Prevalence and related influencing factors of depressive symptoms for empty-nest elderly living in the rural area of YongZhou, China

Li-Qin Xie, Jing-Ping Zhang*, Fang Peng, Na-Na Jiao

School of Nursing of Central South University, No. 172 Tongzipo Road, Changsha, Hunan 410013, PR China

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ABSTRACT

The number of empty-nest elderly is on the rise, especially in rural areas of China. The empty-nest elderly were concerned from social and demographic perspective, but researches on mental health issues of the aged were still rare in China. To clarify the prevalence of depression among empty-nest elderly in a rural area of YongZhou, Hunan and evaluate the impact of social support, coping style and socio-demographic factors on depression of the empty-nest elderly, with the goal of decreasing the rate of depression in empty-nest elderly, a questionnaire survey was conducted on 415 elderly persons. The determined prevalence of depressive symptoms was 74.46%. The empty-nest group, in comparison with the non-empty nest group, had higher levels of depression. Multivariate linear regression analysis showed associations between depressive symptoms and negative coping style, support utilization, religious beliefs, economic status, marital status and subjective support. The results suggested that the strategy to alleviate the depression in empty-nest elderly can be considered by the society, village committee, the family members and the empty-nest elderly subjects themselves, which could control effectively the incidence of depression.

1. Introduction

In China, the number of empty-nest elderly, of which there are no children or children had already departed from them, is on the rise, especially in rural areas, which were closely related to China’s overall economic environment, such as the accelerated process of urbanization, the imbalance of economic development between the inland and coastal region, and the flow of rural surplus labor to big and Eastern coastal cities (Liu et al., 2007). At present, the “empty nest elderly family” in China account for almost 25% of elderly households, and the proportion of “empty nest elderly family” in Beijing has been over 35% (Li et al., 2003). It is estimated that the proportion of empty-nest elderly households will reach 90% by 2030, while all our elderly families will be “of the empty nest” (Li et al., 2003).

The empty-nest elderly not only experience the restructuration of lifecycle, but also undergo the transformation of family-cycle, meanwhile, the organizational structure of individual and brain function changes with aging, the functional activities of the systems significantly decreased, which lead to many psychological problems and barriers (Liu and Wang, 2006). Many empty-nest elderly must adjust to major changes in physical health; unfortunately, their mental health troubles were often overlooked in these serious of adjustment processes, such as anxiety, loneliness, Alzheimer’s disease (AD) and the most common psychological symptom is depression.

Depression is the most frequent psychiatric disorder in old age (Stoppe, 2008). Almost 1 in every 6 elderly, suffer (often in silence) with late life depression (Keith et al., 2001). Of the 34 million elders in the United States, about 5 million (15%) endure persistent depressive symptoms (referred to as “minor depression” by the Surgeon General) and another 1 million (3%) suffer major depression (Thompson, 1996). Collectively, the two statistics will become 18%, the estimate was actually rather conservative. Other gerontological professionals report a 20–40% prevalence range (Beekman et al., 1999), and Tiemeier (2003) pointed out that between 1% and 3% of elderly persons who live in the community has major depression. Moreover, epidemiological studies consistently reported much higher prevalence-estimates for depression (between 10% and 20%) (Tiemeier, 2003). Nevertheless, accurate prevalence-estimates of late life minor and major depression are difficult to ascertain, because many elderly who suffer from clinically relevant depressive symptoms do not fulfill rigorous diagnostic criteria, the elderly were less likely to mention their mood/behavioral complaints with their friends or relatives, and the depressive symptom was often accompanied with physical diseases, which was likely to be neglected.

* Corresponding author. Tel.: +86 138 7312 7168; fax: +86 731 2650 262.
E-mail address: jjzhang1965@163.com (J.-P. Zhang).

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Depression damages the health of the elderly, decreases the elderly's social and physical activities, generate unsociability and self-grief, reduce the quality of life, it is one of the main reasons that affect the subjective well being (SWB) of elderly, and also one of the important factors which can cause the elderly to commit suicide (Kaneko et al., 2007). A report has suggested that depression and mood disorder may be major risk factors for suicide (Mann, 2002). The suicide mortality rate in the elderly has consistently been higher than that in other age groups. In 2001, the suicide mortality rate was 23.3 per 100,000 for the whole population and 33.1 per 100,000 for persons aged 65 years and above (Japanese Ministry of Health, 2002). Yet, the negative effects of old age depression were not limited to one group of people. Others, such as the family members, were burdened. Adult children become taxed and strained by the global changes in mood and behavior of their beloved aging parents. Under stress, family members sometime blame their depressed relatives for not coping adequately and demand different reactions to situational stressors (Hinrichsen and Hernandez, 1993).

Besides, old age is often associated with health problems and irreversible decrease in function capacity (Jylha, 2004; Fogelholm et al., 2006). Depressive symptoms in the elderly were correlated with an increased AD risk (Luchsinger et al., 2008). Simultaneously, there were statistically significant inverse associations between dementia and depression with total physical activity and leisure-time physical activity (Benedetti et al., 2008). Depression in the elderly who are medically ill, may increase both morbidity and mortality, then results in higher health care costs and utilization, as well as poorer functional status and outcomes for elderly patients (Seung Kim et al., 2001).

In China, registering over 134 million elderly, about 70% of the total population in countryside, most of them are empty-nest and as well as poorer functional status and outcomes for elderly patients (Wang and Fu, 2003). According to the Cheng-chao's investigation, the incidence of depression is easiest to occur in them (Wang and Fu, 2003). The rate of depression in empty-nest elderly in a rural countryside in YongZhou, (b) evaluating the characteristics of the Chinese population. It consists of positive and negative style, from 12 to 65, with higher scores indicating more social support and the diversity of social networks (e.g., family, friend, neighbor, marriage, and organization). The validity and reliability of the Chinese version of the SSRS have been confirmed. This instrument had an internal consistency of α = 0.85.

2.1. Sample
All adults aged 60 years and or above who fitted in our inclusion criteria from five villages of YongZhou in Hunan Province were invited to participate in the study, with informed consent after receiving information about the goals and the method of the investigation, and together with the cooperation of the town health center from the 21st of February to the 22nd March, 2008. The elderly are able to read, write or listen and have no cognitive disorder, which may be confused during the study as determined by study personnel.

2.2. Data collection
At first, we obtained the approval of the village committees and the elderly, agreement accompanied with cooperation of the town health center. Secondly, during our door-to-door field survey, the trained research assistants distributed the questionnaires to each participant and told or helped them on how to complete the instruments; face-to-face interviews were conducted in the subjects' homes and took half an hour on average. Finally, once completed, the research assistants collected the questionnaires immediately. Finally, 450 individuals enrolled, only 415 completed the questionnaire thoroughly. Thirty-five elder adults could not participate because of visual or hearing impairments. Eleven withdrew before finishing the interview. Nine others returned incomplete data. So, the response rate of questionnaires was 92.22% (415/450). Elderly in the study they were classified as empty-nest group and non-empty-nest group by the information obtained from the self-designed socio-demographic questionnaire.

2.3. Instruments

2.3.1. The GDS
The GDS is frequently used as standard table for screening the elderly’s depression symptoms. Depression was measured by 30-item, GDS in which subjects were asked to the elderly to express their feelings in the previous 1-week period. Every item included two answers: “yes” or “no”. 10 items in 30-item scoring with inverse sequential (the negative answer means depression), and other 20 entries scoring with positive sequence (the affirmative answer shows the existence of depression), every answer that represent depression will be given one point. The scores ranged from 0 to 30, and it showed the degree of depression as reported by the elderly; higher scores indicate higher levels of depression the elderly experiences. In generally, the GDS score is 0~10 is considered to be normal, minimal to mild depressive if the GDS score is 11~20, moderate to severe depressive if GDS score is 21~30. This instrument had an internal consistency of α = 0.85.

2.3.2. The SSRS
The SSRS is a quantitative instrument, revised by Xiao (1993), according to facts of China in 1990, which contains ten items and all of them measuring the number of an individual’s social relations. This questionnaire included three aspects: objective support, subjective support and support utilization; the scores range from 12 to 65, with higher scores indicating more social support and the diversity of social networks (e.g., family, friend, neighbor, marriage, and organization). The validity and reliability of the Chinese version of the SSRS have been confirmed. This instrument had an internal consistency of α = 0.89–0.94.

2.3.3. The SCSQ
The SCIQ (Xie, 1995), compiled by Ya Ning Xie, is based on abroad coping way questionnaire and the needs of practical application and together with the characteristics of the Chinese population. It consists of positive and negative style, positive style contains 1~12 items which reflected the feature of positive style and negative style includes 13~20 items; the responses ranged from 4 (often) to 1 (not at all). This instrument had an internal consistency of α = 0.89–0.90. The socio-demographic data were collected using a self-designed questionnaire that recorded gender, age, marital status, level of education (no education, primary school, secondary school, technical secondary school, and post-secondary school), income (very low, low, middle, high, and very high), etc. All items were self-evaluated.

2.4. Data analysis
Descriptive statistics were carried out for socio-demographic data. Independent t and χ²-tests were used to compare the socio-demographic factors, depression

4.1. The chi-square test
The chi-square test was used for comparing the socio-demographic factors, depression

4.1.1. The socio-demographic factors
The socio-demographic factors, depression

4.1.2. The depression symptoms
The depression symptoms

4.1.3. The depression severity
The depression severity

4.2. The analysis of the results
The analysis of the results

4.3. The discussion
The discussion

4.3.1. The implications for clinical practice
The implications for clinical practice

4.3.2. The limitations
The limitations

4.3.3. Future research directions
The future research directions
score, social support and coping style scores of the empty-nest elderly to the non-empty-nest ones. Pearson’s correlation was used for the association between depression scores and social support, coping style score in both the empty-nest and non-empty-nest elderly. We used the multiple linear regressions with stepwise analysis to study the significant factors predictive of depression. All data were performed using the SPSS 11.5 statistical analysis software package.

3. Results

3.1. General data

The distribution of socio-demographic characteristics of the 415 subjects is shown in Table 1. The resulting data included 231 (55.7%) empty-nest elder adults and 184 (44.3%) non-empty-nest elder adults. Subjects ranged in age from 60 to 100 years with a mean age of 70.18 ± 7.88 years (±S.D.). 205 (49.4%) were male, 210 (50.6%) were female; 291 (70.1%) were married, 124 (29.9%) were single. Most of the empty-nest and non-empty-nest elderly had finished their education to the primary school level, and could deal with mild depression, 17 (7.4%) with moderate or severe depression. Depression levels of the non-empty-nest group were 4, 24, and 14, respectively. It was seen that in the empty-nest elderly, in comparison with the non-empty-nest elderly, had lower social support score (p < 0.05) and high negative coping style score (Table 1).

3.2. Depression of elderly in different groups

The minimum, maximum, and mean GDS scores in empty-nest elderly were 4, 24, and 14, respectively. It was seen that in the empty-nest group there were 184 (79.7%) elderly subjects who had depression, including 167 (72.3%) empty-nest elderly with mild depression, 17 (7.4%) with moderate or severe depression. Depression levels of the non-empty-nest group were found to be 121 (65.8%) for low degree, followed by 4 (2.1%) for moderate or marked degree. The χ²-test showed that there were no significant differences between the empty-nest and non-empty-nest groups in gender, educational level, marital status, insurance coverage and religious beliefs (p > 0.05) (Table 1).

Table 1
Sociodemographic data of the empty-nest and non-empty-nest groups, mean ± S.D. or n (%).

<table>
<thead>
<tr>
<th>Variables</th>
<th>Empty-nest</th>
<th>Not-empty-nest</th>
<th>p =</th>
</tr>
</thead>
<tbody>
<tr>
<td>Number</td>
<td>230</td>
<td>184</td>
<td></td>
</tr>
<tr>
<td>Age (years)</td>
<td>69.53 ± 7.53</td>
<td>71.01 ± 8.25</td>
<td>0.058</td>
</tr>
<tr>
<td>Gender</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Male</td>
<td>123 (53.2)</td>
<td>108 (46.8)</td>
<td></td>
</tr>
<tr>
<td>Female</td>
<td>82 (44.6)</td>
<td>102 (55.4)</td>
<td></td>
</tr>
<tr>
<td>Educational level</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>No education</td>
<td>10 (4.3)</td>
<td>7 (3.8)</td>
<td>0.380</td>
</tr>
<tr>
<td>Primary school</td>
<td>129 (55.8)</td>
<td>107 (58.2)</td>
<td></td>
</tr>
<tr>
<td>Secondary school</td>
<td>57 (24.7)</td>
<td>36 (19.6)</td>
<td></td>
</tr>
<tr>
<td>High school</td>
<td>30 (13.0)</td>
<td>32 (17.4)</td>
<td></td>
</tr>
<tr>
<td>University</td>
<td>5 (2.1)</td>
<td>2 (1.1)</td>
<td></td>
</tr>
<tr>
<td>Marital status</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Married (remarried)</td>
<td>169 (72.7)</td>
<td>62 (27.3)</td>
<td>0.653</td>
</tr>
<tr>
<td>Single (never married, divorced or widowed)</td>
<td>122 (66.3)</td>
<td>62 (27.3)</td>
<td></td>
</tr>
<tr>
<td>Self-perceived income</td>
<td></td>
<td></td>
<td>0.047</td>
</tr>
<tr>
<td>Very low</td>
<td>16 (6.9)</td>
<td>8 (4.3)</td>
<td></td>
</tr>
<tr>
<td>Low</td>
<td>52 (22.5)</td>
<td>26 (14.1)</td>
<td></td>
</tr>
<tr>
<td>Middle</td>
<td>117 (50.6)</td>
<td>95 (51.6)</td>
<td></td>
</tr>
<tr>
<td>High</td>
<td>42 (18.2)</td>
<td>48 (26.1)</td>
<td></td>
</tr>
<tr>
<td>Very high</td>
<td>4 (1.7)</td>
<td>7 (3.8)</td>
<td></td>
</tr>
<tr>
<td>Insurance</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Medicare</td>
<td>66 (28.6)</td>
<td>45 (24.4)</td>
<td>0.348</td>
</tr>
<tr>
<td>Rural cooperative medical system</td>
<td>107 (46.3)</td>
<td>96 (52.2)</td>
<td></td>
</tr>
<tr>
<td>Uninsured</td>
<td>58 (25.1)</td>
<td>43 (23.3)</td>
<td></td>
</tr>
<tr>
<td>Religious beliefs</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Religious</td>
<td>46 (19.9)</td>
<td>39 (21.2)</td>
<td>0.420</td>
</tr>
<tr>
<td>Non-religious</td>
<td>185 (80.1)</td>
<td>145 (78.8)</td>
<td></td>
</tr>
</tbody>
</table>

3.3. SSRS and SCSQ scores in the study groups

The distributions of SSRS, SCSQ scores in the empty-nest non-empty-nest elderly are shown in Table 2. Results of the one-way ANOVA found significant differences in the scores of SSRS and SCSQ between the two groups, except the negative coping. The empty-nest elderly, in comparison with the non-empty-nest elderly, had lower social support score (p < 0.01), positive coping style score (p < 0.05) and high negative coping style score (Table 3).

3.4. Relationship between depression, social support and coping style

In our study, depression measured by the GDS was significantly positively correlated with negative coping which influences the depression scores directly, and negatively related with social support and positive coping (p < 0.05) (Table 4).

3.5. The socio-demographic factors and social support, coping style predicted the level of depression among the empty-nest old subjects

Table 5 shows the result of multivariate linear regression of depression with socio-demographic variables, social support and coping style. Results of the linear regression shows 6 variables entered into the regression model and support utilization, economic status and religious beliefs were negatively associated with the level of depression, whereas negative coping, subjective support and marital status including never married, divorced, or widowed were positively associated with the level of depression (Table 5).

Table 2
Comparison of the degrees of depression in the groups of elderly.

<table>
<thead>
<tr>
<th>Group</th>
<th>Depression No</th>
<th>Mild</th>
<th>Moderate/severe</th>
</tr>
</thead>
<tbody>
<tr>
<td>Empty-nest</td>
<td>47 (20.3)</td>
<td>167 (72.3)</td>
<td>17 (7.4)</td>
</tr>
<tr>
<td>Non-empty-nest</td>
<td>59 (32.1)</td>
<td>121 (65.8)</td>
<td>4 (2.1)</td>
</tr>
</tbody>
</table>

Table 3
Statistical comparison of the parameters in two groups by ANOVA, mean ± S.D.

<table>
<thead>
<tr>
<th></th>
<th>Empty-nest</th>
<th>Non-empty-nest</th>
<th>F</th>
<th>p</th>
</tr>
</thead>
<tbody>
<tr>
<td>Social support</td>
<td>36.89 ± 7.36</td>
<td>40.95 ± 7.84</td>
<td>29.210</td>
<td>0.0001</td>
</tr>
<tr>
<td>Objective support</td>
<td>7.74 ± 2.72</td>
<td>9.78 ± 2.96</td>
<td>53.34</td>
<td>0.0001</td>
</tr>
<tr>
<td>Subjective support</td>
<td>22.11 ± 4.46</td>
<td>23.10 ± 4.56</td>
<td>4.94</td>
<td>0.027</td>
</tr>
<tr>
<td>Support utilization</td>
<td>7.05 ± 2.32</td>
<td>8.05 ± 2.05</td>
<td>21.42</td>
<td>0.0001</td>
</tr>
<tr>
<td>Coping style</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Positive coping</td>
<td>19.46 ± 6.27</td>
<td>21.58 ± 6.74</td>
<td>10.79</td>
<td>0.0001</td>
</tr>
<tr>
<td>Negative coping</td>
<td>11.45 ± 3.91</td>
<td>10.73 ± 3.97</td>
<td>3.40</td>
<td>0.066</td>
</tr>
</tbody>
</table>

Table 4
Correlation between depression, social support and coping style.

<table>
<thead>
<tr>
<th>Parameters</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Depression</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2. Objective support</td>
<td></td>
<td>−0.173*</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3. Subjective support</td>
<td></td>
<td></td>
<td>−0.123*</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4. Support utilization</td>
<td></td>
<td></td>
<td></td>
<td>−0.179*</td>
<td></td>
<td></td>
</tr>
<tr>
<td>5. Positive coping</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>−0.107</td>
<td></td>
</tr>
<tr>
<td>6. Negative coping</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>−0.258*</td>
</tr>
</tbody>
</table>

Notes:
* p < 0.05.
** p < 0.01.
4. Discussion

Issues concerning older adults are recognized as a research priority in developed countries, evidenced by a growing body of research in the area of psychological, social and health needs of the aged (Chalise et al., 2007). Despite attracting less attention, there is also great need for research in the mental health of elderly people in developing countries, especially for the depression of empty-nest elderly in the rural area.

As a special group in the elderly, the empty-nest elderly's mental health and medical service are the first problems. At present more than 60% of China's aging population is scattered in the rural areas, the rural elderly population consist of more than 0.85 million (Li et al., 2007a). Old age is not only associated with health problems, but also with depression (Carruth and Logan, 2002). The prevalence of depressive symptoms among the elderly subjects of this study who were residents of a typical rural area in Yongzhou, China was very high, the finding was much higher than those of Hu (2005), Lv et al. (2001) and those of similar populations in other countries: Kivela et al. (1988) in Finland, Takahashi et al. (1998) in Matsunoyama, Seung Kim et al. (2001) in America, Oyama et al. (2004) in Jyobohji, Japan. It is striking that the rate of depression (79.7%) among these elderly in our study was higher than the non-empty-nest elderly (67.9%).

Besides lower income, less social support and more negative coping style, the high level of depression may be related to the empty-nest elderly's feelings of isolation and loneliness which were compounded by the rural location of farms, the nature of farming work and children's departure from home. So, the empty-nest elderly was more prone to be depressive than the not empty elderly. All of these indicated that we should focus on the depression of the elderly especially the empty-nest elderly in rural areas and its related factors, be concerned about their spiritual life, so as to formulate effective measures to reduce the incidence of depression.

In our study, the social support score of empty-nest elderly were obviously lower than that of the not empty nest ones. Social support was one of the intermediate factors between stressful life events and depression; better social support system can ease the stress of life events on the impact of the individual and avoid or reduce the occurrence of depression (Mohr and Genain, 2004). At the same time, many studies showed that social support positively associated with physical and mental health (Banthia et al., 2003; Huo and Zhang, 2007). In China, the acquired social support of empty-nest elderly is very limited, because of the elderly living with their grandchildren or living alone in rural areas, caused by the children's departure from them and work outside, moreover, the health of their peers were not very good, many elderly prefer to remain at home rather than to go out, so, most of them had few recreational and interactive activities. The result indicates that it is important for the empty-nest elderly to receive more social support from neighbors, friends and family members.

As an important individual variable, coping style as decided by the methodology, methods or strategies that people used to deal with inside and outside environmental requirements and related emotional distress, different coping styles can reduce or increase stress levels, thus affecting the relationship between stress and emotional disorders (Wu et al., 2006). In our study, the positive coping style scores of empty-nest elderly group was significantly lower than the non-empty-nest group, and the negative coping score was higher than the non-empty-nest group. This result shows that when encountered with life events, the empty-nest elderly socialize less, and were not constructive to seek help, therefore have a attitude to handle stressful life events, rather than the empty–nest elderly; the non-empty-nest elderly received more support from family members, friends, the relatives and make full use of peripheral resources to cope with the various adverse events, ease pressure, relieve psychological burden, therefore, the incidence of depression in non-empty-nest elderly was relatively low. This finding was parallel with the result of correlation analysis between depression, social support and coping style.

In the study, depression was significantly correlated with social support and coping style. Depression as measured by the GDS was significantly positively correlated with social support scales, positive coping style and negatively related to negative coping style. Social support and coping style have significant regulatory role on the occurrence of depression (Peirce et al., 2000). Research studies have repeatedly found that people who receive a high level of social support enjoy less depression (Dean et al., 1990; Russell and Curnona, 1991; Lynch et al., 1999), and enhanced health and well-being (Cohen and Wills, 1985; Sarason et al., 2001). Therefore, though increased social support and developing an appropriate coping style could ease the incidence of depression to some extent.

For taking effective measures to reduce the level of depression of the empty nest elderly, factors predicting the level of depression must be found. In fact, many studies have established several social and demographic risk factors for depression in the elderly. Female gender, single status, particularly for the widowed, lack of social support, functional impairment, and physical disease are risk factors or indicators of depression in the elderly (Bruce and Hoff, 1994; Prince et al., 1998; Beekman et al., 2001; Avila-Funes et al., 2006). In our study, multivariate linear regression analysis revealed that socio-economic factors played an important role in the development of depression. Among the socio-economic factors of the empty nest elderly, support utilization, religious beliefs and economic status were negatively associated with the depression, for the empty-group, in comparison with the non-empty-nest groups, who had lower utilization of support and lower income, so it was the same as the empty-nest elderly who were more prone to be depression than the non-empty-nest ones.

Religious belief is one of the important factors that can impact on the depression: research results report that religious belief could help elderly reduce depressive symptoms significantly, counter negative sentiment effectively, and promote physical rehabilitation (Krause, 1998; Larson and Koenig, 2000). But our result is of the contrary, this may be due to the different cultural backgrounds, various characteristics of the population and the different understanding of religion, secondly, religious issues are concerned with life and death, reflects the meaning of life by the end of life, so, believers are usually more concerned about negative reality (Fu and Li, 2007). Finally, religious belief itself may be the result of avoiding the reality after frustration and finding spiritual reposings, which in turn heightens the degree of depression.

Within our study, negative coping style and marital status being single including never married, divorced, widowed were positively associated with the level of depression. The intensity of the negative coping has the most obvious effect on depression of the empty-nest-elderly, it is the main factor that hampers mental health, and the finding is consistent with the result of correlation. Besides, being single may increase the level of elderly's depression. Because decreased health status of the elderly makes social

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**Table 5**

Multivariate linear regressions for depression among the empty-nest elderly.

<table>
<thead>
<tr>
<th>Variables</th>
<th>$B$</th>
<th>Beta</th>
<th>$p$</th>
</tr>
</thead>
<tbody>
<tr>
<td>Constant</td>
<td>17.601</td>
<td>0.0001</td>
<td></td>
</tr>
<tr>
<td>Negative coping</td>
<td>0.301</td>
<td>0.294</td>
<td>0.0001</td>
</tr>
<tr>
<td>Support utilization</td>
<td>-0.294</td>
<td>-0.170</td>
<td>0.004</td>
</tr>
<tr>
<td>Religious beliefs</td>
<td>-2.203</td>
<td>-0.217</td>
<td>0.0001</td>
</tr>
<tr>
<td>Marital status</td>
<td>-0.909</td>
<td>-0.154</td>
<td>0.008</td>
</tr>
<tr>
<td>Economic status</td>
<td>0.616</td>
<td>0.132</td>
<td>0.011</td>
</tr>
</tbody>
</table>

*Note*: total $n = 231.$
contacts difficult, social support from children are reduced with children’s departure from home for the empty nest elderly, moreover, they may undertake the double burden of taking care of their grandchildren and doing some farm work, and many elderly experience the loss of many close friends, siblings, and neighbors through death, so social support from spouse was important to reduce depression in the elderly. And negative coping style would be a predicted factor for depression in the elderly, especially for empty-nest elderly.

5. Implications to decrease the depression of the empty-nest elderly

To minimize the level of depression, improve the quality of life and prevent the suicide effectively among the empty-nest elderly, actions must be considered from multi-link, multi-ways in the care for the elderly, especially for the empty-nest elderly.

Firstly, improving the economic status and financial security of the elderly. The village and government should take measures to increase the elderly incomes, ameliorate his or her overall welfare, improve his or her actual life level, and cover the Medicare and endowment insurance comprehensively as soon as possible. These are crucial preliminary steps in decreasing their depression and improving the quality of life. Secondly, village health-center-based screening of elderly persons for depression using a questionnaire. By assessing the social and familial risk factors of depression among empty-nest elderly persons living in a rural area, raising the awareness about depression and its association with suicide may be an effective measure for the early detection and treatment of depression in elderly. Thirdly, a simple and effective village network of health services could be established to provide the elderly with timely treatment. For the prevalence of illnesses was relatively high among elderly and study indicated that depressive symptoms have strongest association with poor physical health (Johansson et al., 1997). There is a clear need for multidisciplinary medical teams to establish both medical and psychological support for elderly people in remote areas of China (Zhang et al., 2007), with the purpose of reducing the physical discomfort of elderly, helping them maintain a happy mood and developing good habits. Fourthly, the village committee should create horizontal care system, that is, the relatives, neighbors, village committee consist of comprehensive care system and help the empty-nest elderly overcome loneliness, participate in social activities actively, adjust and maintain mental health and then improve their quality of life, benefit the healthy aging society. Fifthly, we should establish family health files, communicate with their children or relatives through various means, persuade them to keep in contact with the elderly as much as possible and understand the elderly from every aspect. Finally, the social intervention has great significance in improving the living and psychological conditions of empty-nest elderly. Society and the Government should give a high degree of attention to the aged, advocate for the glorious traditional values of the Chinese nation vigorously that including loving the aged, respecting for the elderly, arouse the community to pay attention to the empty-nest elderly. Such as delivering subsidy to the poor elderly, strengthen the community to take care of the empty-nest elderly. 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These interventions should be conducted to help elderly restore confidence, overcome depression, and improve both their mental health and physical health (Zhang et al., 2008). Additional research is needed to explore how to put these strategies into practice effectively.

6. Conclusions

The present study examined the depression of older persons living in rural areas of China, that’s most of empty-nest elderly (79.7%) suffered depression and demonstrated that social support, coping style, economic status, marital status and religious belief were significant in predicting depression in the empty-nest elderly. Both family members and elderly neglected their symptoms. In order to minimize the level of depression and improve the quality of life among the empty-nest elderly, more attention must be taken in the care for the elderly, especially for the empty-nest elderly. The government should encourage the family members to give more support to the empty-nest elderly, and take actions to better their economic status, improving their physical and mental health. Rural community health service centers should be developed to provide physical and psychological evaluation and treatment (Li et al., 2007b). In doing so, the depression of the elderly can be diminished, and thus, their suicide rate as well.

7. Study limitations

Besides the interesting findings, it is important to address the limitations of this study. First, the study is a cross-sectional study, thus the results cannot establish causal relationships among the study variables. Second, this data comes from five villages of YongZhou and include only one population, so the results may not be generalized, nor compared to other castes, ethnicities and populations. Third, some data collected under the guidance of the research, because some elderly cannot read or watch, so, the result may have some bias. Fourth, smaller samples than enough reflect the true prevalence of depression. Because of the limitation discussed above, the analysis of the result in the study is cautious.

Conflict of interest statement

None.

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References


