



The Impact of Community Home Care Services on the Health of the Elderly

Empirical Analysis Based on CHARLS2018 Data

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Abstract. Based on the data of China Health and Retirement Longitudinal Study (CHARLS) in 2018, this paper uses Logistic regression model to empirically analyze the impact of community home care services on the physical and mental health of the elderly. The results show that the proportion of elderly people aged 60 and over participating in community home care services in China is generally low, and the elderly with chronic diseases are more inclined to choose community home care services. Community home service can significantly improve the physical health level of the elderly, and also play a positive role in improving the mental health of the elderly.

Keywords: Community home care services · the elderly · health

1 Introduction

Under the background of accelerating population aging in China, how to effectively deal with the long-term challenges of aging has been faced by social and economic development. After the individual enters the aging stage, the social role changes, the physical function gradually declines, and the probability of illness increases. The health status of the elderly population is not optimistic. The continuous deepening of aging and the health burden of the elderly population will make the society face an increasingly serious risk of old age. Due to the weakening of family functions and the lack of standardization of pension institutions, the traditional family pension model and institutional pension model can not meet the service needs of the elderly. The development of community home care model combining the advantages of family, community and institution has become the optimal choice under the background of rapid aging in China.

China's community home care service system, which is based on the community, based on the home, and integrates various resources in the community to provide old-age care services for the elderly, has been initially formed, but its development still faces certain challenges. The outstanding problems such as the difference between supply and demand, the balance between payment ability and service cost hinder the high-quality and efficient development of community home care services in China, and the continuous optimization of community home care services is effectively related to the needs of the

elderly. Therefore, this paper empirically analyzes the impact of community home care services on the health status of the elderly, in order to provide decision-making reference for the development of community home care services and the improvement of the health level of the elderly.

Foreign scholars' research on the relationship between community home-based care services and the health of the elderly started earlier. Some scholars support the view that community home-based care services have a positive impact on the health of the elderly, and believe that community home-based care services have a positive effect on the quality of life of the elderly. It can promote the physical and mental health of the elderly by improving the quality of life of the elderly living alone (King et al., 2012). Some scholars also pointed out that there is uncertainty in the relationship between community home care services and the health of the elderly. When the quality of service provided can meet the needs of the elderly, the loneliness and physical pain of the elderly will be alleviated to a certain extent. When the quality of service cannot meet its own needs, it will lead to depression, physical pain perception, life pressure perception and other negative problems (Boman et al., 2016). Domestic scholars mostly study the demand and satisfaction of the elderly for community home care services, and the impact of community home care services on the life satisfaction and quality of life of the elderly. Only a few literatures have focused on this topic.

2 Literature Review and Research Hypothesis

2.1 Research Hypothesis

Health covers the individual's physical, mental and social state and exists throughout the life cycle. Michael Grossman (1972) first proposed a theoretical model of personal health and medical service demand. Grossman used the concept of investment theory to regard personal health as a capital stock that depreciates with age. The quality of the initial stock is partly congenital and the other part is acquired (Wang et al., 2008). Grossman's theoretical model points out that at least after a certain degree of age, the increase of age means the increase of health capital depreciation rate, which makes consumers have to increase investment to supplement the shortage of health capital stock. Therefore, consumers' demand for medical services will increase with the increase of health capital depreciation rate (Basch PF, 1999).

Physiological health refers to the soundness of physiological functions and the normal development of physiological functions. Community home care service can provide life care, medical care and other services for the elderly, especially the elderly, living alone, empty nest and other elderly groups, with the help of professional pension service organizations, which is a powerful guarantee for the physical health of the elderly. Mental health refers to feeling well and having a positive mental state. Community home care services are in line with the concept and habits of traditional Chinese family care for the elderly home care service for the elderly on the platform of community. On the one hand, it does not separate the original social network of the elderly, and the elderly are more likely to get a sense of security and belonging. On the other hand, the spiritual comfort, recreational activities and other services of community organizations can help the elderly to relieve psychological pressure, maintain good mood and positive

attitude. Therefore, community home care service is also an important way to maintain the mental health of the elderly. Accordingly, this paper proposes the following research hypotheses:

Hypothesis 1: There are group differences in the participation of domestic community home care services. Hypothesis 1a: The participation of domestic community home care services varies according to the condition of illness, and the elderly with chronic diseases are more inclined to choose community home care services.

Hypothesis 2: Community home care services will affect the health status of the elderly. Hypothesis 2a: Community home care services have a positive impact on the physical health. Hypothesis 2b: Community home care services have a positive effect on the mental health.

3 Variables and Methods

3.1 Variables Selection

This paper uses the 2018 China Health and Retirement Longitudinal Study (CHARLS) data for analysis. According to the research needs, this paper selects the elderly aged 60 and over who live at home as the research object, and selects the items in the questionnaire involving community home care services, physical health, mental health and other aspects. After eliminating and interpolating the missing values, 1947 basic samples were obtained.

Variable Being Explained

This paper measures the impact of community home care services on the health of the elderly from two dimensions of physical health and mental health. The first is physical health. This paper selects self-rated health as a measure of the physical health status of the elderly. Self-rated health is a subjective indicator that can comprehensively reflect the health status of individuals and can positively predict the risk of morbidity and mortality in the elderly (Idler et al., 1997). The second is mental health. In this paper, the scores of the Center for Epidemiologic Studies Depression Scale (CES-D scale) composed of 10 questions were used to investigate the mental health status. The CES-D scale is a self-assessment tool compiled by Radloff of the National Institutes of Mental Health to evaluate the current depression level of the community population. This scale has been translated and used in many countries with good reliability and validity.

Core Explanatory Variables

The core explanatory variable of this article is “whether you have received community home care services”, corresponding to the questionnaire topic “whether you have enjoyed the following home and community care services”. The options include a number of services such as pension service centers, regular physical examinations, and home visits. The variable is a dummy variable. If the sample individual chooses one or more of the services, it means that it has received community home care services. If the “none of the above” option is selected, it means that it has not received community home care services.

Table 1. Prevalence status * Have you received community home care services

			community home care services		Total
			No	Yes	
Chronic disease	No	Count	901	167	1068
		Percentage	84.4%	15.6%	100.0%
	Yes	Count	682	197	879
		Percentage	77.6%	22.4%	100.0%
Total	Count	1583	364	1947	
	Percentage	81.3%	18.7%	100.0%	

3.2 Research Methods

The explained variables include two dimensions: physical health and mental health. Among them, “self-rated health” is a dichotomous variable, and “degree of depression” is an ordinal variable. Therefore, binary logistic regression and ordered logistic regression are used respectively. The binary logistic regression model and ordered logistic regression model set in this paper are:

$$logit(P_i) = \ln\left(\frac{P_i}{1 - P_i}\right) = \alpha + \beta X_i; L_j(X) = \log \frac{P(Y \leq j|X)}{1 - P(Y \leq j|X)} = \alpha_j - \beta X$$

4 Empirical Analysis Results

4.1 Acceptance Status of Community Home-Based Care Services

Table 1 shows that in the sample with chronic diseases, 22.4% of the elderly have received community home-based care services, while only 15.6% of the non-diseased sample. The rate of receiving community home-based care services is different among the elderly groups with different disease conditions. The elderly with chronic diseases are more inclined to choose community home-based care services, which is consistent with the results of Wei Min et al. (2016). With the increase of age and the decline of physical function, the elderly are more likely to suffer from chronic diseases. For the elderly with poor physical health and long-term out-of-hospital treatment, the health care services provided by the community can meet their needs to a certain extent, so that the elderly with chronic diseases are more inclined to choose community home care services, which verifies hypothesis 1a.

4.2 The Impact of Community Home Care Services on the Health Status of the Elderly

The Impact of Community Home Care Services on the Physical Health

It can be found from Table 2 that community home care services have a significant

Table 2. Results of the impact of community home care services on the physical health

Variable	Model 1		Model 2	
	B	S.E.	B	S.E.
Age	−0.001	0.008	−0.004	0.009
Gender	0.004	0.128	−0.001	0.128
Marriage	0.259	0.136	0.271*	0.136
Residence	0.305*	0.121	0.311**	0.121
Education	0.054	0.051	0.055	0.051
Chronic disease	−1.044***	0.101	−1.066***	0.101
Explanatory Variables Community home care services			0.307*	0.127
n	1947		1947	

positive effect on the physical health of the elderly at the 0.05 level, indicating that receiving community home care services can improve the physical health of the elderly. Specifically, when other factors remain unchanged, compared with the elderly who have not received community home care services, the probability of improving the physical health level of the elderly who have enjoyed home care services is about 35.9%. The medical care services provided by the community can provide timely nearby treatment for the elderly, and can also detect and prevent diseases through regular physical examinations. Therefore, community home care services have a significant positive effect on the physical health of the elderly and improve their physical health. The above results verify hypothesis 2a.

The Impact of Community Home Care Services on the Mental Health

Community home care services have a positive impact on the mental health of the elderly at the 0.01 level, that is, compared with the elderly who have not received community home care services, the probability of the elderly receiving these services maintaining a good mental health status has increased by about 52%. To analyze the reasons, on the one hand, the medical care and other services provided by the community can improve the physical health of the elderly. Physical health helps the elderly to maintain a good attitude, thus promoting mental health. On the other hand, community home-based care services such as entertainment and spiritual comfort can help the elderly reduce loneliness, release bad emotions, and help their mental health. This result confirms hypothesis 2b (Table 3).

Table 3. Results of the impact of community home care services on the mental health

Variable	Model 1		Model 2	
	B	S.E.	B	S.E.
Age	0.019	0.010	0.015	0.010
Gender	0.304*	0.142	0.296*	0.142
Marriage	0.217	0.145	0.236	0.145
Residence	0.536***	0.148	0.545***	0.148
Education	0.225***	0.061	0.225***	0.061
Chronic disease	-0.755***	0.110	-0.780***	0.111
Explanatory Variables				
Community home care services			0.419**	0.150
n	1947		1947	

5 Conclusions

Based on the 2018 China Health and Retirement Longitudinal Study (CHARLS) data, this paper explores the impact of community home care services on the physical and mental health of the elderly. The study found that: (1) The proportion of the elderly aged 60 and above receiving community home care services is generally low, and the elderly with chronic diseases are more inclined to choose community home care services. (2) Community home care services can significantly improve the physical health of the elderly, while the mental health of the elderly has a significant improvement, reducing the tendency of the elderly suffering from depression.

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