}	.0000	b_2	-1.0290^*	.0198
Suffering frequent physical punishment from parents	a	$.1471^{**}$	.0016	c_1	.6424	.2136	c_2	$-.1446$	.8246
Elder abuse				b_1	2.0474^{***}	.0000	b_2	-1.0932^*	.0140
Dropping out from school in childhood	a	$.0533^+$	.0812	c_1	$.7790^*$	.0208	c_2	$-.5447$	.2006
Elder abuse				b_1	2.0464^{***}	.0000	b_2	-1.0717^*	.0155
Number of ACEs	a	$.0253^{***}$	.0001	c_1	$.1687^*$	.0193	c_2	$-.0926$	.3094
Elder abuse				b_1	1.9892^{***}	.0000	b_2	-1.0470^*	.0188
Childhood victimization	a	$.1402^{***}$	.0000	c_1	$.5697^+$	.0911	c_2	$-.6651$	.1181
Elder abuse				b_1	2.0034^{***}	.0000	b_2	-1.0004^*	.0252
Family's economic difficulties	a	$.0297^*$	.0211	c_1	.1698	.2336	c_2	$-.1952$	.2781
Elder abuse				b_1	2.0607^{***}	.0000	b_2	-1.0679^*	.0161
Family member's illness episodes	a	$.0314^*$	.0389	c_1	$.2995^+$	.0741	c_2	.2472	.2430
Elder abuse				b_1	2.0502^{***}	.0000	b_2	-1.1370^*	.0103

Note. Notations (a, b_1, b_2, c_1, and c_2) can be found in Figure 1 & 2. a. Coefficient of ACE-related variables on elder abuse; b_1. Coefficient of elder abuse on depression; b_2. Coefficient of elder abuse on life satisfaction; c_1. Coefficient of ACE-related variables on depression; c_2. Coefficient of ACE-related variables on life satisfaction. All analyses were conducted with a control of background variables: age, gender, pension recipient or not, marital status, number of children, educational level, and self-rated health. $^+ p < 0.1$, $^* p < 0.05$, $^{**} p < 0.01$, $^{***} p < 0.001$.

Table 3 *Mediation effects of ACE-related variables on Subjective Well-being through Elder Abuse*

		Depression			Life satisfaction		
		Effect	BootLLCI	BootULCI	Effect	BootLLCI	BootULCI
Individual types of ACEs							
Perceived socio-economic difficulty of the original family	Direct	.5029	-.0496	1.0553	Direct	.1555	-.5428	.8537
	Indirect	.0974	.0012	.2472	Indirect	-.0528	-.1831	.0031
Serious or chronic disease	Direct	.5512	-.3499	1.4523	Direct	.3355	-.8025	1.4734
	Indirect	.1866	-.0169	.5085	Indirect	-.1014	-.4070	.0048
Experiencing frequent quarrels between parents	Direct	.7065	-.3156	1.7285	Direct	-1.4411	-2.7290	-.1531
	Indirect	.3812	.1200	.8969	Indirect	-.1838	-.6435	.0089
Having experienced starvation	Direct	.1460	-.4404	.7325	Direct	-1.0863	-1.8234	-.3491
	Indirect	.1031	.0141	.2129	Indirect	-.0510	-.1626	.0016
Suffering frequent physical punishment from parents	Direct	.6424	-.3706	1.6554	Direct	-.1446	-1.4241	1.1349
	Indirect	.3013	.0567	.7454	Indirect	-.1608	-.5287	.0006
Dropping out from school in childhood	Direct	.7790	.1189	1.4391	Direct	-.5447	-1.3794	.2900
	Indirect	.1090	-.0076	.3226	Indirect	-.0571	-.2214	.0031
Number of ACEs	Direct	.1687	.0275	.3099	Direct	-.0926	-.2712	.0861
	Indirect	.0504	.0205	.0927	Indirect	-.0265	-.0706	.0013
Category of ACEs							
Childhood victimization	Direct	.5697	-.0913	1.2307	Direct	-.6651	-1.4995	.1694
	Indirect	.2808	.0929	.6129	Indirect	-.1402	-.4684	.0049
Family's economic difficulties	Direct	.1698	-.1098	.4495	Direct	-.1952	-.5482	.1578
	Indirect	.0613	.0210	.1174	Indirect	-.0318	-.0857	-.0004
Family member's illness episodes	Direct	.2995	-.0292	.6282	Direct	.2472	-.1681	.6624
	Indirect	.0643	.0024	.1800	Indirect	-.0356	-.1387	.0008

Note. LLCI = lower limit of 95% confidence interval; ULCI = upper limit of 95% confidence interval; 95% confidence interval is based on bootstraps with 1000 resamples.

Figure 1

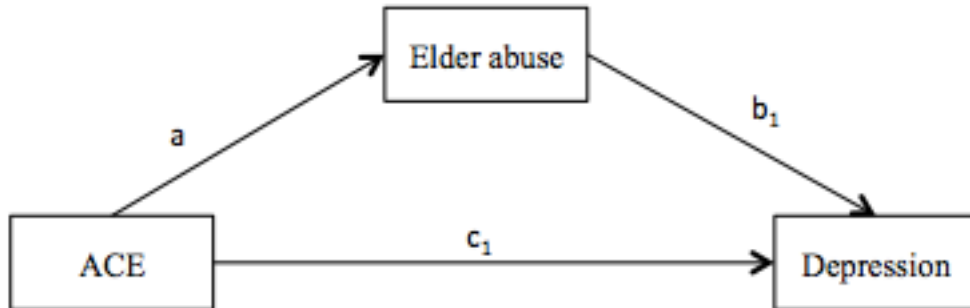*The Mediation Model of Elder Abuse in the Relation between ACE and Depression*

Figure 2

The Mediation Model of Elder Abuse in the Relation between ACE and Life Satisfaction