Research paper

Intergenerational relationship, family social support, and depression among Chinese elderly: A structural equation modeling analysis

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ABSTRACT

Objective: This study aimed to investigate the association among intergenerational relationship, family social support, and elderly's depression symptoms.
Method: Data were obtained from China Longitudinal Aging Social Survey (CLASS) 2014, which is a continuous large-scale national social survey project conducted by the National Survey Research Center at Renmin University of China. Stratified multi-stage probability sampling method was used to collect the sample ($N = 11,511$). Structural equation modeling was adopted to analyze the association among intergenerational relationship, family social support, and elderly's depression.
Results: Intergenerational relationship and family social support were negatively correlated with an elderly's depression level. Elderly who enjoyed positive intergenerational relationships with their children would experience adequate family social support and likely have few depression symptoms.
Conclusion: Intergenerational relationship directly affected the elderly's depression level. Family social support played a mediating role between intergenerational relationship and depression. Our findings could contribute to current theories and knowledge and provide implications in social policy, pension service, and social work intervention for the elderly in China.

1. Introduction

Worldwide population is aging rapidly. The older population is predicted to reach 2.03 billion by 2050, and this number will account for 22% of the world's population (United Nations, 2015). China has become the world's most populous country and one of the fastest aging countries. The elderly population aged 65 years and above reached 144.34 million in 2015 and increased by 6.79 million in the previous year (China's Ministry of Civil Affairs, 2016). The aging of population is accompanied with a series of problems, including depression, which is a remarkable public health problem that affects the mental health of the elderly (Luijendijk et al., 2008). The number of patients with depression increased by 18.4% between 2005 and 2015, and elderly patients suffer from one of the highest incidences of depression (World Health Organization, 2017). Approximately 31.2% of elderly people in China manifest depression symptoms (Li and Ma, 2017). Maintaining a high level of mental health status is an important aspect of successful aging, which is directly related to the quality of life and well-being of the elderly (Freund and Baltes, 1998).

Filial piety is an important manifestation of Confucianism that obliges children to respect, care for, and revere their parents (Chen, 2010; Croll, 2006), and this virtue is shown by the financial support, life care, and spiritual comfort provided by children to the elderly (Zhang and Li, 2005). Family members, especially descendants, offer important social support for the elderly (Ho et al., 2009; Sereny, 2011). Intergenerational relationship plays an important role in assuring the mental health and well-being of individuals throughout their lives (Guo et al., 2015; Gautam et al., 2011). Mainstay families and nuclear families have always been China's traditional and major family types. When children reach adulthood, they form their own nuclear family, but they still live with their parents to form a stem family. Under such circumstances, a sustained and stable intergenerational relationship exists between adult children and elderly parents. Nevertheless, China's enormous social changes have reduced the family scale and reconstructed the family structure, thereby creating challenges to the original Chinese intergenerational relationships (Ma et al., 2011; Xiong and Shi, 2016). This study aimed to investigate the effect of intergenerational relationship and family social support on the elderly's depression in the current Chinese context.

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1.1. Intergenerational relationship and the elderly's mental health

Intergenerational relationship refers to the relationship between two adjacent generations (Gilleard and Higgs, 2002). Its core is the parent-child relationship (Keating et al., 2015). From this perspective, this study mainly focused on the relationship between elderly parents and adult children. Combining the intergenerational solidarity model (Roberts et al., 1991) with the intergenerational conflict model (Clarke et al., 1999; Luescher and Pillemer, 1998), Bengtson et al. (2002) developed solidarity-conflict theory. This theory holds that parents and children experience not only intimacy and cohesion but also alienation and conflicts (Bengtson et al., 2002). Solidarity and conflicts are the paradoxical attributes of intergenerational relationships, and such relationships oscillate back and forth between these two sides or maintain a relative balance. The mutual transformation of solidarity and conflicts is a dynamic process of shifting (Clarke et al., 1999). This theory emphasizes that intergenerational relations are a complex and multidimensional concept and therefore cannot be viewed positively or negatively in one aspect.

The correlation between the intergenerational relationship and mental health of the elderly has been examined through empirical studies (Reisig and Fees, 2007; Teerawichitchainan et al., 2015; Tornello and Patterson, 2016). A positive intergenerational relationship, such as frequent intergenerational exchanges, can alleviate loneliness and depression symptoms and promote the elderly's mental health (Murayama et al., 2015; Tsai et al., 2013). Meaningful communication between elderly people and their adult children likely benefit the mental health of the former (Waites, 2009). On the basis of a sample of elderly women in Europe, Lin et al. (2011) suggested that a strong emotional connection between elderly people and their children increases elderly women's life satisfaction. Conversely, a disordered and conflicting intergenerational relationship among family members weakens the well-being of elderly people and causes depression (Krsteska and Pejoskagerazova, 2010; Newsom et al., 2008; Nasser and Overholser, 2005).

1.2. Family social support and the elderly's mental health

Social support is a comprehensive concept that can be categorized in several different ways. It can be divided into family support, friend support, community support, and coworker support (Taylor, 2011). As verified by the main effect model, social support positively influences mental health under any circumstances (House et al., 1988). Empirical studies have shown the importance of social support in the elderly's mental health (Holt-Lunstad et al., 2010; McKinley et al., 2012; Tajvar et al., 2013; Ang and Malhotra, 2016; Gallardo-Peralta et al., 2015). Hence, social support not only promotes positive mental well-being (Lyons et al., 2013) but also alleviates negative mental outcomes (Fredriksen-Goldsen et al., 2012).

As a vital component of the elderly's social support, family social support is essential for elderly's mental health. Lyons (2016) demonstrated that emotional and practical support from family members can reduce the occurrence of psychological distress, thereby reducing the level of depression (Koelmel et al., 2017). However, existing studies have not reached a unified conclusion. Some studies have demonstrated that relying on children for social support tends to negatively affect the psychological well-being of the elderly (Lee, 1985). In Western countries, parents generally provide support to their offspring rather than gain support from their children. Studies conducted in Western countries have also indicated that obtaining help from an adult child may result in low life satisfaction for the elderly (Lowenstein et al., 2007). Conversely, traditional Chinese values emphasize filial piety, and adult children bear the primary responsibility for economic and emotional support for the elderly (Tang, 2006). Therefore, most relevant studies in China have mainly considered older parents as recipients of intergenerational support. Obtaining support from children can lead to high

life satisfaction for the elderly (Wang and Li, 2011), and lack of family care may lead to poor psychological well-being for the elderly (Deng et al., 2012). Our study focused on the elderly's family support provided by their adult children and examined its impacts on elderly's mental health.

1.3. Intergenerational relationship, family social support, and the elderly's mental health

Intergenerational relationship and family social support have a direct impact on the mental health of senior citizens, but a framework has yet to be established to explain the integrated relationship among the three variables. The social convoy model is a comprehensive theoretical framework that can be used to explain the association among elderly's social relations, social support, and mental health (Kahn, 1980). This model proposes the following theoretical contents. First, individuals find emotionally close social partners in their old age to satisfy their needs for intimacy and reduce interactions with peripheral social partners. Second, older individuals are more inclined to address emotional needs by narrowing their social network, placing positive emotions first, and avoiding negative emotions. Third, for older people, social companions with high emotional intimacy are mainly spouses, children, and family members, as well as friends, neighbors, and relatives. Fourth, high emotional intimacy and strong social support are conducive to the health and well-being of older adults (Löckenhoff and Carstensen, 2004).

According to the social convoy model, the social relations of the elderly can be expressed in three concentric circles. Kahn (1980) pointed out that the center circle represents an individual, the innermost circle denotes the closest social partner, the middle circle refers to social relationships that have a close but not very intimate relationship with the individual, and the outermost circle corresponds to people who are less closely related to the individual. People in the innermost circle interact with older adults most frequently and provide the most social support for the elderly, and these people are known as close social partners. People in the middle and outermost circles who maintain a certain degree of interaction with the elderly but have less interaction with them are called peripheral social partners. This study focused on the intergenerational relationship and family social support within the innermost circle.

One of the core ideas of the social convoy model is the emotional closeness in the social relationship. Emotional intimacy is initially defined as a feeling of concern, trust, and enjoyment in a relationship (Cunningham, 1986; Lee et al., 1990). Emotional intimacy among individuals promotes support and helping one another (Korchmaros and Kenny, 2001). Emotional intimacy in social relation is mainly derived from emotionally close social partners. The level of emotional intimacy is related to the number of companions, the frequency of contacts, and the depth of intimacy. The number of close social partners, the frequency of contact with close social partners, and the quality of social relationship affect the total amount of social support in each convoy circle.

The intergenerational relationship between parents and adult children is an important social, psychological, and economic support for the elderly (Aziz and Yusooff, 2012), and this type of relationship can affect family social support for the elderly. Santarelli and Cottone (2009) argued that a strong intergenerational relationship can provide strong family support. Moreover, an enhanced quality of family intergenerational relationship corresponds to a remarkable social support perceived by the elderly (Do and Malhotra, 2012).

In summary, intergenerational relationship and family social support can directly influence the elderly's mental health. Furthermore, the social convoy model shows that the quality of intergenerational relationship has an impact on family social support, which further influences the elderly's mental health; that is, family social support may play a mediating role between intergenerational relationship and the
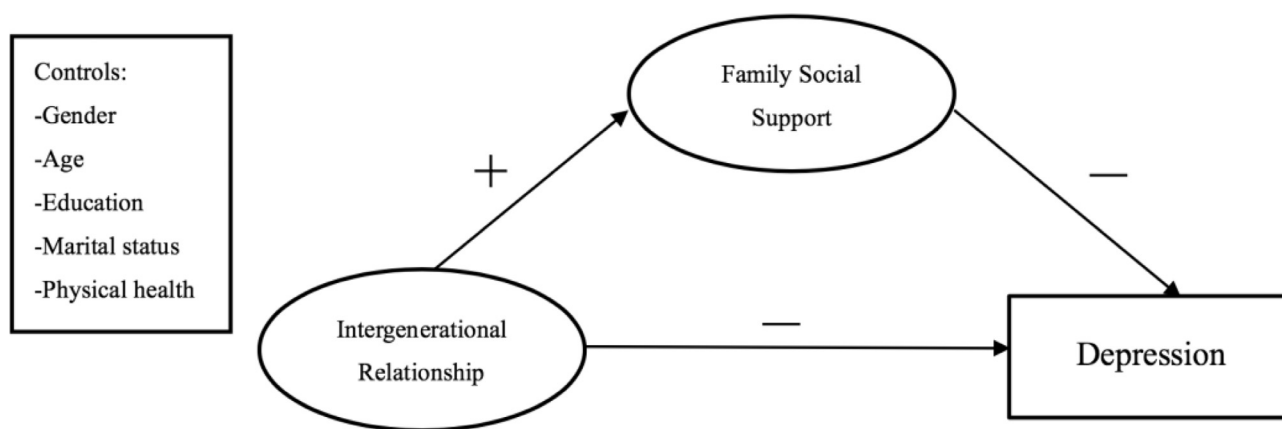
Fig. 1. Conceptual framework.

elderly's mental health. However, empirical research on related issues is scarce in the context of mainland China. Our study aimed to understand the mechanism among the intergenerational relationship, family social support, and mental health of the elderly. The conceptual framework of the study is presented in Fig. 1. Three major research hypotheses are developed from the framework.

Hypothesis 1. Elderly people who enjoy a high-quality intergenerational relationship with their adult children have less depression symptoms.

Hypothesis 2. Elderly people who obtain strong family social support have less depression symptoms.

Hypothesis 3. Elderly people who experience a high-quality intergenerational relationship with their adult children receive more family social support, which leads to few depression symptoms.

2. Methods

2.1. Participants

This study included a sample of 11,511 older people aged 60 years and above with an average age of 70.31 years (S.D. = 8.102) in mainland China. Data were obtained from the China Longitudinal Aging Social Survey (CLASS) 2014, which is a continuous large-scale national social survey project that aims to analyze various problems of the elderly in the aging process and improve the elderly's life quality. The CLASS baseline survey was officially launched in 28 provinces (municipalities and autonomous regions) except in Hong Kong, Taiwan, Macau, Hainan, Xinjiang, and Tibet from August to October 2014. The survey involved a stratified multi-stage probability sampling method. First, the county-level area (including counties, county-level cities, districts) was selected as the primary sampling unit (PSU). Second, the village/neighborhood committee was chosen as the secondary sampling unit (SSU). Finally, drawing sampling methods were used in each village/neighborhood committee to sample each household, and one elderly person was chosen in each household. The samples of the 2014 CLASS were from 134 counties and districts and 462 villages and dwellings across China. A total of 462 community survey questionnaires and 11,511 individual questionnaires were available. The overall age distribution of the survey sample was similar to the results of the sixth census in 2010, and the data quality was satisfactory.

Table 1 presents the full descriptive statistical results of the sample characteristics. There were more female participants than male ones (51.6% vs. 47.6%). More than half (52.8%) of the elder people had attended junior high school, with 33.7% of them having graduated from private or primary school. Nearly half of the elderly respondents (56.6%) are in good health condition and most of them (64.7%) were

Table 1
Descriptive statistics of the sample characteristics (*N* = 11,511).

	Frequency (N)	Percentage (%)
Gender		
Male	5479	47.6
Female	5945	51.6
Age	Mean = 70.31	S.D. = 8.102
Education level		
Illiterate	3617	31.4
Private school/ Primary school	3877	33.7
Junior high school	2201	19.1
Senior high school/Junior college	1130	9.8
College and above	679	5.9
Physical health		
Healthy	4798	41.7
Generally fine	3326	28.9
Relatively unhealthy	3187	27.7
Marital status		
Lived with a spouse	7449	64.7
Lived without a spouse	4049	35.2

lived with a spouse.

3. Measures

3.1. Intergenerational relationship

Affectional relationship is a core dimension of intergenerational relationships. Intergenerational affectional relationship refers to positive emotions held by two generations of family members toward each other (Bengtson and Roberts, 1991). This study mainly measured the intergenerational relationships through the degree of emotional intimacy between elderly parents and adult children. The intergenerational relationship was quantified on the basis of the following two questions in CLASS 2014: (1) "Do you think you are emotionally close to your children?" (no = 1, close = 2, and very close = 3), and (2) "Do you think that your children are not sufficiently concerned about you?" (usually = 1, often = 2, sometimes = 3, and never = 4). Emotional closeness and children's care constituted the latent variables of intergenerational relationships as the observed variables. High scores indicated good intergenerational relationships.

3.2. Depression

Depression was quantified by using the abridged version of the Center for Epidemiologic Studies Depression Scale (CES-D) (Radloff, 1997). This scale has been widely used in research across various populations, and its Chinese version has shown good validity and reliability in other studies on elderly Chinese people (Liu et al.,

Table 2
Standardized Factor Loadings of the Observed Variables on Latent Construct.

Latent construct	Observed variable	Factor loading
Intergenerational relationship	Do you think you are emotionally close to your children?	0.552
	Do you think that your children are not enough concerned about you?	0.692
Family social support	How many families/relatives do you meet or contact at least in one month?	0.768
	How many families/relatives do you think you can talk to about your privacy?	0.660
	How many families/relatives can help you when you are in need?	0.834

2013). The scale contains nine items. Of these items, three represent positive emotions, and six correspond to negative emotions. In our study, each item provided a three-point response scale ("no," "sometimes," and "often") to the question, "Did you have the following feelings in the past week?" to evaluate the depression symptom of the elderly people. The higher the score was, the more the depression symptoms would be. The average score of the 12 items was determined to assess depression, and Cronbach's alpha for CES-D was 0.893 in this study.

3.3. Family social support

The family serves as one of the most vital social support systems in old age. Therefore, family social support is one of the most important components of social support. In this study, three indicators were used to measure social support at the family level. The first indicator was family support network, which was mainly reflected by the number of family members and the frequency of interaction. The second indicator was emotional support, which was mainly manifested in the emotional intimacy of the elderly and their family members. The third indicator was actual support, which was assessed through practical assistance provided by family members. As such, family social support was examined with three questions in CLASS 2014: (1) "How many families/relatives do you meet or contact at least in one month?" (2) "How many families/relatives do you think you can talk to about your privacy?" and (3) "How many families/relatives can help you when you are in need?" The options ranged from 0 to 5: no one = 0, 1 person = 1, 2 persons = 2, 3 to 4 persons = 3, 5 to 8 persons = 4, and more than 9 persons = 5. The higher the score was, the higher the level of family social support would be.

3.4. Control variable

The following control variables were considered: gender (male = 0 and female = 1), age, education level (illiterate = 0, private school/primary school = 1, junior high school = 2, senior high school/junior college = 3, college and above = 4), marital status (lived with a spouse = 0, lived without a spouse = 1), and physical health (healthy = 0, generally fine = 1, unhealthy = 2).

3.5. Data analysis

Structural equation modeling was adopted with Amos 21.0 to analyze the data and test the model. In the structural equation model, goodness-of-fit indices were the main points in the evaluation of the hypothetical path and the data. Three criteria were used to evaluate the modeling fitness. (1) For χ^2, a small χ^2 indicates that the theoretical model is suitable for the actual data, and a non-significant ($p > 0.05$) χ^2 suggests that the theoretical model is well fitted to the sample data (Bollen, 1989). However, a well-fit hypothetic model commonly produces a significant χ^2 if the sample size is large because of the sensitivity of the likelihood ratio test to sample size (Byrne, 2001). (2) For the comparative fit index (CFI), values above 0.90 show a good model fit (Bentler, 1990). (3) For the root mean square error of approximation (RMSEA), values less than 0.05 are equal to a "close fit" (Kline, 2005).

4. Results

4.1. Test of measurement model

The measurement model is examined before the hypothesized structural model is validated. The results show that the measurement model has a good fit index. Although χ^2 is significant ($\chi^2 = 68.934$, $p < 0.001$, df = 7), the two other indicators show that the model has a good fit index with CFI (0.995) greater than 0.9 and RMSEA (0.028) less than 0.05, indicating that the measurement model is satisfactory. The model analysis results reveal that all of the observed variables in this model have significant loadings on the latent variable. The standard factor loadings of all of the observed variables are between 0.552 and 0.834 (Table 2), and the acceptable factor loading is above 0.3 (Agnew, 1991), demonstrating that all the observed variables in this model are significantly loaded on the latent variable. Therefore, the selected indicators effectively represent the intrinsic structure of the latent variable in a statistically reliable manner, and the measurement model is well fitted.

4.2. Test of structural model

The structural model provides a good fit to the data. The chi-square value ($\chi^2 = 373.533$, $p < 0.001$, df = 27) is significant because of its sensitivity to the large sample size, but other goodness-of-fit indices
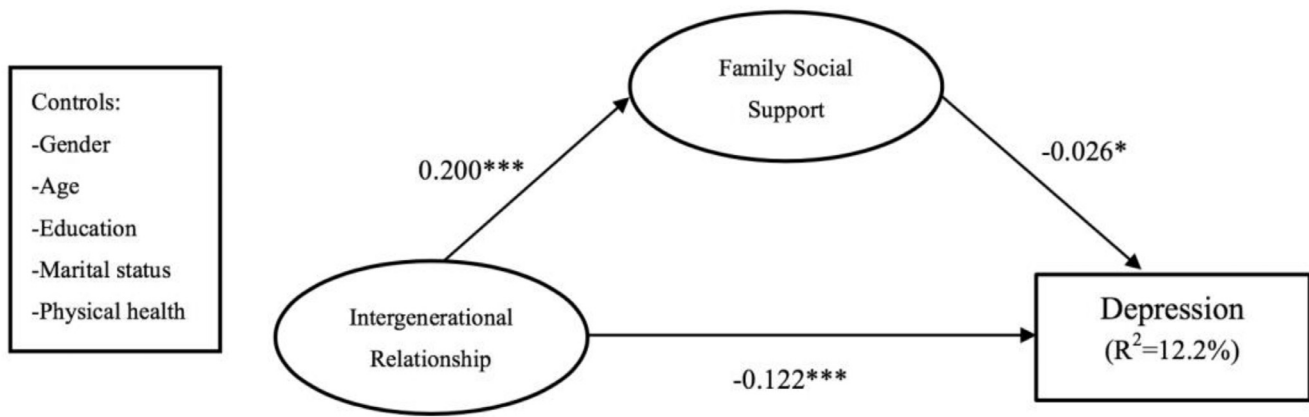
Table 3
Unstandardized and standardized path coefficients for the structural model.

			B	β	S.E.	C.R.	p
Family social support	←	Intergenerational relationship	.852	.200	.062	13.651	***
Depression	←	Family social support	−0.004	−0.026	.002	−2.202	*
Depression	←	Intergenerational relationship	−0.074	−0.122	.009	−8.186	***
Depression	←	Gender	.009	.017	.006	1.488	.137
Depression	←	Age	.001	.036	.000	3.156	**
Depression	←	Educational level	−0.021	−0.093	.003	−8.298	***
Depression	←	Marital status	.095	.171	.007	14.309	***
Depression	←	Physical health	.052	.161	.003	14.936	***

Note: B is the unstandardized path coefficient, β is the standardized path coefficient, S.E. is the standard error, C. R. is the critical ratio, and p is the significance level.
***$p < 0.001$; **$p < 0.01$; ***$p < 0.05$..

Fig. 2. Standardized solutions for the structural model of intergenerational relationship, family social support, and depression among the elderly. (***$p < 0.001$;*$p < 0.05$).

demonstrated satisfying results. CFI (0.981) is above 0.90, and RMSEA (0.033) is lower than 0.05. The results show that the elderly's depression can be explained by this model at 12.2 percent.

The unstandardized and standardized path coefficients for the structural model are presented in Table 3, the standardized solution for the test of the structural model is presented in Fig. 2. Only the significant paths of the main predictors are shown in this figure for brevity. As hypothesized, an intergenerational relationship elicits a significantly direct effect on the depression symptoms of the elderly. The higher the quality of the intergenerational relationship is, the lower the level of the elderly's depression symptom will be ($\beta = -0.122$, $p < 0.001$). Moreover, family social support is negatively correlated with depression among the elderly ($\beta = -0.026$, $p < 0.05$), indicating that the greater the family social support is, the lower the level of depression of the elderly will be. An intergenerational relationship can influence the depression of elderly through the mediating role of family social support. The elderly with a high-quality intergenerational relationship tend to receive considerable family social support ($\beta = 0.200$, $p < 0.001$), thereby leading to a reduced risk of depression symptoms.

Among the control variables, age, educational level, marital status and physical health influence depression in the elderly. There is a positive relationship between age and depression ($\beta = 0.036$, $p < 0.01$), which means older people tend to be more depressive with the increasing of age. Senior adults with higher educational level are accompanied with lower level of depression ($\beta = -0.093$, $p < 0.001$). The elderly lived with a spouse are less depressive than the counterparts lived without a spouse ($\beta = 0.171$, $p < 0.001$). Good health condition ($\beta = 0.161$, $p < 0.001$) predicts a decreased risk of depression among the elderly. However, gender has no significant effect on the elderly's depression symptom.

5. Discussion

This study analyzed the relationship among intergenerational relationship, family social support, and depression of senior adults in mainland China on the basis of the data from CLASS 2014. We investigated the direct effect of intergenerational relationship and family social support on elderly depression and explored how family social support mediated the relationship between intergenerational relationship and the elderly's mental health. The major findings of this research were elaborated as follows.

We observed that the intergenerational relationship was negatively associated with the depression symptom of elderly people, and this finding validated the first hypothesis of our study. This result indicated that an intergenerational relationship directly influenced the depression of the elderly, and this observation was consistent with previous findings, which demonstrated that a good intergenerational relationship

can prevent and alleviate depression among elderly people and improve their mental health (Lin et al., 2011; Gautam et al., 2011). Therefore, intergenerational relationship is essential for the elderly's mental health.

Intergenerational relationships in China and Western society are completely different. In modern families, children are brought up by their parents when they are underage, but they no longer have the obligation to support their elder parents once they become adults (Bengtson and Martin, 2001; Jiang et al., 2018; Shi, 2015). In China, adult children assume responsibilities to support their older parents. This phenomenon can be explained by filial piety, a representative of Chinese traditional culture that emphasizes the virtue of respecting elders and ancestors. Filial piety is manifested by the harmonious intergenerational relationship between children and elderly (Liu, 2005; Li et al., 2018). Filial piety requires that adult children in China accompany, respect, and support their older parents. Hence, elderly people and their children easily form a good intergenerational relationship, which is beneficial to their mental health (Chen, 2010).

The second hypothesis of this study was also verified. Consistent with previous theoretical and empirical research results, our result demonstrated that family social support could reduce the level of depression in the elderly. At the theoretical level, this result validated the main effect model, which showed that the increase in social support was beneficial to the mental health of the elderly, and one of the most vital components of social support is family social support. This study used three indicators to measure family-level social support. The first indicator was household support network, which was mainly reflected by the number of family members and the frequency of interaction. The greater the number of family members and the more frequent the interaction were, the larger the family social network for the elderly would be. The second indicator was emotional support, which was measured with the question, "How many families/relatives do you think you can talk to about your privacy?" The third indicator was actual support, which was operationalized through practical help provided by family members. All of the three social support indicators were conducive to the mental health of the elderly. The larger the family network of the elderly is, the more the opportunities for the elderly to communicate and interact with family members will be, thereby helping reduce the sense of loneliness of the elderly (Golden et al., 2009; Zhou et al., 2018). Receiving more emotional support can make older people feel closer to their family members, which consequently increases the level of perceived social support and alleviates depression among the elderly (Jacobson et al., 2017; Walther et al., 2017). The physiological functions of the elderly continue to degenerate with aging, and their income level declines after retirement (Bonder and Dal Bello-Haas, 2017). Practical support, such as helping elderly people do their housework and providing them with financial assistance, can

reduce the elderly's burden in life and anxiety about life pressures, thereby improving their psychological well-being (Li et al., 2014; Tian, 2016).

We found that an improved intergenerational relationship provided the elderly with more family social support, which further alleviated their depression. This finding supported the third hypothesis, that is, an intergenerational relationship could indirectly affect the level of depression of the elderly through family social support. This research supported the social convoy model. Intergenerational relationship and family social support were in the innermost circle of the elderly's social network. Intergenerational relationship mainly refers to the degree of emotional intimacy between elderly people and children, and family social support corresponds to the support of older people in all aspects received from their adult children within a family. An intimate intergenerational relationship is equivalent to remarkable social support from adult children and low degree of depression of the elderly, which is consistent with the theoretical assumptions of the social convoy model.

The results of this study can be explained by the current pension model in China. The family pension remains the most common pension model for senior citizens in China (Zhang, 2011), although the proportion of social pension is gradually increasing (Wei, 2016). However, China is unable to organize an old-age security system and social pension system across the whole country because social organizations have yet to be fully developed in mainland China. As a result, such social reality makes a family become the best destination for old-age care, and adult children have assumed considerable pension care duties in China. Therefore, the relationship between elderly people and children is the most important social relationship for the elderly in Chinese society, and family social support provided by their adult children is the main support for older people in China.

6. Limitations

First, the cross-sectional method only analyzed the relationship among intergenerational relationship, family social support, and depression of the elderly, but the causality between the core variables in our study could not be clarified. As such, our findings should be further examined by longitudinal studies. Moreover, our study focused on the intergenerational relationship between the elderly and their adult children. The relationship between grandparents and grandchildren might influence the former's mental health, and such a relationship should be further investigated in future research.

CLASS 2014 is second-hand data, and the measurement of some variables based on CLASS is vague. For example, intergenerational relationship involves many dimensions, including affectional, associational, consensual, functional, normative, and structural relationships. However, given the nature of second-hand data, this study could not include all of them. Moreover, family social support is a multidimensional concept that includes subjectively perceived and practically received support. Nevertheless, given the limitation of secondary data, the measurement of family social support could not include all of the social support types in our study.

6.1. Implications

This study has important theoretical and practical implications. First, this study examined the social convoy model in the Chinese social context and provided empirical evidence for this theory. Our study developed an integrated framework to describe the relationship among the intergenerational relationship, family social support, and depression of the elderly. The conceptual framework proposed in our study could be utilized to guide future related research. Our results also validated the main effect model of social support theory and agreed with existing empirical findings, that is, social support received by elderly people is beneficial to their mental health (Fredriksen-Goldsen et al.,

2012; Koelmel et al., 2017).

Second, this study provided a basis for policy formulation. China is experiencing dramatic social changes, which affect the traditional intergenerational relationship of the Chinese family. The frequency of interaction among family members decreases, and their emotional relationship becomes alienated, thereby weakening the intergenerational relationship and increasing the risk of mental health problems among the elderly (Xiong and Shi, 2016; Knodel et al., 2013). Our results also showed that family intergenerational relationship and social support had a significantly positive effect on the prevention of elderly depression. Therefore, to prevent and solve depression among the elderly, authorities must advocate the formation of a harmonious intergenerational relationship, including intergenerational structure, association, affection, consensus, and norms, between elderly people and their adult children. Social policy should enhance material, emotional, and instrumental support for elderly people.

Our study could provide guidance for social work practice. Intergenerational relationship and family social support could be used as a breakthrough to promote the elderly's mental health. Thus, social work intervention should be provided to improve intergenerational relationship between the elderly and their adult children. At a microscopic level, social work could bridge generations to promote communication and interaction between the elderly and their adult children, thereby helping the elderly form harmonious intergenerational relationships. At a macro level, social work could promote a good social environment, where the young generation is encouraged to care, respect, and show filial piety to the elderly. Such behavior could help relieve the elderly's depression symptoms and improve their mental health.

6.2. Future research

Most studies have shown that parents who receive social support from adult children tend to generate good mental health outcomes (Tajvar et al., 2013). However, other studies have indicated that elderly parents who are assisted by adult children show less life satisfaction, whereas elderly parents who provide help and support for their children likely feel satisfied with their life (Lowenstein et al., 2007). With this conflicting findings, future research should explore the effects of different support types on the elderly's mental health in the context of China. The intergenerational relationship between generations should include not only the relationship between elderly people and their adult children but also the relationship between elderly people and their grandchildren, and both relationships can affect the elderly's mental health (Bates and Taylor, 2012; Waites, 2009). Thus, the effect of the intergenerational relationship among three generations should be discussed in future research.

7. Contributors

CL: designed and executed the study, performed the statistical analysis, and wrote the paper. SJ: collaborated with the study and revised the manuscript. XZ: revised the manuscript.

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Supplementary materials

Supplementary material associated with this article can be found, in the online version, at doi:10.1016/j.jad.2019.01.032.

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