Analysis of The Use Data and Influencing Factor Model of Community Elderly Care Services for Empty-Nest Elderly

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ABSTRACT

Due to the deepening of aging and the change of family structure, the number of empty-nest elderly in my country has been increasing year by year, which is accompanied by serious pension problems. The community elderly care service has alleviated the old-age dilemma of the empty-nest elderly to a certain extent. Therefore, it is of great significance to study the influencing factors of the empty-nest elderly on the use of community elderly care services. Based on the 2018 China Aging Social Tracking Survey (CLASS) data, this paper uses Spearman correlation analysis and binary logistic model to explore the influencing factors and influencing mechanisms of empty nesters using community care services, and based on this, it is necessary to improve community care services. Provide reference and suggestions to improve the utilization rate of community elderly care services, in order to meet the elderly care needs of empty nesters and effectively alleviate the plight of empty nesters.

Keywords: Empty-nest elderly, Community elderly care service, Influencing factor model

1. INTRODUCTION

Empty-nest seniors can be interpreted as seniors over 60 years old who live alone without their children. With the continuous improvement of the national lifestyle, the life expectancy of the population is prolonged, the degree of aging is becoming more and more serious, and the "empty-nest" characteristics of the elderly are becoming increasingly prominent. According to statistics, there will be 118 million empty nesters in 2020, and it is estimated that by 2030, there will be more than 200 million empty nesters. In the seventh census, the population aged 60 and above exceeded 260 million, accounting for more than 18.7%, of which empty nesters accounted for nearly half. This brings new challenges to the development of elderly care services. As a new type of socialized elderly care service, community elderly care service is the key support for the elderly in the future. Community pension services not only meet the needs of the elderly, but also make up for the weakening of family pensions and the inconvenience of institutional pensions for the special group of empty nesters. However, most empty-nest elders still use community elder care services infrequently when it is difficult to obtain family care, comfort and services.

Therefore, based on the 2018 China Elderly Society Tracking Survey (CLASS) data, this paper analyzes the data on the use of community elderly care services for empty-nest elderly, and further explores the factors that affect the use of community-based elderly care services for empty-nest elderly, in order to propose feasible solutions for the development of community elderly care services. Improve the countermeasures in order to facilitate the empty-nest elderly to obtain more accurate elderly care services.

2. RESEARCH HYPOTHESES AND RESEARCH METHODS

2.1 Research Basis and Hypotheses

This paper divides the influencing factors of empty nesters' use of community care services into three dimensions: physical and mental health factors, family structure factors and socioeconomic status factors.

Community pension has changed the traditional concept of "family pension, raising children to prevent old age", and provided more diversified choices for the modern elderly. Some scholars [3] believe that age and physical health are the main factors that affect the choice

of old-age care methods for the elderly. The older the age and the higher the degree of illness, the more inclined to choose the old-age service with professional medical services and all-round life care. And the mental health of the elderly, especially empty nesters, is more of a concern [1]. For family structure factors, intergenerational support is still the core element in the elderly care process [4]. Socioeconomic status also affects the use of community elderly care services for the elderly. High-income elderly people will choose to purchase personalized elderly care services to provide targeted services for themselves [2]. And with the further improvement of social security in my country, not only the economic level of the elderly has been improved, but also the dependence of the elderly on intergenerational support has been reduced, thereby increasing the elderly's demand for community elderly care services [5]. Based on the above related research, this paper proposes the following hypotheses:

H1: The poorer the physical and mental health of empty nesters, the more frequently they use community elderly care services.

H2: The less support the empty nesters receive from their families, the more inclined they are to use community-based care services.

H3: The poorer the economic situation of the empty-nest elderly, the more they will choose community elderly care services.

2.2 Data Sources

The research data in this paper comes from the 2018 Chinese Aged Social Tracking Survey (CLASS) of Renmin University of China. The survey project is highly extensive and continuous, making the research results more objective and scientific.

This article is screened by specific conditions: According to the above definition of empty-nest elderly, that is, the elderly who live alone over the age of 60 and have no children by their side, combine A2, A8, and A9-1, of which A8 selects 1-2 (living alone) or living with 1 person), A9-1 option 1 (living with spouse). After screening and deleting the failed samples, a total of 5023 samples across the country were finally selected for in-depth research.

2.3 Variable Definition

The dependent variable of this paper is whether the empty-nest elderly use community elderly care services. Based on the CLASS questionnaire, questions related to the use of community elderly care services are screened out, with a total of 9 items (D12-2-1 to D12-2-9). Defining whether empty nesters use elderly care services

The independent variables selected in this paper are the influencing factors of empty nesters' use of community-based elderly care services, which are analysed from three dimensions: physical and mental health, family structure, and socioeconomic status, including a total of 13 independent variables.

The specific variable description assignment is shown in Table 1.

Table 1 Variable Definition and Assignment

variable category	variable	variable description
dependent variable	whether to use community aged care services	0=no; 1=yes
independent variable		
physical and mental health	age	0 = young and middle-aged seniors; 1 = seniors
	gender	0=male; 1=female
	self-assessed health status	0=unhealthy; 1=healthy
	Activities of Daily Living (ADL)	1 = fully self-care; 2= Moderately unable to take care of themselves; 3 = Severely unable to take care of themselves
	Whether to have chronic disease	0=no; 1=yes

family structure	mental health	0=unhealthy; 1=healthy
	marital status	0=no spouse; 1=married with spouse
	number of living children	0 = no children; 1 = only child; 2 = many children
	family relatives help	0=less; 1=more
socioeconomic status	education level	1=Elementary school and below; 2 = junior high school; 3=College degree and above
	annual household income	1 = low income level; 2 = middle income level; 3 = high income level
	main source of income	1 = economic independence; 2 = Sponsored by relatives; 3=Government grants
	old age security	0=no; 1=yes

2.4 Empirical Analysis

This paper firstly conducts Spearman correlation analysis on the dependent variable and the independent variable, which is a correlation relationship that measures the dependence of two rank variables. The dependent variable (whether empty nesters use community care services) and 13 independent variables in this study are all hierarchical variables, which meet the research conditions of Spearman's correlation coefficient. Its specific formula is:

$$\rho = 1 - \frac{\sum_{i=1}^{n} d_i^2}{n(n^2 - 1)}$$

(1)

Among them, n is the number of research samples, d is the level difference between the independent variable and the dependent variable, and ρ is the correlation coefficient, which indicates the direction and degree of correlation between the dependent variable and the independent variable.

The dependent variable in this study is whether the empty nesters use elderly care services, which is an independent binary variable. Therefore, a binary logistic regression model is used to analyse the influence of physical and mental health, family structure, and socioeconomic status on the use of community elderly care services by empty nesters. The specific formula of the model is:

$$Logit(p) = Ln\left(\frac{p}{1-p}\right) = \beta_0 + \beta_i X_i + \varepsilon$$

(2)

In the formula, p represents the probability of using community elderly care services, 1-p represents the probability of not using community elderly care services, and the ratio is the use occurrence ratio. X_i represents the influencing factors on the use of community elderly care services, that is, independent variables, β_i is the regression coefficient of each variable; β_0 is the regression intercept term.

3. RESEARCH RESULT

3.1 Correlation analysis

The dependent variables and independent variables of this paper are included in the Spearman correlation analysis model for testing to determine the correlation between the variables. The specific results are shown in Table 2.

Table 2 Correlation analysis

variable category	variable	Correlation coefficient r	significant P
physical and mental health	age	-0.004	0.778
	gender	-0.023	0.110
	self-assessed health status	0.053**	0.000
	Activities of Daily Living (ADL)	0.085**	0.000
	Whether to have chronic disease	0.038**	0.007
	mental health	0.159**	0.000
family structure	marital status	-0.020	0.160
	number of living children	-0.106**	0.000
	family relatives help	-0.143**	0.000
socioeconomic status	education level	0.018	0.208
	annual household income	-0.055**	0.000
	main source of income	0.057**	0.000
	old age security	0.043**	0.002

Note: *** p<0.001, ** p<0.01, *p<0.05

According to the results of the Spearman correlation test, the significant P values of age, gender, marital status, education level and whether the empty nesters use community pension services are all greater than 0.05. Therefore, the above independent variables are related to the use of community pension services for empty nesters There was no correlation between services and no further research was needed in subsequent regression analyses.

Based on the results of the correlation analysis, this paper selects 9 independent variables included in the three categories of physical and mental health, family structure, and socioeconomic status for in-depth research in the regression analysis, and divides them into three models according to the variable categories for stepwise regression analysis. The specific research results are shown in Table 3.

3.2 Binary logistic regression analysis

Table 3 Model regression analysis of the current situation and influencing factors of empty nesters using community elderly care services

Variable (reference group)	Model I	Model II	Model III
Self-rated healthy (unhealthy)	0.697***	0.689***	0.657***
Activities of daily living (completely independent)			
Moderate	0.688***	0.693***	0.696***
severe	2.256***	2.148***	2.095***

have a chronic disease (no)	0.332***	0.311**	0.263**
mental health (unhealthy)	0.936***	0.948***	0.937***
Number of living children (none)			
only child		-0.513*	-0.466*
many children		-0.898***	-0.816***
Help from family and relatives (less)		-0.842***	-0.840***
Annual household income (low income)			
medium income			-0.518**
High income			0.189
Main source of income (financial independence)			
Relatives Sponsor			0.233**
government subsidy			0.352**
Old age security (none)			0.358**

Model I only considers the direction and degree of influence of physical and mental health factors on the use of community care services for empty nesters. The correlation coefficients of self-assessed health status, ability of daily living, chronic diseases, and mental health were all positive numbers. Compared with empty-nest elderly who are completely self-care in daily life, those who are moderately unable to take care of themselves and severely unable to take care of themselves are more inclined to use community elderly care services to meet their daily needs. Empty-nest seniors with multiple chronic diseases need community health care services more than those without chronic diseases, assuming that H1 is partially validated. On the contrary, mental health problems, as the health problems that empty nesters are more prone to suffer from, have a significant positive correlation with the use of community elderly care services by empty nesters, that is, the better the mental health of the elderly, the more frequently they will use community services Aged care services, participation in community activities, etc. This is contrary to the part corresponding to hypothesis H1.

Model II takes into account physical and mental health factors, and adds the impact of family structure

factors on the use of community-based elderly care services for empty-nest elderly. According to the data results, it can be found that among the physical and mental health factors, the significance of the independent variable "whether suffering from chronic diseases" has slightly decreased, and the significance of other variables has not changed, indicating that the model 1 has a certain robustness. Among family structure factors, the number of surviving children and the help of family relatives have a significant negative impact on the use of community-based elderly care services for empty-nest elders. Hypothesis H2 is verified.

In Model III, the influence of socioeconomic status on the use of community care services for empty nesters is newly added. Compared with the second model, the correlation coefficient and significance of all variables in this model have not changed. Among the factors of socioeconomic status, middle-income households were significantly negatively correlated with the use of community-based elderly care services by empty nesters, while high-income households had no significant correlation with them. There is a significant positive correlation between empty nesters and their use of community pension services; pension security is

positively correlated with empty nesters' use of community pension services. Suppose H3 is validated.

4. CONCLUSION AND SUGGESTON

The study found that empty-nest elders with poor physical health and better mental health use community elder care services more; empty-nest elders who lack the help of relatives are more inclined to use community elder care services; The use of community elderly care services is less; in addition, the increasing level of elderly care security has also increased the use of community elderly care services by empty nesters. In order to further make use of community elderly care services to make up for the lack of empty-nest elderly care, improve the utilization rate of community elderly care services, and ensure the old age of empty-nest elderly, this paper believes that it should be improved from the following points.

First, introduce a market-oriented mechanism to further divide community elderly care services into basic services and market services. On the one hand, the government and social organizations ensure the supply of basic services, provide basic services such as daily care, medical care, and social participation for the empty-nesters, and do a good job of supporting the elderly; on the other hand, actively introduce market-oriented mechanisms to develop Personalized, customized and professional elderly care services, in order to meet the needs of empty nesters of different economic levels and improve the utilization rate of community elderly care services.

Second, improve the accessibility of community-based elderly care services for empty-nest elderly. First of all, it is necessary to change the traditional thinking of empty-nest elderly, publicize community elderly care services through online and offline information dissemination platforms, and deepen empty nesters' correct understanding of community elderly care services. Secondly, the government should pay attention to the status quo of empty-nest elderly and provide corresponding subsidies for the elderly in financial difficulties. Finally, call on children to provide material and spiritual help for empty nesters, give full play to the role of intergenerational support, and enable empty nesters to obtain more pension resources.

Third, innovate the community pension service model. Use Internet technology to create an information integration and transfer platform to integrate basic information such as resources, funds, and materials of service entities and demand entities. According to the basic information of empty nesters, intelligent means are used to accurately assess the needs of empty nesters and provide targeted services; service subjects can also adjust service content in a timely manner according to the needs of the elderly to meet the actual needs of more elderly people. need.

REFERENCES

[1] Chang, Y.N. (2021) Research on the willingness and influencing factors of the elderly community pension service demand D. Chongqing Technology and Business University.

[2] Du, P., Sun, J.J., Zhang, W.J., Wang, X.H. (2016) The pension needs of the elderly in China and the status quo of family and social pension resources: An analysis based on the 2014 China Elderly Social Tracking Survey J. Population Research 6:49-61.

[3] Noriko Tsukada, Yasuhiko Saito. (2006) Factors that affect older Japanese people's reluctance to use home help care and adult day care services J .Journal of Cross-Cultural Gerontology. 3:121-137.

[4] Shang, Q.S., Zhao, Y.F. (2022) Intergenerational support, social security and choice of old-age care mode for rural residents——Empirical analysis based on CHARLS data J. Scientific decision-making 02:68-79.

[5] Yang, W., etc. (2014) Demand for home-based care services and its influencing factors among urban community residents J. Journal of Kunming Medical University 4:46－49 .