

The Impact of Post-Retirement Social Relationship Changes on Depressive Symptoms in Chinese Older Adults: The Mediating Role of Loneliness and Moderating Role of Social Networks

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Purpose: Depressive symptoms are an important issue among older adults that can affect their mental health and quality of life. This study examined the impact of post-retirement social relationship changes on depressive symptoms, and the mediating role of loneliness and the moderating role of social networks among Chinese older adults.

Patients and Methods: The participants were 1260 retired older adults from the 2018 China Longitudinal Aging Social Survey. The study conducted mediation and moderation analyses with an ordinary least squares (OLS) regression model and employed the Karlson, Holm, and Breen (KHB) method to further analyze the mediating role of loneliness.

Results: Post-retirement social relationship changes exhibited significant a positive association with depressive symptoms and loneliness, while social networks demonstrated a significant negative association with depressive symptoms. The older adults experiencing post-retirement social relationship substantial changes were more vulnerable to developing depressive symptoms. Furthermore, loneliness mediated the association between post-retirement social relationship changes and depressive symptoms, whereas social networks moderated this association.

Conclusion: The findings elucidate the association between post-retirement social relationship changes and depressive symptoms among Chinese older adults, highlighting the roles of loneliness and social networks. It underscores that taking a rational view of retirement-related changes and maintaining and expanding social networks may reduce the effects of post-retirement social relationship changes on depressive symptoms.

Keywords: post-retirement social relationship changes, depressive symptoms, loneliness, social networks, older adults

Introduction

Retirement is an important event in an individual's life, a turning point in which individuals end their previous working lives, resulting in changes in many areas including social relationships. These changes brought about by retirement can affect an individual's mental health and are a concern in an aging society. Despite growing academic interest in the impact of retirement on individual mental health, there is still controversy about whether retirement is beneficial to mental health.¹ Although many studies have shown that retirement is beneficial to mental health,^{2–5} some studies have found that it is detrimental,^{6–10} while others have found it has no effect.^{11–14} In addition, relatively few studies have examined how retirement affects an individual's mental health, and the specific mechanisms are not yet clear. In the context of China's implementation of a national active aging strategy and gradual increase in the retirement age, it is of practical significance to identify the effects of post-retirement social relationship changes on depressive symptoms in older adults and their specific mechanisms.

According to Social Role Theory, retirement causes significant changes in an individual's family role, social status, and social relationships,^{15–17} making individuals vulnerable to depressive symptoms.^{7–10} As a result, retirement can be a stressful event for many individuals.^{18,19} For example, retirement can cause individuals to have less contact with coworkers, become distant, and even lose work-related social relationships. These changes can be detrimental to their mental health and make them susceptible to depression symptoms.^{20–24} In addition, individuals in retirement typically devote more time to other areas, such as family, because they are no longer working. This means that lifestyles and relationships with family members will change more significantly. If individuals are unable to adapt to the changes in social relationships brought about by retirement, this may lead to negative health outcomes such as depressive symptoms.²⁵ It has been found that family relationships and their changes can lead to psychological problems such as depressive symptoms in older adults.^{26,27}

In addition to depressive symptoms, various changes brought about by retirement may also lead to individuals losing their sense of self-worth, reducing self-esteem, and feeling lonely.²⁸ Some studies have shown that the various changes brought about by retirement, such as reduced contact with colleagues and social activities, tend to create a sense of emptiness and loneliness in older people.^{19,23,29} Loneliness has been identified as an important predictor of mental health outcomes, including depressive symptoms,³⁰ especially in older adults.^{31–35} Based on these studies, the present study hypothesized that post-retirement social relationship changes may indirectly affect depressive symptoms by influencing loneliness in older adults.

Although retirement may result in fewer connections with coworkers and an increased prevalence of loneliness and depressive symptoms, individuals have more leisure time to make new social connections, maintain existing social networks, enhance social interactions with family members and peers, and increase their social capital, which can improve psychological well-being.^{9,36–38} According to dialectical psychology's Selective Optimization with Compensation Theory (SOC), although individuals lose much more than they gain in old age, they can also gain an active old age through strategies such as making new social connections and participating in more social activities.³⁹ Existing research, on the other hand, suggests that social engagement and interaction can provide positive experiences that are beneficial to mental health.^{6–8,40} There is a negative relationship between social networks (eg, family and friend networks) and depressive symptoms, with stronger social networks reducing the occurrence of depressive symptoms.^{41–44} Therefore, the present study hypothesized that social networks may moderate the impact of post-retirement social relationship changes on depressive symptoms in older adults after retirement.

In summary, previous studies have preliminarily established the associations between post-retirement social relationship changes, loneliness, and depressive symptoms. However, existing research primarily focuses on the relationship between retirement and depressive symptoms, treating post-retirement social relationship changes as a reason or explanatory pathway.^{20,25,45} Few scholars have specifically focused on the relationship between post-retirement social relationship changes and depressive symptoms, and even fewer have explored their specific mechanisms. To address these gaps, based on Social Role Theory and Selective Optimization with Compensation Theory, this study constructed a moderated mediation model (see Figure 1) to test the following hypotheses.

Hypothesis 1: Post-retirement social relationship changes contribute to the occurrence of depression symptoms in older adults.

Hypothesis 2: Loneliness mediates the impact of post-retirement social relationship changes on depression symptoms in older adults.

Hypothesis 3: Social networks moderates the impact of post-retirement social relationship changes on depression symptoms in older adults.

Materials and Methods

Participants

The study utilized data from the China Longitudinal Aging Social Survey (CLASS), a nationally representative longitudinal survey conducted by the National Survey Research Center (NSRC) at Renmin University of China. The survey

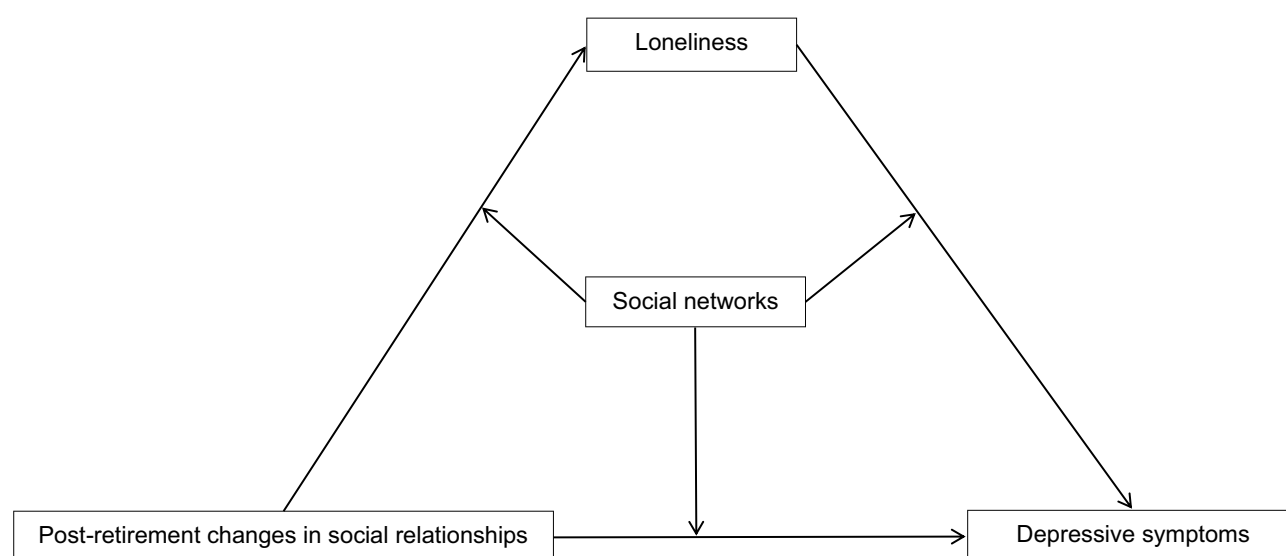


Figure 1 Moderated Mediation model among post-retirement social relationship changes, loneliness, social networks, and depressive symptoms.

adopts stratified multistage probability sampling to ensure demographic and geographic representativeness, and systematically collects multidimensional data on Chinese citizens aged 60 and above, encompassing seven key domains: socioeconomic status, health services, psychological states, intergenerational relationships, retirement situation, daily activities, and social participation. The project established its baseline in 2014, and follow-up surveys in 2016, 2018, and 2020. This study utilized CLASS 2018 data, which is the latest publicly available national survey data that systematically captures information on post-retirement social relationship changes among the older adults in China. After excluding samples with missing values for key variables such as depression symptoms, loneliness, and post-retirement social relationship changes, as well as other control variables, the final sample consisted of 1260 participants. For detailed information on the data selection process, please refer to [Figure 2](#).

Ethical Statement

The CLASS data are a publicly accessible database for which informed consent has been obtained from all participants, with personally identifiable or sensitive information anonymized. According to the “Ethical Review Measures for Life Science and Medical Research Involving Human Subjects” issued by China in 2023, the study can exempt from further ethical review. This study was conducted in strict accordance with the ‘Declaration of Helsinki’.

Measures

Depressive Symptoms

The 9-item abbreviated version of the CES-D scale revised by Santor and Coyne in 1997 was used in this study to assess depressive symptoms in older adults.⁴⁶ The CLASS2018 survey asked respondents nine questions, including “Have you had a bad night’s sleep in the past week?” and “Have you had a positive mood in the past week?” The response options for each question were coded as 1 = no, 2 = sometimes, 3 = often. Scores were summed, with higher total scores indicating higher levels of depressive symptoms. In this study, the internal consistency of the 9-item CES-D scale was acceptable (Cronbach’s $\alpha = 0.68$). According to Hatcher and Stepanski (1994), social science research generally requires an Cronbach’s α of at least 0.55.⁴⁷ Other studies have also shown that Cronbach’s $\alpha > 0.6$ indicates better internal consistency.^{48–52}

Post-Retirement Social Relationship Changes

Post-retirement social relationship changes was measured by self-report. The CLASS2018 survey asked respondents to rate “The extent to which relationship with family members have changed after retirement compared to before retirement”, “The extent to which relationship with coworkers have changed after retirement compared to before retirement”, and “The extent to which

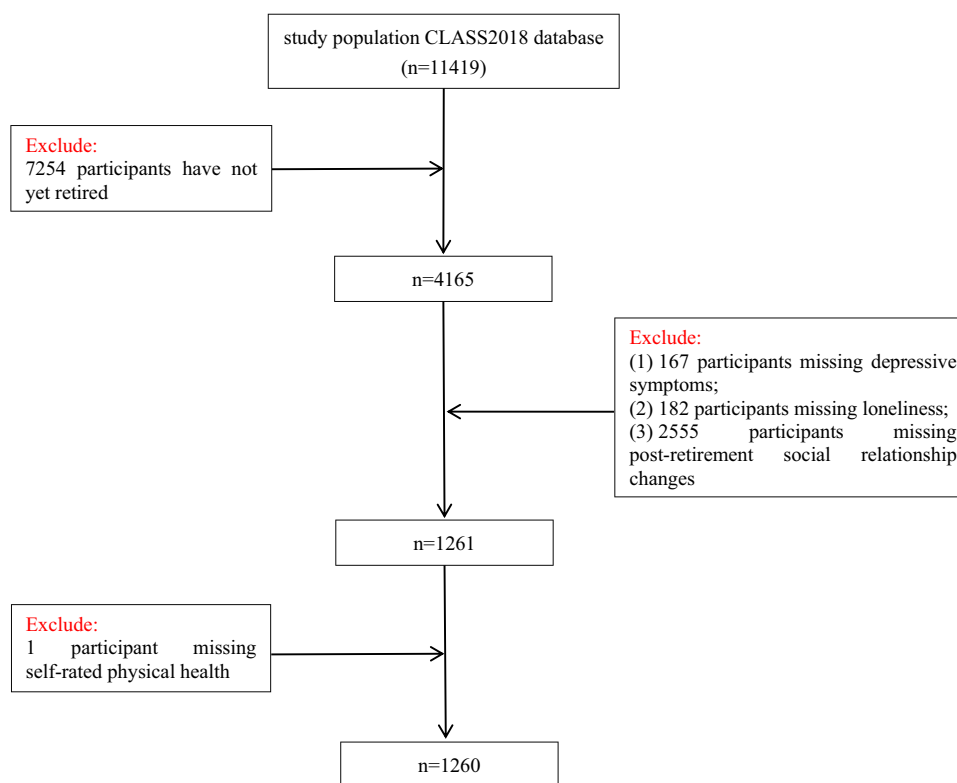


Figure 2 CLASS 2018 Data Selection Flowchart.

relationships with friends and neighbors have changed after retirement compared to before retirement” on a scale from 1 (no change) to 4 (a very great change). In the present study, the three questions were recoded: scores of 1 and 2 were recoded as 0, and scores of 3 and 4 were recoded as 1. If the changes in personal relationships with family, colleagues, and friends after retirement were all zero, it indicated that there had been no significant change in social relationships after retirement (assigned a value of 0), otherwise it indicated that there had been a significant change in social relationships after retirement (assigned a value of 1).

Loneliness

Loneliness was measured using the 3-item Loneliness Scale developed by Hughes and coworkers in 2004,⁵³ which is an abbreviated version of the 20-item revised UCLA Loneliness Scale.⁵⁴ The scale has been validated for reliability and validity in Chinese populations.^{33,55} The CLASS2018 survey asked respondents how neglected, isolated, and unaccompanied they had felt in the past week. Response options ranged from 1 (not at all) to 3 (often). The scores were summed, with higher total scores indicating greater loneliness. In this study, the loneliness scale had good internal consistency (Cronbach’s $\alpha = 0.71$).

Social Networks

In this study, social network was measured by the number of family members, relatives, and friends that older adults saw or contacted at least once a month. Respondents were asked “How many family members/relatives do you see or contact at least once a month?” and “How many friends do you see or contact at least once a month?” The response options for these two questions were coded as 0 = none, 1 = one, 2 = two, 3 = three or four, 4 = five to eight, and 5 = nine or more. The scores were summed, with higher scores indicating larger social networks.

Covariates

The following demographic variables were controlled for: age (continuous variable), gender (dummy variable, 1 = men, 0 = women), *hukou* status (1 = agricultural, 0 = non-agricultural), education level (1 = primary school and below, 2 = junior high school, 3 = high school, and 4 = college and above), and self-rated physical health (1 = poor, 2 = fair, and 3 = good).

Data Analysis

Stata 17.0 was used for the data analysis. First, descriptive statistics and correlation analysis were performed to test the relationships between the variables. Second, ordinary least squares (OLS) regression was used to analyze the effects of post-retirement social relationship changes on older adults' depressive symptoms, using loneliness as a mediator and social network as a moderating variable. To further analyze the mediating role of loneliness, the method proposed by Karlson, Holm, and Breen (KHB) was used as it has a broader scope than traditional mediation analysis methods.^{56,57} This method is applicable to a wide range of statistical models, including Ordinary Least Squares (OLS), logistic regression (logit), and multinomial logit (mlogit). It effectively accommodates analyses involving discrete independent variables and mediating variables. It can simultaneously process multiple independent variables or multiple mediating variables, distinguishing their individual contributions and directional effects. Notably, it circumvents scale identification challenges and facilitates comparisons of average local effects. Furthermore, it supports non-normally distributed data and demonstrates superior bias control compared to conventional methodologies such as Baron-Kenny, Sobel, and Bootstrap.⁵⁸

Results

Descriptive Statistics

Among 1260 participants, there were 660 males (52.38%) and 600 females (47.62%). The mean age of all participants was 71.18 years. In terms of household registration (*hukou*), 119 (9.44%) had agricultural and 1141 (90.56%) had non-agricultural status. In terms of educational level, 509 (40.40%) had only a primary school education or less, 437 (34.68%) had a middle school education, 218 (17.30%) had a high school education, and 96 (7.62%) had a university education or more. In terms of self-rated physical health, 168 (13.33%) were in poor physical health, 386 (30.63%) were in fair physical health, and 706 (56.03%) were in good physical health. The descriptive statistics of the research sample are displayed in Table 1.

Table 2 shows the means and standard deviations of the key variables and the correlations between them. The results showed that post-retirement social relationship changes and loneliness were all significantly and positively associated with depressive symptoms, post-retirement social relationship changes was significantly positively correlated with loneliness, and social networks were significantly negatively associated with depressive symptoms.

Regression Analysis

The results in Table 3 show that after controlling for covariates, post-retirement social relationship changes had significant effects on depressive symptoms (Model 1, $\beta=0.902$, $p<0.001$, 95% CI: 0.566–1.239) and loneliness (Model 2, $\beta=0.213$, $p<0.001$, 95% CI: 0.039–0.387). Therefore, older adults who experienced changes in their social relationships after retirement were more likely to develop depressive symptoms and loneliness. Model 3 showed that loneliness mediated the relationship between post-retirement social relationship changes and depressive symptoms ($\beta=0.500$, $p<0.001$, 95% CI: 0.393–0.607). Importantly, the relationship remained statistically significant after including the mediator variable in the

Table 1 Descriptive Characteristics of the Sample (N=1260)

	M	SD	Min	Max
Age	71.182	7.835	60	100
Gender	0.524	0.500	0	1
<i>Hukou</i> status	0.094	0.293	0	1
Education level	1.921	0.936	1	4
Self-rated physical health	2.427	0.715	1	3

Abbreviations: M, means; SD, standard deviations.

Table 2 Means, Standard Deviations, and Correlations Between the Key Variables (N=1260)

	M	SD	1	2	3	4
1 post-retirement social relationship changes	0.52	0.50	1			
2 Social networks	71.18	7.83	3.580 ⁺	1		
3 Loneliness	0.09	0.29	8.580**	−0.064**	1	
4 Depressive symptoms	1.92	0.94	33.940***	−0.140**	24.83***	1

Notes: ⁺ $p<0.1$, ** $p<0.01$, *** $p<0.001$.
Abbreviations: M, means; SD, standard deviations.

Table 3 The Meditating Effect of Loneliness and Moderating Effect Social Networks on Depressive Symptoms

	Model 1	Model 2	Model 3	Model 4
	Depressive Symptoms	Loneliness	Depressive Symptoms	Depressive Symptoms
Post-retirement social relationship changes	0.902***	0.213*	0.796***	2.184***
	(0.177)	(0.089)	(0.172)	(0.470)
Social networks	−0.138***	−0.061**	−0.108**	−0.021
	(0.040)	(0.020)	(0.039)	(0.048)
Loneliness			0.500***	0.497***
			(0.055)	(0.054)
Post-retirement social relationship changes × Social networks				−0.265**
				(0.083)
Constant	14.250***	4.221***	12.139***	11.893***
	(0.893)	(0.448)	(0.895)	(0.895)
N	1260	1260	1260	1260
R ²	0.142	0.055	0.196	0.202

Notes: Standard errors in parentheses; * $p<0.05$, ** $p<0.01$, *** $p<0.001$; The term "Post-retirement social relationship changes × Social networks" represents the interaction term between post-retirement social relationship changes and social networks in a regression model. This term captures the interaction effects between the two variables, thereby examining how the influence of post-retirement social relationship changes is moderated by individuals' social network; All models were adjusted for age, gender, hukou status, education level and self-rated physical health.

model ($\beta=0.796$, $p<0.001$, 95% CI: 0.458–1.133), suggesting that loneliness partially mediated the effect between the two. The results of the KHB mediation analyses provide a clearer picture of the total effect and the direct and indirect effects that post-retirement social relationship changes had on depressive symptoms. The results in Table 4 indicate that changes in social relationships significantly affected depressive symptoms regardless of the inclusion of mediating variables, thus

Table 4 KHB Analysis Results

	β	95% CI
Total effect	0.902***	[0.566, 1.239]
Direct effect	0.796***	[0.459, 1.133]
Indirect effects	0.106*	[0.017, 0.196]

Notes: * $p<0.05$, *** $p<0.001$.

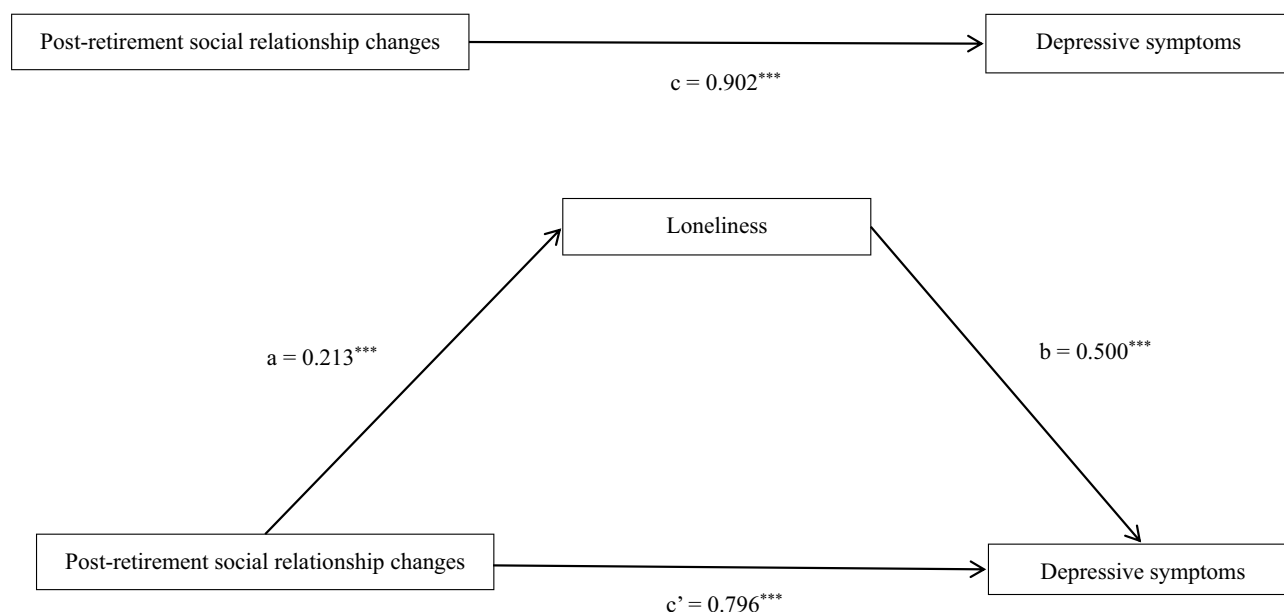


Figure 3 Schematic diagram of the mediating effect.

Notes: *** $p < 0.001$; c indicates the total effect, c' indicates direct effect, a indicates the effect of post-retirement social relationship changes on loneliness, b indicates the effect of loneliness on depression symptoms.

Hypothesis 1 was verified. Figure 3 presents a schematic diagram of the mediating effect with adjusting for all control variables. Path c in Figure 3 showed the total effect of post-retirement social relationship changes on depressive symptoms as 0.902, path a showed the effect of post-retirement social relationship changes on loneliness as 0.213, path b showed the effect of loneliness on depression symptoms as 0.500, and path C' showed the effect of post-retirement social relationship changes on depressive symptoms as 0.796 when loneliness as a mediator. With significant paths a and b , path C' remains significant, indicating that the mediation is partial. The results of model 3 and Table 4 both demonstrate that loneliness had a significant mediating effect on the association between post-retirement social relationship changes and depressive symptoms, accounting for 11.80%. This mediation pattern indicates that older adults experiencing post-retirement social relationship changes exhibited heightened susceptibility to loneliness, which increased depressive symptoms. These findings provide substantial support for Hypothesis 2.

Model 4 examined the moderating role of social networks in the relationship between post-retirement social relationship changes and depressive symptoms. The results showed a significant interaction between social networks and the effect of post-retirement social relationship changes on depressive symptoms ($\beta = -0.265$, $p < 0.001$, 95% CI: $-0.428 - -0.101$). For older adults with large social networks, the impact of post-retirement social relationship changes on depressive symptoms was significantly attenuated. As illustrated in Figure 4, for older adults whose social relationships changed significantly after retirement, the larger the social networks, the lower the depressive symptom score. These findings suggest that social networks act as a moderating factor, weakening the impact of post-retirement social relationship changes on depressive symptoms. Hypothesis 3 is therefore supported.

Discussion

Using national survey data, this study examined the relationship between post-retirement social relationship changes and depressive symptoms among Chinese older adults. The mediating role of loneliness and the moderating role of social networks were further examined. The results suggest that post-retirement social relationship changes have a significant positive effect on depressive symptoms in older adults, regardless of whether loneliness is considered, but that loneliness has a partial mediating role. As hypothesized, loneliness had a significant indirect effect on the relationship between post-retirement social relationship changes and depressive symptoms in older adults. In addition, social networks had a significant moderating effect on the relationship between post-retirement social relationship changes and depressive

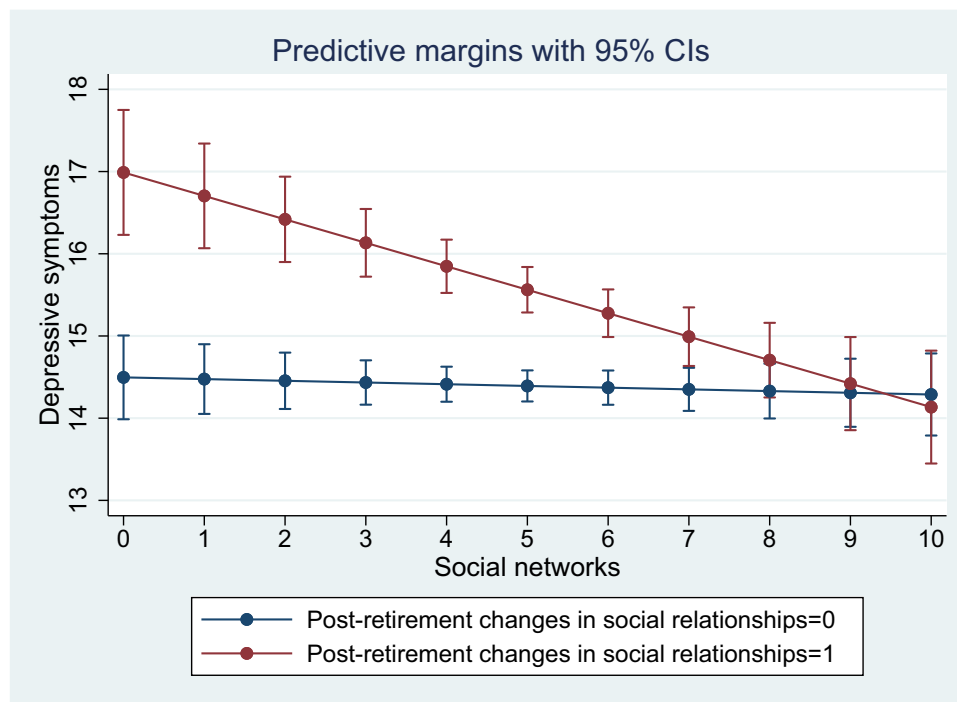


Figure 4 The interacting effect of post-retirement social relationship changes and social networks on depression symptoms.

symptoms. Future research should pay more attention to the role of loneliness and social networks in the relationship between post-retirement social relationship changes and depressive symptoms. When addressing depressive symptoms in retired older adults, the role of broader factors should be recognized, and the adverse effects of retirement-related changes can be mitigated by building and maintaining social networks.

Consistent with Hypothesis 1, there was a significant positive association between post-retirement social relationship changes and depressive symptoms in older adults ($\beta=0.796$, $p<0.001$). From a life cycle perspective, retirement is an important life event that may lead to major changes in the social relationships and pace of life that individuals have developed over an extended period of time.^{59–61} This change is seen by some scholars as negative, stressful, and associated with adjustment problems in retirement.^{62–64} Many studies have also shown the loss of one's work role in retirement can lead to a sense of role stripping and psychological discrepancy, resulting in a psychological crisis.^{62,65–67} This finding aligns with the core principles of Social Role Theory, which posits that post-retirement social relationship changes may precipitate psychological maladjustment. The dissolution of work-related social relationship and subsequent role ambiguity often leads to diminished self-identity and emotional distress. Conversely, maintaining continuity in midlife social relationship and lifestyle patterns demonstrates significant protective effects, contributing to sustained a good psychological health in older adults. Moreover, for middle-aged and older adults who are about to retire, preparing in advance to reduce the negative impact of retirement will help maintain good psychological health and a smooth transition to retirement.

The results of this study support Hypothesis 2, suggesting that loneliness mediates the effects of post-retirement social relationship changes on depressive symptoms ($\beta=0.500$, $p<0.001$). Specifically, post-retirement social relationship changes act indirectly on depressive symptoms by influencing loneliness. Role theory views retirement as a transition from a work role to a non-work role.⁶⁸ For individuals who have invested a great deal of time and energy in their work, who derive a sense of value and meaning in their lives from their work, and who view their work as an important symbol of their identity, the effects of retirement may be negative.^{69,70} Because retirement forces people to passively disengage from their connections to their work and their relationships with coworkers, they suddenly become idle. Coupled with the fact that their children may be too busy to spend time with them, such a situation can lead to loneliness and even self-doubt, which can lead to depressive symptoms. In contrast, retirement can have a positive impact if a person is able to maintain the lifestyle and social relationships they had prior to retirement, or if they see retirement as part of their life

plan. It is noteworthy that the mediating effect of loneliness accounted for 11.80%, suggesting potential contributions from additional mediators such as self-esteem, self-efficacy, life satisfaction, and attitudes toward aging. The transition to retirement typically involves loss of occupational roles and significant alterations in social relationships, which may induce feelings of worthlessness and reduce levels of self-esteem and self-efficacy among older adults. These psychological changes could subsequently manifest as depressive symptoms. Concurrently, retirement often leads to substantial income reduction, transforming individuals from economic contributors to financial dependents. This shift frequently results in diminished family and social status alongside noticeable alterations in social relationships. This can make older adults dissatisfied with life, potentially resulting in depression symptoms and other issues. Furthermore, the significant changes in social relationship after retirement may also make individuals feel that they have truly aged, becoming someone who needs to be cared for by others, and their attitudes toward aging may become increasingly negative. These factors could also contribute to the onset of depressive symptoms.

The study provided substantial support for Hypothesis 3 by demonstrating that social networks serve as significant moderators in the association between post-retirement social relationship changes and depressive symptoms among older adults ($\beta = -0.265$, $p < 0.001$). Specifically, social networks substantially attenuated the impact of post-retirement social relationship changes on depressive symptoms. This empirical evidence aligns with the fundamental principles of the Selective Optimization with Compensation Theory. The SOC framework posits that while older adults inevitably experience declines in social connections and role identities, they can engage in social participation and social activities by establishing new social networks, thereby compensating for social relationships, thus maintaining good mental health. This moderating role can be examined from several perspectives. First, individuals with large social networks, such as family and friends, have more social support and social capital,⁴³ and social capital is closely related to mental health.^{71–74} Therefore, when faced with the changes caused by retirement, these individuals are more capable of coping. If they believe that retirement will not cause significant changes in social relationships, the possibility of triggering depressive symptoms or other psychological problems is naturally smaller. Second, because of the influence of Confucianism, the family is especially important for Chinese people.⁷⁵ For many Chinese older adults, social networks based on family and kinship relationships are the core of their social networks and play a significant role in improving older adults' mental health.^{43,76} However, due to the shrinking size of families and the increasing number of empty nesters and older adults living alone, relying only on family relationships for social support is not sufficient to meet the needs of the elderly, and the status of friend networks is becoming increasingly important. One study found that friend networks had a greater influence than family networks among the factors that alleviated depressive symptoms in older adults.⁴³ Therefore, encouraging older adults to maintain and expand social networks, such as family and friends, may help improve their mental health.

Limitations and Contributions

This study has some limitations. First, the measurement of post-retirement social relationship changes was mainly based on the degree of change. To provide a more comprehensive picture, future research could examine the direction of change, such as whether social relationships improve or deteriorate after retirement. Second, the data relied on self-reports, which can be subjective. Future research could incorporate objective indicators and measures using multiple methods. Finally, although post-retirement social relationship changes are an important trigger for depressive symptoms in older adults, other changes caused by retirement, such as economic income, sources of livelihood, time allocation, mental state, and social participation, may also contribute to psychological distress. Future research should examine the effects of these changes on depressive symptoms in older adults from different perspectives. Additionally, future studies could explore the extent to which the older adults adapt to changes in social relationships and other aspects after retirement, all of which can expand the research on the impact of post-retirement changes on depressive symptoms.

Despite some limitations, this study makes important contributions. First, it examines the effects of post-retirement social relationship changes on depressive symptoms in older adults, rather than examining the effects of retirement as an event alone, which advances previous research. Second, the finding that social networks moderate the effects of post-retirement social relationship changes on older adults' depressive symptoms suggests that expanding social networks may be an important means of improving older adults' mental health. Therefore, there is a need to provide the necessary support to encourage older adults to leave their homes and expand their social networks, such as friends and neighbors, to help them better adjust to life after retirement. Finally, this study used national survey data and the KHB method to

examine the effects and specific pathways of post-retirement social relationship changes on depressive symptoms among Chinese older adults, which enriches existing research and enhances academic value.

Conclusion

Guided by Social Role Theory and the Selective Optimization with Compensation Theory, and based on national survey data, this study examined the association between post-retirement social relationship changes and depressive symptoms in older adults and explored the roles of loneliness and social networks in this context. The study showed that, first, post-retirement social relationship changes demonstrate a significant positive association with depressive symptoms ($\beta=0.796$, $p<0.001$), indicating that older adults experiencing post-retirement social relationship substantial changes are more vulnerable to developing depressive symptoms. Second, loneliness played a mediating role between post-retirement social relationship changes and depressive symptoms ($\beta=0.500$, $p<0.001$). Finally, social networks played a significant moderating role in the effect of post-retirement social relationship changes on depressive symptoms, mitigating the impact of post-retirement social relationship changes ($\beta=-0.265$, $p<0.001$). Governments, aging-related departments, and society should attach great importance to the association between post-retirement social relationship changes and the mental health in older adults. Implementing proactive mental preparation guidance and adaptation support can empower older adults to navigate post-retirement social relationship changes more effectively, thereby alleviating loneliness and preventing depressive symptom. Furthermore, organized community engagement initiatives and structured social participation opportunities should be established to help older adults maintain existing interpersonal connections while cultivating new social networks. This dual approach not only strengthens social support networks but also serves as a protective factor against mental health deterioration in later life.

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Author Contributions

All authors made substantial contributions to conception and design, acquisition of data, or analysis and interpretation of data; took part in drafting the article or revising it critically for important intellectual content; agreed to submit to the current journal; gave final approval of the version to be published; and agree to be accountable for all aspects of the work.

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Disclosure

The authors report no conflicts of interest in this work.

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