A Study on Differences and Related Factors of Long-term Care Demand Between Urban and Rural Areas

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ABSTRACT

In recent years, the number of disabled elderly have increased rapidly. If not resolved in time, it may cause further social problems and affect the development of a harmonious society. Therefore, it is crucial to measure long-term care needs and analyze relevant social factors. We use CLHLS2014 data to measure the long-term care needs of the elderly in China, and use multiple linear regression analysis to further analyze the influencing factors and their urban-rural differences. Our results indicates that the long−term care demand level in different regions of China is quite different. The long-term care demand level in rural areas is generally higher than that in urban areas. Judging from the urban-rural differences in influencing factors, physical health, economic level, family care, pension concept and pension insurance have a significant impact on the long-term care needs of the elderly in rural areas; while the main influencing factors in urban areas are pension concepts, medical insurance and pension insurance. This shows that priority should be given to long-term care services in urban areas where medical insurance is better.

Keywords : *Elderly; Long-term care; Demand; Multiple indicators multiple causes*

1.INTRODUCTION

Since 1999, our country entered the aging society. In an aging society, the long-term care of the elderly has become a social risk. If this social risk cannot be resolved in time, it may develop into further social problems and affect the harmonious and healthy development of the society.

The World Health Organization (WHO) defines long-term care as a system of care activities performed by both informal care providers (family, friends) and formal care providers (professional caregivers) to ensure that those who do not have complete abilities can continue to enjoy their personal interests, maintain a good quality of life, and obtain the greatest possible degree of independence, autonomy, participation, personal satisfaction, and personal dignity. [1] This article focuses on formal care, which is a long-term care service provided by the community. Many scholars have carried out a series of researches on factors affecting long-term care, including physical health, economic level, family care, pension concept, medical insurance and pension insurance.

In terms of health status, some scholars believe that mental health is an important factor affecting the long-term care needs of the elderly. [2]While some scholars believe that physical health is an important factor .[3][4][5][6][7]Some scholars believe that the care needs of the elderly are affected by economic factors, and the higher the economic income, the higher the need for long-term care.[8][9]While other their scholars believe that the economic situation is negatively related to the long-term care needs of the elderly.[10]The old-age pension concept ,which means "raising children protect against old age risk" may also affect the demand for long-term care services. [11] Some scholars have shown that the elderly with the concept of "raising children and preventing old age" also have various needs for social services. But those elderly are more likely to receive informal care provided by their families, rather than formal care provided by professionals. Most scholars believe that there is a complementary relationship between family care and medical services which include long-term care services.[12][13] And other scholars believe that there is an alternative relationship between them.[14] In terms of social insurance, medical insurance and endowment insurance will also affect long-term care needs. There are few related researches on social insurance factors in China, and some foreign studies show that social insurance can increase the long-term care needs of the elderly. It can be seen that the impact of

the above factors on long-term care needs has not yet been determined.

Since western countries entered the aging society earlier, there have been more studies on long-term care issues. The construction of a long-term care service system in China has just emerged, and the level of long-term care service demand and its influencing factors need to be further explored. At the same time, the uneven development of various regions in China is prominent. Regional differences of long-term care service demand and its driving factors need further examination Based on this, this article asks the following questions: are there any regional differences in the level of long-term care needs? What factors affect the level of long-term care needs?

2.METHODS

2.1.Data collection

The data in this article are taken from the CLHLS 2014, which was hosted by the Peking University Center for Healthy Ageing and Development Research.

This article selects the need for living care, the need for medical treatment, and the need for spiritual comfort as the index variables for long-term care needs.

This article divides the causal variables into six dimensions, namely physical health, economic level, home care, old-age pension concept, medical insurance, and endowment insurance. The first is physical health. This article uses the degree of disability to represent the physical health level of the elderly. The second is the economic level. This article selects the household income variable. The third is family care. This article selects living arrangements to represent family care resources. Most studies believe that the elderly who live with their children have family care resources. The fourth is the concept of old-age pension, which means "raising children protect against old age risk". This article selects the expectation of living arrangements as a variable. The Fifth is medical insurance, which includes four different types of medical insurance, namely public medical insurance, urban employee medical insurance, urban resident medical insurance, and new rural cooperative medical insurance. Sixth is endowment insurance, includes two different forms of old-age security.

2.2.Statistical analysis

We use stata software, version 15.0, to establish a multiple linear regression analysis to describe the correlation between the explanatory variables and the explained variables. The multiple linear regression model is shown below.

$$y = \alpha_0 + \alpha_1 physical health + \alpha_2 economic level + \alpha_3 home care + \alpha_4 old-age pension concept +$$
$$\alpha_5 medical insurance + \alpha_6 endowment insurance + \varepsilon_i$$

3.RESULTS

3.1.Measurement of long-term nursing needs and analysis of influencing factors

This article uses confirmatory factor analysis (CFA) to verify whether the needs for living care, the need for medical treatment, and the need for spiritual comfort can reflect the long-term care needs of the elderly. Among

them, RMSEA = 0.00 and SRMR = 0.00, indicating that there is no significant difference between the constructed factor model and the full model; CFI = 1.000 indicates that the factor model has a higher degree of fit. The coefficient of the long-term care demand latent variable is positive and significant at the level of 0.1%, indicating that the long-term care demand has a significant positive impact on living care, medical treatment, and spiritual comfort. The higher the level of long-term care demand, the more likely it is that there will be a need for living care, a need for medical treatment, and spiritual comfort.
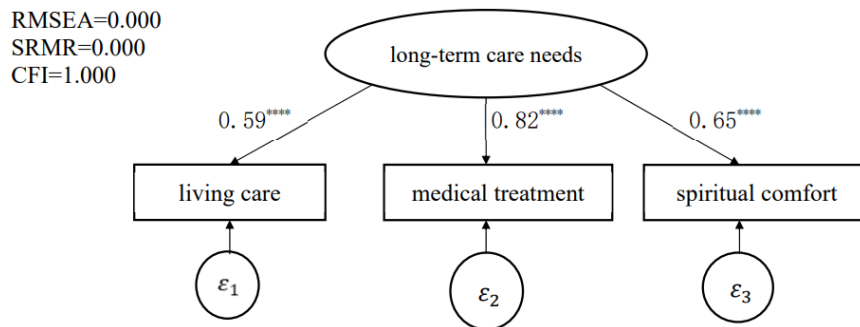
Note: "****" means significant at the 0.1% level
Figure 1 Confirmatory factor analysis (CFA) of long-term care needs

Table 1 uses the factor weighted average to calculate the level of long-term care needs in each region. The weighting coefficient is calculated based on the factor load obtained by the confirmatory factor analysis (CFA) in the previous article. CLHLS2014 contains only 23 regions, including Hainan, Henan, Guangxi, Shandong, Guangdong, Heilongjiang, Anhui, Jiangxi, Shanxi, Hubei, Sichuan, Tianjin, Jiangsu, Zhejiang, Chongqing, Hebei, Fujian, Shaanxi, Liaoning, Jilin, Shanghai, Beijing and Hunan. It can be seen from Table 1 that the level of long-term care needs varies greatly in various regions of the country. The areas with high long-term care needs are Hainan, Henan, Guangxi, Shandong, Guangdong, and Heilongjiang. Henan, Shandong, Guangdong, and Heilongjiang have serious aging conditions, so it is expected that the long-term care needs of the above regions are high; Hainan Province and Guangxi Province

account for a large proportion of elderly people over 100 years old, so their long-term care needs are also high. In CLHLS2014, the proportion of elderly people over 100 years old in Hainan Province and Guangxi Province was 13.41% and 9.48%, respectively, while that of Fujian Province was only about 1%. In addition, the long-term care needs in Beijing and Shanghai are relatively low, which may be because the health of the elderly in areas with higher levels of economic development is correspondingly higher, which makes the long-term care needs lower. According to Li Ribang's measurement of China's national health index, the health index of Beijing and Shanghai ranked first and second, respectively.[15] From the perspective of urban and rural areas, most regions show that the long-term care needs of rural areas are higher than in urban areas.

Table 1. Long-term care needs in different regions

area	Total	Urban	Rural
Hainan	4.23	3.57	3.39
Henan	3.80	2.61	3.22
Guangxi	3.39	2.84	2.67
Shandong	3.26	2.89	2.56
Guangdong	3.20	2.80	2.48
Heilongjiang	3.13	2.51	2.64
Anhui	3.07	2.44	2.69
Jiangxi	3.06	2.61	2.40
Shanxi	2.91	2.15	2.65
Hubei	2.83	2.20	2.43
Sichuan	2.82	2.31	2.37
Tianjin	2.75	2.28	-
Jiangsu	2.67	2.22	2.26
Zhejiang	2.66	2.25	2.13
Chongqing	2.66	2.22	2.16
Hebei	2.55	2.04	2.21
Fujian	2.31	1.91	1.93
Shaanxi	2.31	1.81	2.26
Liaoning	2.25	1.83	1.96
Jilin	2.18	1.77	2.17
Shanghai	1.96	1.55	-
Beijing	1.92	1.46	2.23
Hunan	1.60	1.86	1.19
Nation	3.00	2.40	2.51

Note: The number of rural elderly in Shanghai and Tianjin are 0 and 2, respectively, which are not representative

3.2. *Comparative analysis of influencing factors of long-term care needs of urban and rural elderly*

This article compares the differences between influencing factors of long-term care needs in urban and rural areas. Using the factor weighted mean method to calculate the score of long-term care needs as the dependent variable, (see Table 2). The main influencing factors of long-term care needs of urban elderly are medical insurance and endowment insurance and the concept of old-age pension; the factors influencing the long-term care needs of the elderly in rural areas are health, economy, family care, old-age pension concept, medical insurance, and endowment insurance.

In urban areas, physical health has no significant effect on the long-term care needs of the elderly. This may be due to the fact that the long-term care needs of the elderly in the cities are not only expressed in the aspects of living care and medical treatment, but also in terms of spiritual comfort. In rural areas, physical health has a significant negative impact on the long-term care needs of the elderly. The better the health of the elderly, the lower their long-term care needs are.

The long-term care needs of rural elderly are significantly affected by the status of family income, while the elderly in urban areas have not been significantly affected. This may be because the economic level of elderly people in urban areas is generally higher than that of rural areas and may be less affected by economic levels.

With regard to home care, it has a significant impact on the elderly in the rural areas, but has no significant effect on the elderly in the urban areas. This may be due to the higher level of urban elderly needs for long-term care, which family care cannot fully meet.

In terms of old-age pension concept, the elderly who have the concept of "raising children protect against old age risk" have significantly higher long-term care needs than those who do not, regardless of whether they are urban or rural elderly.

The long-term care needs of urban elderly with medical insurance are significantly higher than those without medical insurance, and the impact of medical insurance on rural elderly is not significant. This may be due to the effective relief of medical insurance in urban areas. In order to meet the burden of medical expenses for the elderly, and they put forward higher requirements. It can be seen that medical insurance can promote the long-term care needs of the elderly, and the continuous improvement of medical insurance coverage will further promote the development of the long-term care market. At the same time, the impact of medical insurance on urban elderly is more significant. It can be seen that priority should be given to providing long-term care

services in urban areas with sound medical insurance. Endowment insurance has no significant effect on the overall long-term care needs of the elderly in urban and rural areas, but has significant negative and significant positive effects on entire elderly, respectively.

Table 2. Comparison of long-term care needs of the elderly in urban and rural areas

	（1）	（2）
	Urban	Rural
Physical health	-0.010	-0.068***
	(0.47)	(3.66)
Economic level	-0.022	-0.068***
	(-0.96)	(-4.25)
Home care	-0.136	-0.136*
	(-1.65)	(-2.18)
Old-age pension concept	-0.585**	-0.541**
	(-2.76)	(-2.60)
Medical insurance	0.213*	0.147
	(2.29)	(1.46)
Endowment insurance	-0.287***	0.261***
	(-4.82)	(4.64)
_cons	3.256***	3.536***
	(11.08)	(13.66)

Note: "****" means significant at the 0.1% level, "***" means significant at the 1% level, "**" means significant at the 5% level, and "*" means significant at the 10% level.

4. DISCUSSION

Our results indicates that the long-term care demand level in different regions of China is quite different. The long-term care demand level in rural areas is generally higher than that in urban areas. Given the higher level of development in urban areas, it was hypothesized that the level of demand for long-term care should have likewise been higher. However, the data indicate that long-term care needs are higher in rural areas than in urban areas, which may be due to the fact that there are more empty-

nest elderly people in rural areas, making the level of demand for long-term care services higher. Therefore, priority should be given to providing long-term care services in rural areas.

From the comparison of urban and rural factors influencing long-term care need, the main influencing factors of the long-term care needs of the elderly in rural areas are physical health, home care, old-age pension concept, economic level, and endowment insurance. The failure of medical insurance to have a significant impact on the elderly in rural areas may be due to the low level of medical insurance that the elderly in rural areas participate in. In urban areas, the main factors influencing the long-term care needs of the elderly are medical insurance, endowment insurance, and the concept of endowment. Physical health is not a significant factor affecting the long-term care needs of the elderly as the long-term care needs of the elderly in urban areas involve not only physical health, but also mental health. Similarly, economic level is not a significant influencing factor, which may be due to the generally better economic conditions of the elderly in urban areas. Family care factors have no significant impact on the long-term care needs of the elderly in urban areas. This may be due to the higher level of needs of urban elderly people, which family care cannot fully meet. In summary, the inclination factors, enabling factors, and need factors all have a significant impact on rural elderly, while the main influencing factors of the elderly in urban areas are inclination factors and enabling factors.

According to the differences in influencing factors of long-term care needs in urban and rural areas, the priority of developing long-term care services should be given to local conditions: in rural areas, with poor health and economic level and empty nest elderly people; thus, priority should be given to long-term care services in urban areas where medical insurance is better.

5. CONCLUSIONS

According to the measurement results of long-term care needs, the long-term care needs of the elderly in rural areas are higher than those in urban areas, and further attention should be paid to the long-term care needs of rural elderly. Judging from the urban-rural differences in influencing factors, physical health, economic level, family care, pension concept and pension insurance have a significant impact on the long-term care needs of the elderly in rural areas; while the main influencing factors in urban areas are pension concepts, medical insurance and pension Insurance.

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