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Influence of social participation and support on self-rated health among Chinese older adults: Mediating role of coping strategies

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Abstract

This study examines the mediating effect of coping strategies in the association between social participation, social support and self-rated health among older adults. A sample of 9233 Chinese older adults (Mean Age = 69.61 years, SD = 7.27) is obtained from the China Longitudinal Aging Social Survey in 2016 through a stratified multi-stage probability sampling. Stata 15/SE is used for data analysis. Results show that among older adults, coping strategies partially mediate the association between social participation and self-rated health, and fully mediate the relationship between social support and self-rated health. Findings contribute to existing knowledge and provide practical implications for social policy and intervention programs to enhance self-rated health of older adults in a Chinese social context.

Keywords Social participation · Social support · Coping strategies · Self-rated health

Introduction

With the rapid increase in the number of elderly population, aging has become a significant social issue in China (Jiang, 2021). Previous social policies mainly focus on physical issues of aging and health-related services, while less attention is paid to social participation and support among older adults (Bowling & Gabriel, 2004; Haslam et al., 2018; Tian et al., 2021). As they age, older adults become fragile in physical and cognitive functioning, and thus maintaining positive social function, such as receiving adequate social support and participating in various social activities, becomes especially important (Jiang, 2021). Over the past decade, interests in how social determinants affect self-rated health has grown in geriatric studies (Fiorillo et al., 2020; Moore, 2019). Self-rated health is one of the representative measures of elderly health status and can be used to evaluate their physical and psychological health, and predict mortality (Liu et al., 2020; Tian et al., 2021). Therefore, the present study explores the mechanisms by which social support and participation affect older adults' self-rated health, and the mediating role of coping strategies in these relationships.

Social Support, Social Participation, and Self-Rated Health

Social support can be described as the assistance and resources provided by social network and interpersonal relations (Giang et al., 2020; Hata et al., 2016), including not only tangible supports, such as financial resources, but also emotional support, such as comfort and understanding (Gaveras et al., 2014). Theoretically, the main effect model suggests that a high level of social support from networks promotes the sense of one's wellness (Chang et al., 2018; Cohen & Wills, 1985; Reife et al., 2020). Specifically, social support provides a safe and protective environment for older adults, not only by enabling them to freely express negative emotions and vulnerabilities, but also by bringing emotional or physical comfort through compassion, understanding, and acceptance (Feeney & Collins, 2015). Social support helps individuals to satisfy their physical and psychological needs, and further contributes to a positive perception of health status (Bryła et al., 2013; Dai et al., 2016). Although the theoretical model is well illustrated, the empirical research remains controversial. Several studies indicate that social support is positively

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associated with one's health status (Angner et al., 2013; Bartolini et al., 2013; Holt-Lunstad et al., 2010; Nieminen et al., 2013). For instance, a study of 2538 older adults in Vietnam demonstrate that receiving more social support is related to a higher level of self-rated health (Giang et al., 2020). By contrast, other research shows that social support is not significantly associated with health outcomes (Rhee et al., 2021; Yang & Jiang, 2020). For example, Rhee et al. (2021) suggested that perceived quality of social support does not predict health-related quality of life. The above controversial findings may be attributed to differences in the measurement of social support. Given these controversial results, the relationship between social support and self-rated health among older people needs further investigation.

Social participation refers to individuals' involvement in societal activities and engagement in relevant roles (Provencher et al., 2016). Theoretical debates persist regarding the relationship between social participation and older adults' health status, with one side emphasizing less social involvement while the other indicating greater participation in social activities (Li et al., 2018). In contrast to disengagement theory, activity theory suggests that participating in social activities and maintaining connections are essential to health in old age (Li et al., 2018; Shaw et al., 1998). On the one hand, participation in social activities forms a supportive environment that counteracts the negative effects of social isolation and helps the elderly reintegrate into society (Choi et al., 2016; Lee et al., 2008; Tian et al., 2021). On the other hand, involvement in social activities promotes older people's self-efficacy, self-esteem, and sense of belonging, leading to better self-perceptions of health status (Fiorillo et al., 2017; Li et al., 2018). Inconsistent findings are also observed on the association between social participation and self-rated health. Participating in valued social activities is suggested to enhance cognitive function and physical and psychological health (Santini et al., 2020; Umberson & Montez, 2010). For example, Tian et al. (2021) found that Chinese older adults who participate in social activities reported high levels of self-rated health. Conversely, non-significant correlations between social participation and self-rated health are also observed (Goryakin et al., 2014; Meng & Chen, 2014). However, the above studies are based on adults but not on the elderly group. Therefore, further exploring the association between social participation and self-rated health of older adults is also necessary.

In summary, the debate continues on whether social support or participation predicts self-rated health of older adults. To our knowledge, rare empirical study simultaneously discusses the distinct effect of social support and participation on self-rated health, especially in the context of rapid changes of the social structure in China.

Mediating Role of Coping Strategies

Coping strategies are defined as an approach adopted by an individual under pressure, and has become a crucial concept in the aging process (Fiksenbaum et al., 2006; Na & Singh, 2021). From the perspective of "thriving through relationships" theory, being socially integrated provides sources of strength for coping with adverse events (Feeney & Collins, 2015; Huang et al., 2020). Access to social support or participation in societal activities offer channels of interaction and comfort, which contribute to developing personal abilities and strengths to cope with adverse circumstances (Huang et al., 2020; Zhang et al., 2020). In other words, older adults with high social support and participation tend to believe that they have available resources and are highly likely to use active coping strategies, such as learning from others, changing thinking, and talking with others (Chao, 2017; Chen et al., 2019; Choi et al., 2016). For example, in the Chinese social context, Chen et al. (2019) demonstrated that social support from friends helps promote positive coping styles among 1646 elderly aged 75 years and over. Furthermore, the positive relationship between social support and proactive coping is validated (Fiksenbaum et al., 2006). Accordingly, the assumption that social integration, such as social support and participation, might have positive influence on the choice of coping strategies is therefore rational.

In addition, coping strategies might be considered as an essential predictor of health outcomes among the elderly (Chao, 2017; Perreault et al., 2017). Generally, exercising effective coping strategies increases individual psychological flexibility and adjustment ability (Huang et al., 2020; Zhu et al., 2020). Older adults who use effective coping strategies cultivate fighting spirit and communication skills, which allow them to increase their self-efficacy and suffer fewer emotional disturbances (Li et al., 2021; Zhu et al., 2020). Therefore, compared with their peers, individuals with better resources and efficient coping strategies are more likely to report positive outcomes, such as physical and psychological well-being (Chao, 2017; McKee-Ryan et al., 2005). For instance, based on a sample of American middle aged and elderly, Mauro et al. (2015) indicated that the rate of poor self-health perception of participants who exhibit substance-use coping is 2.4 times that of those who do not use this mechanism. Moreover, coping styles are confirmed as mediators between perceived social support and subjective well-being (Liu et al., 2016). According to the above literature review, the present study posits that coping strategies might play a mediating role between social support, social participation, and older adults' self-rated health.

Current Study

The above literature review reveals several research gaps. First, neither theoretical illustration nor empirical evidence is consistent regarding whether social support or participation predicts self-rated health among older adults. Second, to our knowledge, literature rarely considers coping strategies as an influencing path between social support, social participation, and self-rated health. Thus, exploring the mediating mechanisms underlying the direct associations is necessary. Third, empirical evidence on the above variables in the Chinese context that uses a national sample remains inadequate. Thus, the current study proposes an integrated model to simultaneously investigate the underlying mechanism by which social support and participation affect self-rated health through coping strategies (See Fig. 1). The following hypotheses are proposed:

Hypothesis 1a: High levels of social participation are associated with high levels of self-rated health among older adults.
Hypothesis 1b: High levels of social support are associated with high levels of self-rated health among older adults.
Hypothesis 2a: High levels of social participation are related to high levels of positive coping strategies, which in turn, promote the self-rated health of older adults.
Hypothesis 2b: High levels of social support are related to high levels of positive coping strategies, which in turn, promote the self-rated health of older adults.

Methods

Participants

Data are obtained from the China Longitudinal Aging Social Survey (CLASS) in 2016. CLASS is a national large-scale social survey carried out by the National Survey Research Center of Renmin University of China. Adopting a stratified multi-stage probability sampling method, CLASS recruited a nationally representative sample of older adults aged 60 years and above, covering 134 districts/counties, and 462 villages/residential committees in 28 provinces/municipalities/autonomous regions in mainland China. Exclusion of data with missing values yield 9233 valid respondents as research sample. Among the sample, males account for 51.79%, and females account for 48.21%. The average age is 69.61 (S.D. = 7.27). The older adults with chronic illness are 55.47%, whereas those who did not were 44.53%. The proportion with religious belief was 8.73%, while those without accounted for 91.27%. Table 1 presents the detailed descriptions of the socio-economic characteristics of the sample.

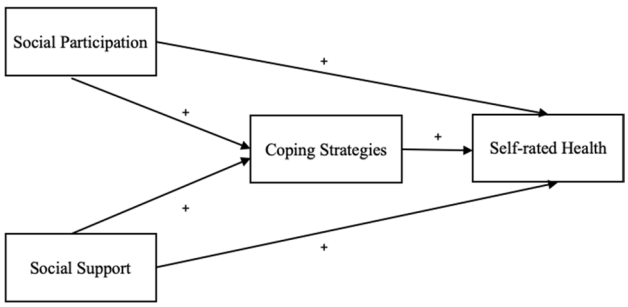

Fig. 1 Theoretical framework. Note: For simplicity of presentation, control variables are not shown

Measurement

Social Support This study adopts the Lubben Social Network Scale–6 (LSNS-6) to assess social support. LSNS-6 is extensively utilized to evaluate social support among older adults (Chi, 1995; Lubben et al., 2006). In this scale, one example item is "How many friends do you feel close to such that you could call on them for help?" The scale is scored using a 6-point Likert scale with range 0–5 from low to high. The overall score is between 0 and 30. High scores indicate high levels of social support. In this study, the Cronbach's Alpha is 0.87, which indicates good reliability.

Social Participation Participants of CLASS 2016 are questioned on whether they participated in the following activities in the three months prior to the survey: community security patrol, caring for other elderly (e.g., help shopping), environmental protection activities, mediation of disputes, chat accompany, offering volunteer services that require professional skills (e.g., free clinic), and caring for other people's children. Each item is coded as 0 = did not participate, 1 = participated. The scores of these seven items are summed

Table 1 Socio-demographic characteristics of participants (N = 9233)

		Frequency (N)	Percentage (%)
Gender	Male	4782	51.79
	Female	4451	48.21
Age	Range: 60–103	M = 69.61	SD = 7.27
Spouse	Have	6743	73.03
	Not have	2490	26.97
Religious belief	Have	806	8.73
	Not have	8427	91.27
Chronic illness	Yes	5122	55.47
	No	4111	44.53
Residence	Local	8921	96.62
	Non-local	312	3.38

to measure social participation, with a high score indicating a high level of social participation.

Coping Strategies The adapted version of the Simplified Coping Style Questionnaire (SCSQ) is utilized to evaluate coping strategies in CLASS 2016 (Xie, 1998). Six items are used to assess how older adults take coping strategies, including "learning from others", "changing thinking", "talking with others", "accepting the reality", "relying on others", and "trying to forget". A four-point Likert scale is adopted, from "1 = never adopted" to "4 = usually adopted" to measure the level of coping strategies. The last three negative-worded items are reverse coded to make a high score represent a high level of active coping. Generally, SCSQ is widely used and shows good reliability and validity (Chen et al., 2019; Xie, 1998). In this study, the total scores of this scale are summed, with high scores demonstrating high levels of active coping strategies. In this scale, Cronbach's Alpha is 0.75, which shows acceptable reliability.

Self-Rated Health This study uses self-rated health as the dependent variable, measured by a single item, "How do you perceive your current health status?". This question is assessed on a 5-point Likert scale from "1 = very unhealthy" to "5 = very healthy". Specifically, this item on self-rated health is proven reliable and extensively utilized among older people (Liu et al., 2020; Liu et al., 2021).

Socio-Demographic Characteristics In this study, the socio-demographic characteristics are measured in accordance with gender (1 = male, 0 = female), age, spouse (1 = yes, 0 = no), religious belief (1 = yes, 0 = no), chronic illness (1 = yes, 0 = no) and residence (1 = local, 0 = non-local). These variables are all controlled in the statistic model.

Data Analysis

The descriptive statistics, bivariate correlations, and mediating effect of coping strategies are validated by using Stata 15/SE. The significance of indirect effect through coping strategies is evaluated by bootstrapping methods using 95% confidence intervals. The effect is considered significant if the lower to upper bounds of the confidence intervals excludes zero (Preacher & Hayes, 2008).

Results

Descriptive Analyses

The means, standard deviations, and Pearson's correlations of social participation, social support, coping strategies, and self-rated health are assessed and presented in Table 2. Self-rated health is positively correlated with social support ($r = 0.02$, $p < 0.05$), social participation ($r = 0.07$, $p < 0.001$), and coping strategies ($r = 0.10$, $p < 0.001$).

Hypothesis Testing

Coping strategies are assumed to act as mediator not only in the relationship between social participation and self-rated health, but also between social support and self-rated health. The study hypotheses are examined by estimating the parameters of the path analysis. Table 3 shows the detailed results.

As expected, the direct effect of social participation ($b = 0.07$, $p < 0.001$) on self-rated health is significant. Moreover, social participation is positively related to coping strategies ($b = 0.29$, $p < 0.001$), which are also positively associated with self-rated health ($b = 0.03$, $p < 0.001$). The bootstrap test indicates that the indirect effect of social participation on self-rated health via coping strategies is also significant ($b = 0.009$, 95% CI = [0.005, 0.012]). Thus, the hypothesis on mediating effect of coping strategies between social participation is supported. Social participation improves positive coping strategies, which in turn increase self-rated health.

However, the direct effect of social support ($b = 0.001$, $p = 0.55$) on self-rated health is not significant. Social support is positively related to coping strategies ($b = 0.07$, $p < 0.001$), which is positively associated with self-rated health ($b = 0.03$, $p < 0.001$). The bootstrap test indicates that the indirect effect of social support on self-rated health via coping strategies is also significant ($b = 0.002$, 95%CI = [0.001, 0.003]). The results are not in line with the hypotheses. For a clear presentation of the properties of causal paths, Fig. 2 shows the path coefficients and Table 4 shows the direct and indirect effects.

Discussion

Although the social determinants of self-rated health among the elderly have obtained considerable attention in recent years, few studies simultaneously concentrate on the impacts of social participation and support on self-rated health and the mediating role of coping strategies in an integrated model. By using a national representative sample of Chinese older adults of CLASS 2016, the current results show that coping strategies partially mediate the influence of social participation on self-rated health, and fully mediate the effect of social support on self-rated health. The findings are further discussed as follows.

Consistent with previous literature, current results demonstrate that high levels of social participation are related

Table 2 Descriptive statistics and bivariate correlations of key variables (N = 9, 233)

	M	SD	1	2	3	4
1. Social support	14.34	5.45	1			
2. Social participation	0.16	0.52	−0.05***	1		
3. Coping strategies	16.12	2.24	0.16***	0.07***	1	
4. Self-rated health	3.39	0.92	0.02*	0.07***	0.10***	1

*$p < 0.05$; **$p < 0.01$; ***$p < 0.001$

Table 3 Results of the mediation model (N = 9, 233)

	Model 1 (Coping strategies)			Model 2 (Self-rated health)		
	b	z	p	b	z	p
Gender	0.02	0.45	0.65	0.04	2.04	0.04
Age	−0.01	−3.63	<0.001	−0.01	−6.01	<0.001
Marital status	0.09	1.70	0.09	0.09	4.18	<0.001
Religious belief	−0.09	−1.13	0.26	0.02	0.48	0.63
Chronic illness	−0.18	−3.87	<0.001	−0.60	−33.02	<0.001
Residence	0.02	0.16	0.87	−0.09	−1.77	0.08
Social participation	0.29	6.60	<0.001	0.07	3.81	<0.001
Social support	0.07	15.73	<0.001	0.001	0.60	0.55
Coping strategies				0.03	7.43	<0.001

to high levels of positive coping strategies, which in turn enhance older adults' self-rated health (Mauro et al., 2015; Tian et al., 2021). Specifically, participating in valued social activities improves the sense of fulfillment and meaning of life among older people (Sano & Kyougoku, 2016; Tomioka et al., 2017). This may be the reason that social participation can improve self-health perception. Meanwhile, coping strategies might also influence the association between social participation and the self-rated health of the elderly by affecting their behavioral pathways and evaluation (Liu et al., 2016; Tomioka et al., 2017). That is, social participation not only develops older people's active coping strategies by strengthening their abilities to solve problems, but also contributes to their self-rated health by facilitating their health-related behaviors (Chao, 2017; Emilsson et al., 2012; Fiorillo et al., 2020). This finding supports activity theory rather than disengagement theory in the Chinese social context and calls attention to the importance of social participation among older people.

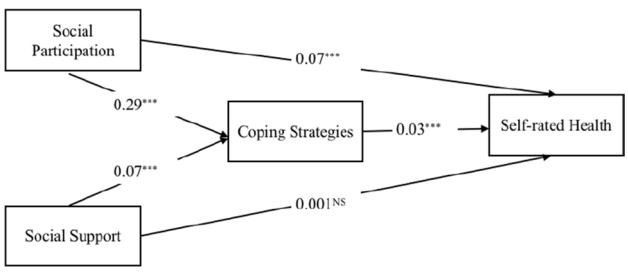

Fig. 2 Analysis of theoretical model. Notes: For simplicity of presentation, control variables are not shown. NS = not significant; *$p < 0.05$; ** $p < 0.01$; ***$p < 0.001$

Moreover, coping strategies fully mediate the effect of social support on self-rated health. This result might be interpreted from the perspective of "thriving through relationships" theory. Social support from family and friends can be considered as sources of strength that provide resources and care for older adults, which helps them develop optimism and use positive strategies in difficult situations (Huang et al., 2020; Zhang et al., 2020). Moreover, older people who use active coping strategies tend to be willing to learn from and communicate with others, and have a better sense of self-efficacy, and therefore are more likely to report better health status (Chao, 2017; Li et al., 2021). However, notably, this finding is not fully consistent with several preceding studies that stated coping styles partially mediated the relationship between perceived social support and life satisfaction/positive affect (Liu et al., 2016). The possible reasons might be the differences of the sample and variables. For example, Liu et al. (2016) only consisted 772 university students while the present study uses a national representative sample of older adults. In addition, the dependent variables in the previous study relate to mental health, such as life satisfaction and positive affect, whereas our dependent variable is the subjective perception of health status.

The present study also addresses the question on whether social participation or support is more essential for older adults' self-rated health. The empirical results prove that the overall effect of social participation has a stronger

Table 4 Direct and indirect effects with 95% confidence intervals (CI)

	B	95%CI	
		Lower	Upper
Direct effect			
Social Support → Self-rated health	0.001	−0.002	0.004
Social Participation → Self-rated health	0.066	0.032	0.100
Indirect effect			
Social Support → Coping strategies → Self-rated health	0.002	0.001	0.003
Social Participation → Coping strategies → Self-rated health	0.009	0.005	0.012

interpretation of the self-rated health in older adults as compared with that of social support. In the Chinese social context, the dramatic social changes limit the channels of connection between older adults and society; in addition, family function and size gradually decline, and thus the elderly might no longer obtain adequate and sustained social support and are more likely to be socially isolated (Hou et al., 2021; Hsieh & Zhang, 2021). That is, social participation is increasingly becoming an important approach for older adults to connect with society (Li et al., 2018). Therefore, the impact of active participation in social activities on self-rated health is stronger than the acceptance of social support.

This study presents theoretical contributions that are not contained in previous literature. First, the results respond to theoretical and empirical debates on whether social participation and support predict self-rated health in the Chinese social context. In terms of social participation, this study validates the applicability of activity theory rather than disengagement theory. Participating in social activities, such as providing volunteer services, helps older adults better integrate into society and increase their sense of meaningfulness in life and self-efficacy (Sano & Kyougoku, 2016; Tomioka et al., 2017). In addition, this study also supports the main effect model of social support. This study responds to the previous inconsistent empirical results by using a national representative of Chinese older adults. Additionally, in the new established model, the present study concurrently investigates the relationship between social participation, social support, coping strategies, and self-rated health. The discovery of coping strategies as a mediating mechanism reveals that social participation and support influence individuals' perceptions of health status by affecting their coping pathways in adversity, thereby adding to existing knowledge on this field.

Implications and Limitations

In addition to the theoretical contributions, this study provides several essential practical suggestions for social policy and interventions. First, the findings emphasize the significance of elderly's social participation. Current public policies primarily concentrate on the objective environment of aging, and this study can be a step forward to call on the government to dedicate efforts on facilitating engagement in social activities to benefit older adults' self-health perception. Next, geriatric social workers and psychiatrists are encouraged to design intervention programs that include, but are not limited to, involving older people in community activities. Furthermore, the mediating role of coping strategies cannot be ignored and several interventions aimed at cultivating effective coping strategies must be implemented. The instrumental reminiscence intervention is validated as effective in enhancing coping strategies among older adults in Dominica (Satorres et al., 2018), and may also be considered for implementation in China.

Several caveats are noted in this study. First, the cross-sectional design prevents the understanding of causal associations between social participation, social support, coping strategies, and self-rated health. As a result, longitudinal research may be conducted to determine the causal links between these key variables. In addition, the current measurement of social support mainly consists of those from family and friends. Future studies can include other resources or types of social support, such as those from the community.

Conclusion

In conclusion, this is the first study to investigate the complicated associations among social participation, social support, coping strategies, and self-rated health in the context of rapid changes in the social structure of China. Specifically, coping strategies partially mediate the association between social participation and self-rated health and fully mediate the relationship between social support and self-rated health. By using a national representative sample of Chinese older adults, this study provides solid empirical evidence in response to previous theoretical debates. Moreover, this study provides essential practical implications for social policy and interventions, especially for older adults in China.

Declarations

Ethical Statement All the procedures involving human participants are performed in accordance with the ethical standards of the institutional and/or national research committee, the 1964 Declaration of Helsinki and its later amendments, or comparable ethical standards. The China Longitudinal Aging Social Survey (CLASS) is approved by the Institutional Review Board at the Renmin University of China.

Informed Consent Informed consent is obtained from study participants.

Conflict of Interest The authors declare no conflicts of interest for this study.

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