

# Questionnaire Development and Current Situation Investigation of Care Services for the Left Behind Elderly in Rural China

Qishan Zheng<sup>1</sup>, Jianhong Zheng<sup>2,3,\*</sup>, Yaning Geng<sup>1</sup>

<sup>1</sup>Department of Graduate Studies, Lingnan University, Hong Kong, China

<sup>2</sup>Guangdong Provincial Key Laboratory of Development and Education for Special Needs Children, Zhanjiang, China

<sup>3</sup>Department of Psychology, Lingnan Normal University, Zhanjiang, China

## Email address:

[zjhong@sina.com](mailto:zjhong@sina.com) (Jianhong Zheng)

\*Corresponding author

## To cite this article:

Qishan Zheng, Jianhong Zheng, Yaning Geng. Questionnaire Development and Current Situation Investigation of Care Services for the Left Behind Elderly in Rural China. *Psychology and Behavioral Sciences*. Vol. 11, No. 6, 2022, pp. 211-218. doi: 10.11648/j.pbs.20221106.15

**Received:** October 11, 2022; **Accepted:** November 3, 2022; **Published:** November 29, 2022

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**Abstract:** The emergence of this group of rural left-behind elderly is a problem of social development in China. According to surveys, the number of left-behind elderly in rural China is currently over 16 million and based on the ageing trend of Chinese society, and this number will continue to rise day by day in the foreseeable future. However, there is still a shortage of research and measurement tools about the current state of care services for left-behind elderly in rural areas. Following the scientific procedures for questionnaire development, this study conducted two surveys in 115 villages across five provinces in China and developed a questionnaire on care services for the elderly left behind in rural areas, which was used to survey and analyse a valid sample of 836 of left-behind elderly in rural China. The results were as follows. The questionnaire on care services for rural left-behind elderly contained three factors: national social care, care from offspring, and experience of being cared for. The questionnaire had a good internal consistency reliability of 0.806. The level of care services from offspring and the elderly's experience of being cared for was relatively good; however, national social care was insufficient. Care services differed significantly depending on the number of children and age; however, sex and marital status differences were not significant. Care services for the left-behind elderly with a larger number of children in rural areas were significantly better than those with a small number of children; furthermore, those for the left-behind elderly in the 60- and 70-year-old groups were significantly better than for those in the over 80-year-old group. This study concludes that although the care service system for the rural left-behind elderly is improving, the overall situation of care services in China is still not very optimistic. Various policies and laws on care services for the left-behind elderly still need to be implemented, and social support and care services in various aspects need to be improved.

**Keywords:** Rural China, The Left-Behind Elderly, Care Services, Questionnaire Survey

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## 1. Introduction

The left-behind elderly people in rural areas refer to those whose children go out of town to work and are not home all the time [1]. According to a comprehensive survey conducted by the Chinese Ministry of Civil Affairs in 2016, there were approximately 16 million left-behind elderly people in rural China [2]. The emergence of such a left-behind elderly group in rural areas is a problem at a time of accelerated the

urbanization, industrialization, marketization, and social development in China.

In traditional Chinese culture, 60 years is considered a cycle; indeed, the term "over his/her sixtieth" is used to describe those over the age of 60, which also happens to be the retirement age in the country. According to the National Bureau of Statistics of China, by the end of 2018, the population aged 60 and above numbered 249.49 million, accounting for 17.9% of the total population; this was a 0.6% increase from the previous year. Of this number, the

population of those aged 65 and above reached 166.58 million, accounting for 11.9% of the total population; this was a 0.5% increase from the previous year. From 1999, when China entered an aging society, the number of elderly people over the age of 60 is expected to peak at 487 million in 2050, accounting for 34.9% of the total population [3]. In such a situation, the rural elderly will account for a large part of that group, reflecting a gradual trend of population aging in China. It is, therefore, urgent to establish and improve relevant systems that support the elderly [4].

Regarding the current living conditions of the left-behind elderly in rural areas, academics within and outside China are concerned about their medical conditions and services, economic income, emotional experience, and care and support services. The healthcare system analysis found that the left-behind elderly in rural areas suffers economic poverty, poor-quality healthcare, and high medical costs that impose a considerable burden on them [5]. Moreover, their self-care ability becomes poorer with age; they talk less and have less contact with the outside world, which makes it more difficult for them to receive emotional and social support from the outside world [6]. Left-behind elderly people are also affected by their children leaving home. In a study of the left-behind elderly in several villages in Thailand found that the migration of children could improve the material life of the left-behind elderly [7, 8]. By contrast, the out-migration of children was found to have a significant negative impact on the elderly left-behind in rural areas. Although such out-migration provides more financial support to the left-behind elderly, there is also a general sense of loneliness and depression among these individuals [9, 10].

The development of social pensions begins with consolidating the fundamental role of the family in the provision of pension services. Article 49 (3) of the Constitution of the People's Republic of China stipulates that "Parents have the obligation to raise and educate their minor children, and adult children have the obligation to support and assist their parents." However, despite the presence of social pension services for elderly, there are few supportive policies for family caregivers, and their implementation are not very effective [11, 12]. This is a serious flaw in China's aging-in-place policy. The community is an important foundation for ageing in place; it is a hub that connects families and institutions. A survey based on a pilot study of rural home care services in Ningbo, Zhejiang Province, reflects the lack of unified planning and insufficient policy support for existing rural elderly care institutions in China [13, 14]. The legal system for care services for the elderly is not yet complete, researcher mentioned that the current "legislation on care services for the elderly lacks a systematic framework." The existing laws are fragmented and localized. In other words, there is a lack of necessary connections between laws and the overall planning for the elderly care service system [15].

This study aimed to investigate and analyze the current situation of care services for the left-behind elderly in rural China, to provide useful ideas and an empirical basis for the

construction and improvement of the care service system. To this end, we followed a scientific procedure to develop a questionnaire.

## **2. Development of a Questionnaire on Care Services for the Left-Behind Elderly in Rural Areas**

### **2.1. Methods**

#### **2.1.1. Subjects and Survey**

Two surveys were conducted. A public perception survey was conducted by randomly interviewing 104 villagers, including 18 left-behind elderly people from five villages in four provinces and regions of China—Fujian, Ningxia, Inner Mongolia, and Shanxi. The interview question was, "In what ways do you think to care for the left-behind elderly in rural areas should be reflected?" The preliminary questionnaire developed on this basis was then used to investigate the left-behind elderly people in 67 villages in five provinces and regions—Inner Mongolia, Guangdong, Shanxi, Ningxia, and Shaanxi. Of the total 880 questionnaires distributed, 836 valid responses were collected, with a recovery rate of 95%. Included were 497 male and 339 female subjects aged between 50 and 95 years.

In the development of the questionnaire, considering the physical condition and literacy of the elderly, a large font size was adopted; additionally, recorded audio versions in a variety of dialects were developed. When the audio versions were administered, the interviewer did not provide any prompt that could cause ambiguity or guidance.

#### **2.1.2. Theoretical Concept**

After reviewing and analyzing the relevant literature and combining the results of the public perception survey, we divided the questionnaire on care services into three dimensions: national social care, care from offspring, and experiences of being cared for. Based on the above theoretical concept, a 4-point Likert scoring method was used to develop the preliminary questionnaire on care services, which comprised 19 questions presented in easily understood words.

#### **2.1.3. Data Processing**

After eliminating the invalid questionnaires, the collected data were coded, entered, and checked. The data were then statistically analyzed using SPSS 22.0 and Amos 24.0 software, including item analysis, validity and reliability testing, exploratory factor analysis, and confirmatory factor analysis.

### **2.2. Results and Analysis**

#### **2.2.1. Results of Item Analysis and Exploratory Factor Analysis**

Critical ratio index and correlation analysis were used for the item analysis. The critical ratio (CR) values of the preliminary questionnaire questions reached a significance

level of 0.01 or higher, indicating that all questions were well differentiated. A correlation analysis revealed that except for one question, whose correlation coefficient with the total questionnaire score was less than 0.2 (the question was deleted), the correlation coefficients between the scores of the other questions and the total questionnaire score were greater than 0.2, which is significant. To identify or revise the dimensions of the theoretical concept and to further screen the questions of the preliminary questionnaire, data of 300 preliminary questionnaires with the remaining 18 questions were extracted for exploratory factor analysis. Bartlett's test of sphericity and a KMO value of 0.801 indicated the

suitability of the exploratory factor analysis. The data were orthogonally rotated according to the following principles: (1) The cumulative variance contribution rate of all factors was greater than 50%, and the variance contribution rate of each factor was not less than 3%; (2) The eigenroot value of each factor was greater than 1; (3) The factors were easy to name, that is, the items contained in them were logically related; (4) Each item (question) had a high loading value (above 0.4) on only one factor; and (5) The commonality of each item was greater than 0.3. The data were subjected to several exploratory factor analyses to obtain the best results satisfying the five principles mentioned above (Table 1).

**Table 1.** Results of exploratory factor analysis ( $n = 300$ ).

Items	Factor 1	Factor 2	Factor 3	Commonality
Q8. We are cared for and sympathized by the village.	.803			.664
Q9. The village has an activity room for the elderly (nursing home), where some recreational activities will be held.	.804			.647
Q15. The government provides my subsidy/pension.	.781			.613
Q18. The state and government send people to care and comfort us.	.791			.642
Q1. Volunteers often come to help with things.	.695			.489
Q6. My children provide me with living expenses.		.751		.575
Q4. My children and grandchildren buy me gifts on festivals.		.738		.560
Q11. My offspring give me pocket money.		.712		.549
Q17. My offspring often come home to visit me.		.616		.397
Q5. My children and grandchildren often call to check on me.		.503		.339
Q10. I have a good life.			.796	.659
Q14. I am not worried about food, clothing, housing or transportation.			.756	.603
Q13. I feel comfortable with my life.			.745	.608
Q19. Someone will take care of me when I am sick.			.509	.396
Eigenroot value	3.673	2.722	1.345	
Contribution rate	26.236	19.446	9.609	
Cumulative contribution rate	26.236	45.682	55.29	

As shown in Table 1, four questions were deleted from the original 18 after several exploratory factor analyses; finally, 14 questions remained, which formed three factors. Factor 1 contained five questions, primarily referring to the care of the left-behind elderly in rural areas, in terms of national government assistance, infrastructure construction, and subsidies and insurance assistance; this was termed national social care. Factor 2 also contained five questions, primarily referring to the affection, material help and support from children and grandchildren, and other aspects of care; this was named care from offspring. Factor 3 comprised four questions, mainly involving the feelings and experiences of the left-behind elderly regarding care from all sides; this was termed experience of being cared for. Compared with the original theoretical concept, after the exploratory factor

analysis, some items were deleted, and some were regrouped.

### 2.2.2. Results of the Reliability Test

An internal consistency reliability test was performed on the data of the above-mentioned 14 items, using 300 questionnaires. Cronbach's alpha coefficients of the total questionnaire, the national social care dimension, the care from offspring dimension, and the experience of being cared for dimension were 0.806, 0.856, 0.779, and 0.757, respectively, indicating good reliability.

### 2.2.3. Results of the Validity Test

Homogeneity test. The 14-item questionnaire was tested for validity using the homogeneity test, and the results are shown in Table 2.

**Table 2.** Results of homogeneity test for validity test ( $n = 300$ ).

		National social care	Care from offspring	Experience of being cared for	Total questionnaire
National social care	$r$	1	.080	.191	.742
	$p$	-	.020	.000	.000
Care from offspring	$r$	.080	1	.429	.655
	$p$	.020	-	.000	.000
Experience of being cared for	$r$	.191	.429	1	.659
	$p$	.000	.000	-	.000
Total questionnaire	$r$	.742	.655	.659	1
	$p$	.000	.000	.000	-

As shown in Table 2, the Pearson correlation coefficients between the dimensions ranged between 0.08 and 0.429, and the correlation coefficients between each dimension and the total questionnaire ranged between 0.655 and 0.742. The correlations between the dimensions were lower than those between the dimensions and the total questionnaire; however, the correlations between the dimensions were low to moderate and failed to reach moderate correlations in all cases, indicating that the validity of this questionnaire was modest but acceptable.

Confirmatory factor analysis. The confirmatory factor

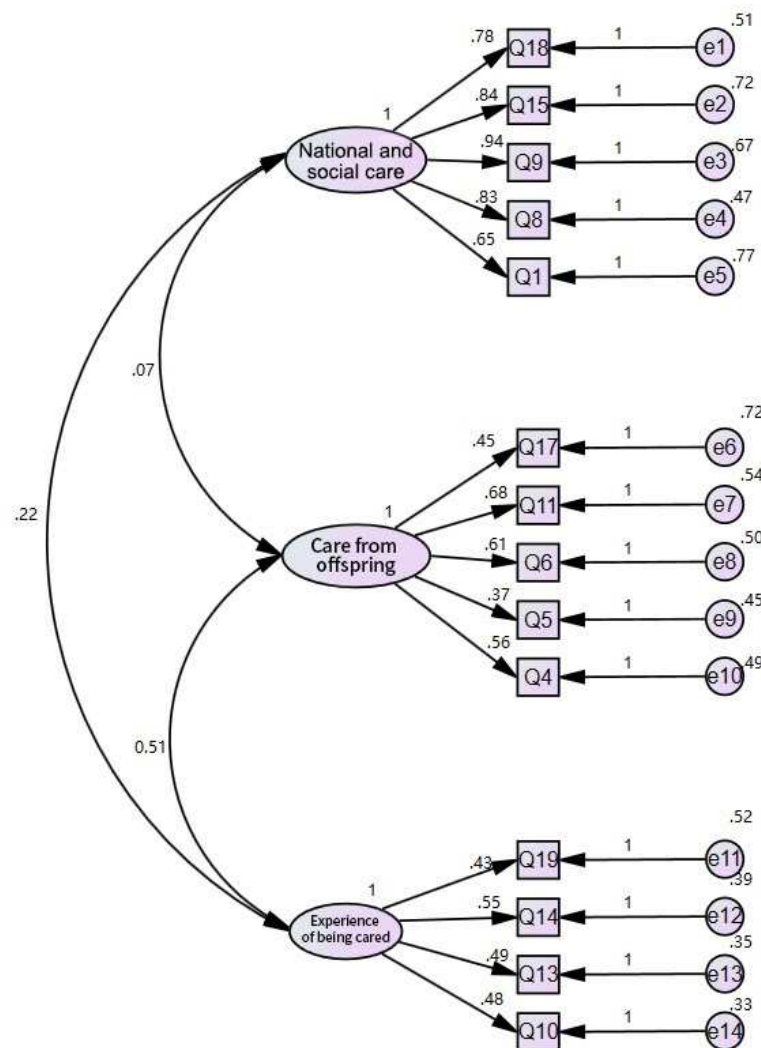
analysis is the best validity test. This study used AMOS 24.0 statistical software to perform a confirmatory factor analysis on data from 536 of the 836 questionnaires obtained from the second survey. To verify that the three-factor questionnaire comprising 14 questions was the best questionnaire structure, three models were set up for comparison in this study: three-factor with 14 questions, three-factor with 16 questions, and four-factor with 18 questions. The fit indices of the three models are shown in Table 3 and Figure 1.

**Table 3.** The fit indices of the three models.

	GFI	AGFI	CFI	NFI	RFI	RMSEA	X <sup>2</sup> /df
Three-factor 14 questions	0.930	0.901	0.899	0.868	0.838	0.072	3.798
Three-factor 16 questions	0.916	0.887	0.880	0.846	0.817	0.074	3.908
Four-factor 18 questions	0.918	0.889	0.876	0.838	0.805	0.070	3.646

As shown in Table 3, the three-factor model with 14 questions had the best fit indices. compared with the three-factor model with 16 questions and the four-factor model with 18 questions; the absolute fit indices of the three-factor model with 14 questions, that is,  $X^2/df = 3.798 <$

5,  $RMSEA = 0.072 < 0.08$ , and the values of the other fit indices were above 0.80. Although not all values reached above 0.9, they were nevertheless acceptable. Therefore, the three-factor model with 14 questions was an acceptable theoretical model.



**Figure 1.** Model diagram of confirmatory factor analysis.

### 3. Survey on the Status of Care Services for the Left-Behind Elderly in Rural Areas

A descriptive statistical analysis, analysis of variance, and test of significance of differences in demographic variables were performed on the data obtained using the

above-described questionnaire developed by this study.

#### 3.1. Results of the Descriptive Statistical Analysis

A descriptive statistical analysis was performed on the total score of the questionnaire and the score of each dimension of the questionnaire on care services. The results are shown in Table 4.

**Table 4.** Total score and the score of each dimension of the questionnaire on care services for the left-behind elderly in rural areas ( $n = 836$ ).

	Number of items	Mean	Standard deviation
National social care	5	2.039	4.442
Care from offspring	5	3.173	3.170
Experience of being cared for	4	3.223	2.364
Total questionnaire	14	2.782	6.933

As shown in Table 4, the mean of the total questionnaire was slightly higher than the theoretical median (this questionnaire used a 4-point Likert scale with a theoretical median of 2.5), which indicated that the care services for the left-behind elderly ranged between average and good. In terms of each dimension, the mean values of care from offspring and experience of being cared for dimensions were higher than 3.0, indicating that the offspring were providing the elderly with good care; similarly, the elderly had good experience of being cared for. However, the mean of the national social care dimension was lower than the theoretical median, indicating that the elderly felt care services in the national social

dimension were inadequate.

#### 3.2. Test of Significance of Differences in Demographic Variables

To test the significance of difference in order to investigate the effects of demographic variables on the status of care services, demographic variables—such as sex, age, marital status, and the number of children of the left-behind elderly in rural areas—were used as independent variables, and care services and the three dimensions were used as dependent variables. The results are presented in Tables 5 to 8.

#### 3.3. Test of Differences in Care Services for the Rural Left-Behind Elderly with Different Sexes

**Table 5.** Comparison of the means of the total scores and scores on each dimension of the care services for the rural left-behind elderly with different sexes.

		National social care	Care from offspring	Experience of being cared for	Total score
Male	M	10.380	15.954	12.855	39.189
	SD	4.489	3.139	2.375	6.957
Female	M	9.905	15.749	12.941	38.595
	SD	4.358	3.210	2.347	6.899
	<i>t</i>	1.518	0.919	0.514	1.216
	<i>p</i>	.129	.358	.607	.224

As shown in Table 5, there were no significant differences between the three dimensions of national social care, care from offspring, and experience of being cared for, with different sexes.

#### 3.4. Test of Differences in Care Services for the Rural Left-Behind Elderly at Different Ages

**Table 6.** Comparison of the means of the total scores and scores on each dimension of the care services for rural left-behind elderly in different age groups.

		National Social Care	Care from offspring	Experience of being cared for	Total score
Under 59 years	M	10.661	15.112	12.330	38.103
	SD	4.308	3.298	2.579	7.635
60-69 years	M	10.661	16.301	13.106	39.573
	SD	4.206	3.082	2.262	6.631
70-79 years	M	10.570	16.296	12.944	39.809
	SD	4.507	2.810	2.105	6.255
Above 80 years	M	8.846	15.588	13.353	37.787
	SD	4.731	3.446	2.439	7.095
	<i>F</i>	5.646	7.708	6.784	4.280
	<i>p</i>	.026	.000	.000	.005

As shown in Table 6, there were significant differences in the total score of care services for rural left-behind elderly and

scores of each dimension among different age groups. Post hoc tests (LSD) were used to further determine differences

between different age groups. On the national social care dimension, the score of the over-80 age group was significantly lower than those of the other three age groups ( $p < .01$ ). On the care from offspring dimension, the scores of the 60- and 70-year-old age groups were significantly higher than those of the age groups under 59 and above 80 years ( $p < .001$ ). On the experience of being cared for dimension, the score of the age group under 59 years was significantly lower than those of the other three age groups ( $p < .005$ ). In terms of the

total score of the questionnaire, the scores of the 60- and 70-year-old age groups were significantly higher than those of the age groups under 59 and above 80 years ( $p < .05$ ). In conclusion, the rural left-behind elderly in the senior age group, that is, aged above 80 years, had the lowest scores on the total score and dimensions of national social care and care from offspring; however, the score on the dimension of experience of being cared for was higher than those of the other three age groups.

### 3.5. Test of Differences in Care Services for the Rural Left-Behind Elderly with Different Marital Statuses

**Table 7.** Comparison of the means of the total scores and scores on each dimension of the care services for rural left-behind elderly with different marital statuses.

		National Social Care	Care from offspring	Experience of being cared for	Total score
Divorced	M	10.444	15.079	12.556	38.079
	SD	4.819	3.717	2.740	8.486
Widowed	M	9.737	15.323	13.000	39.060
	SD	4.464	3.186	2.176	6.604
Living with elderly partner	M	10.295	16.096	12.899	39.290
	SD	4.394	3.078	2.372	6.825
	<i>F</i>	1.144	6.049	0.815	2.614
	<i>p</i>	.319	.002	.443	.074

As shown in Table 7, there were no significant differences in the care services for the rural left-behind elderly with different marital statuses ( $F = 2.614$ ,  $p = .074$ ); however, there was a significant difference on the dimension of care from offspring ( $F = 6.049$ ,  $p = .002$ ). Further post hoc tests (LSD) revealed that on the dimension of care from offspring, the

score of the rural left-behind elderly living with an elderly partner was significantly higher than those of the widowed and divorced elderly people ( $p < .05$ ). In terms of the total score, although the scores of the left-behind elderly living with their partners were higher than those of the widowed and divorced elderly, there was no significant difference.

### 3.6. Test of Differences in Care Services for the Rural Left-Behind Elderly with Different Numbers of Children

**Table 8.** Comparison of the means of the total scores and scores on each dimension of the care services for rural left-behind elderly with different numbers of children.

		National Social Care	Care from offspring	Experience of being cared for	Total score
1	M	9.752	14.929	12.770	37.451
	SD	4.129	3.316	2.322	6.953
2	M	9.283	15.465	12.717	37.465
	SD	4.193	3.465	2.481	6.667
$\geq 3$	M	11.065	16.457	13.073	40.596
	SD	4.566	2.739	2.268	6.784
	<i>F</i>	15.575	14.945	2.213	22.400
	<i>p</i>	.000	.000	.110	.000

As shown in Table 8, there were significant differences in care services for the rural left-behind elderly with different numbers of children ( $F = 22.400$ ,  $p = .000$ ). There were also significant differences between the two dimensions of national social care and experience of being cared for; the scores of the rural left-behind elderly with three or more children were significantly higher than those of the elderly with one or two children. No significant differences were observed on the dimension of care from offspring, but further post-hoc tests found that elderly people with three or more children also scored significantly higher than those with only one or two children ( $p < .05$ ). In conclusion, in terms of the care services for the rural left-behind elderly, the more children the elderly had, the better their care services were.

## 4. Discussion

### 4.1. Dimensions of the Questionnaire on Care Services for the Left-Behind Elderly in Rural Areas and Its Reliability and Validity

Among the three dimensions of this questionnaire, the national social care and the care from offspring dimensions belong to the cognitive dimensions, whereas the experience of being cared for, belongs to the emotional dimension. The exploratory factor analysis and the confirmatory factor analysis showed that the structure model of the questionnaire on the three dimensions was reasonable. The validity test on the homogeneity test found low to moderate correlations among the three dimensions of the questionnaire. Additionally,

there was a low correlation between the national social care and the care from offspring dimensions; by contrast, there was a high correlation between the care from offspring and the experience of being cared for dimensions. On the one hand, this reflected the unsatisfactory structural validity of the questionnaire, and on the other, it indicated that the experience of being cared for was more influenced by the care from offspring. The overall reliability coefficient of this questionnaire was 0.806, and the reliability coefficients of each dimension ranged from 0.757 to 0.856, indicating good reliability. The reason for the modest structural validity of this questionnaire might be related to the small number of questions. Future research needs to improve the theoretical concept of the questionnaire on care services for the rural left-behind elderly and the structural validity by increasing the number of questions on various dimensions.

#### 4.2. Current Status of Care Services

Our findings indicated that care services for the left-behind elderly in rural areas were between average and relatively good, although it had not yet reached a “good” level. Despite the situation being good on the two dimensions of care from offspring and experience of being cared for, the national social care was found to be insufficient.

In terms of age, care services for the elderly were best in the 60- and 70-year-old age groups, indicating that the left behind elderly people at a younger age had better perceptions and experiences of care services- than the other age groups. This might be because the elderly in these two age groups were still in good health and most of their partners were alive. Meanwhile, the elderly aged above 80 years were in poor health and those aged under 59 might be involved in farm work, which may have affected their different perceptions and experiences of care services.

In terms of marital status, post-hoc tests found that rural left-behind elderly people living with their partners scored significantly higher on the dimension of care from offspring than those who were widowed and divorced, indicating that marital status in later life had a considerable impact on the lives of the left-behind elderly people. In terms of the number of children, the more children the elderly had, the higher their scores on the total questionnaire and each dimension; this indicates that the more children they had, the more care services were provided to the elderly.

From the scores on the experience of being cared for dimension and the results of our interview, the basic living, spiritual, and material needs of the rural left-behind elderly people in the six Chinese provinces and cities covered in this study could be met. However, the attention of the village government and the implementation of basic medical insurance and volunteer services need improvement. From the aspect of care from offspring, the emotional and material support from children and grandchildren could make the elderly feel cared for and have pleasant emotional experiences to a larger extent.

However, the rural left-behind elderly in this study received relatively less care from the national social aspect. At present,

the only government policy specifically aiming to provide economic protection for the left-behind elderly in rural areas is the new rural cooperative medical system. In general, the social security system in rural China is not perfect, and the coverage of various security policies is insufficient, with a low-security level.

In conclusion, the overall situation of care services for the left-behind elderly in rural China is not very optimistic. Although there has been some improvement in recent years, including the improvement of the protection system for the left-behind elderly in rural China, and the face that the basic living and spiritual needs of the left-behind elderly can be met, various policies and laws on care services for this group need to be implemented and improved; further, social support and care services in various aspects need to be strengthened.

## 5. Conclusion

This study has developed a questionnaire on care services for the rural left-behind elderly. Its reliability and validity meet the requirements of psychometrics and can be used as an effective tool to measure the status of care services for rural left-behind elderly. The questionnaire includes three factors: national social care, care from offspring, and experience of being cared for, and there is a high consistency between the internal dimensions. The results of the study show that, in general, the care services for rural left-behind elderly are currently inadequate; In terms of the dimensions, the care services supplied by the offspring are good, and the elderly fare better in the experience of being cared for dimension, but the care status in the national social care dimension is slightly inadequate. On the age variable, the care services for rural left-behind elderly were significantly better in the 80+ age group than in the other three groups; on the care from offspring dimension, the 60 and 70-year-old age groups were significantly better than the other two groups. On the marital status variable, the care service status of rural left-behind elderly living with a partner was better than that of widowed left-behind elderly. While on the dimension of care from offspring, the care service status of rural left-behind elderly living with a partner was better than that of widowed and divorced left-behind elderly.

## 6. Limitations

This study has the following shortcomings: (1) The construct validity of the questionnaire used in this study was modest, which might have an impact on the findings; (2) The investigation on the status of care services for the rural left-behind elderly was based on the 836 questionnaires obtained during the development of the questionnaire. A repeat survey with a large sample was not conducted to obtain more accurate conclusions; and (3) In-depth interviews with a certain number of elderly people and qualitative analysis were not conducted to further understand the deeper reasons for care services for the elderly.

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