

# The Impact of Living Arrangements on Medical Services' Utilization among the Elderly

## —An Empirical Analysis Based on CHARLS2013

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### Abstract

Based on the second wave's database of China Health and Retirement Longitudinal Study, this paper uses binary logistic regression to analyze the impact of the living arrangements on the medical services' utilization among the elderly. The results show that: 1) The residential types have different influence on different medical services. 2) The number of cohabitants has a positive impact on the therapeutic medical services. 3) Living distance between the older people and their children also has opposite effect between the preventive and therapeutic medical services. In order to reduce the prevalence of the elderly and improve their health services utilization, offspring should pay more attention to the elderly's life, providing more material and spiritual support.

### Keywords

The Utilization of the Medical Services, Living Arrangements, The Elderly, Binary Logistic Regression

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## 1. Introduction

Nowadays, China has stepped into an aging society and faces the reality of the excessively large number of elderly population and the accelerating growth rate. With the increasing number of elderly people, the demands for medical services from the elderly whose physical functions and immune system are deteriorating become urgent. The health care issues of the elderly people in both urban and rural areas have become the focus of social concern. With the advent of an aging society, raising the utilization of medical service by the elderly, ensuring their health, and improving the level of medical facilities and medical services have become priorities in dealing with aging. In 2009, the government's new round of

medical reform was formally launched in an effort to achieve equalization of the nation's medical services, making "the patients can be treated and the elderly can be healed" come true.

It has been founded that the individual sociodemographic characteristics (such as age, gender, household registration, education level, occupation); the accessibility to medical services (such as the distance to the hospital, the income level, the medical insurance); and the individual health conditions (such as the self-assessment of health, the chronic diseases, lifestyles), all have significant impacts on the use of medical services by the elderly [1] [2] [3] [4].

The concept of family is particularly strong in China. The task of old-age care services is mainly provided by families. Especially in rural areas, the thought of "Bring up children for the purpose of being looked after in old age" is extremely serious. Through living with their children, many elderly people receive direct material support, daily life care. Therefore, living arrangements are important ways of affecting children's care and support for the elderly, which have an significant influence on the medical services utilization among the elderly. With this regard, analysing the impact of residential arrangements on the use of medical services is an important part of improving the utilization of medical services and the health of the elderly. Thus, this paper focuses on what impacts do the residential arrangements have on the use of medical services for elderly? Are they promoted or hindered? Are there any differences between different types of medical services?

## 2. Literature Reviews

The family's living arrangements are the result of family interaction and become an important issue in sociology and anthropology gradually. According to the existence studies, living arrangements are broadly divided into the following categories: living alone, cohabiting with a spouse, cohabiting with children, cohabiting with grandchildren, and cohabiting with the others [5]. The influential factors of the use of medical services are mainly divided into three categories: Firstly, the level of economic income which includes family and individual socio-economic status, and inter-generational money transfer [6] [7]; Secondly, the medical insurance [8] [9] [10], and thirdly, the unequal use of medical services [11].

With the continuously deepening of scientific research, more and more scholars have taken the family's living arrangements as important influencing factors of the medical services usage. Scholars payed much attention on the studies that the living arrangements have directly impact on elderly's health status, the support from children, the quality of life, the mental health, the risk of death and so on [12] [13] [14], but there are still a lot of things to do in the area of the elderly residential arrangements. Most of the current studies focus on the impact of residential arrangements such as cohabiting with a spouse and cohabiting with children on medical services for the elderly. Gong Xiuquan analyzed the thera-

peutic and preventive services for the elderly by using the Tobit model and the Logistic model. He divided the living arrangements into four aspects: the number of people living in the same household, cohabiting with a spouse, cohabiting with children, and having a home-sitter, and it found that living alone, cohabiting with a spouse, and cohabiting with children can significantly affect the use of medical services [15]. In the study of residential arrangements for the elderly, Zhou Lv, Sun Qian and Sun Hanjun pointed out that the number of surviving children and the distance with them will influence the old people's use of medical services to a certain extent.

However, there are still some deficiencies in the study of the use of medical services which influenced by the living arrangements: 1) The definition of living arrangements, It was incomplete to divided living arrangements into living alone, living with a spouse, living with children, living with home-sitter, because there is no consideration of other types of living such as intergenerational cohabitation which cannot comprehensively summarize the general living situation of our country. China's rural labor forces have migrated to towns on a large scale, adults are lacking of the necessary time and economic conditions to take care of their children, which resulted the appearance of many left-behind children and Skip-generation raising. At the same time, due to the different location of the children's residential and work place, simply classifying the types of residence as living or not cannot completely explain the use of the elderly's medical services, so an addition of the living distance between the old people and their children is required. 2) Most of the researches focus on the use of out-patient and in-patient treatment medical services, and do not take the preventive medical services such as physical examination into consideration. There are quietly different between preventive and therapeutic medical service. Therefore, on the basis of existing researches, this paper will add the types of residence and the distance of residence to the living arrangements to analyze the on the use of medical services among the elderly and the differences between preventive medical services and therapeutic medical services.

### **3. Data Sources and Variable Measurements**

#### **3.1. Data Sources and Sample Profiles**

The China Health and Retirement Longitudinal Study (CHARLS) aims to collect a high quality nationally representative sample of Chinese residents ages 45 and older to serve the needs of scientific research on the elderly. The baseline national wave of CHARLS is being fielded in 2011 and includes about 10,000 households and 17,500 individuals in 150 counties/districts and 450 villages/resident committees. This paper focuses on the elderly's utilization condition of the medical services and the impetus and barriers of it. A total of 3704 old people are collected from the second wave of CHARLS which excludes the respondents younger than 60 years old, the missing data, the incomplete information, and extreme values.

From the household registration status, there are 843 non-agricultural households elderly and 2861 rural old age residents, accounting for 22.8% and 77.2% of the total sample respectively. From an age point of view, 2405 elderly people aged 60 - 69 years old, 1068 aged 70 - 79 years old, and There were 231 people aged 80 - 100, accounting for 65%, 28.8%, and 6.2% respectively. From a gender perspective, 2034 males old people accounted for 55% and 1670 females accounted for 45% of the total samples.

## 3.2. Variables

### 3.2.1. Independent Variables

This paper examines the impact of residential arrangements on the use of medical services among the elderly people. It divided the independent variables into three dimensions: the number of cohabitants, the types of residence, and the distance between elderly people and their children. 1) The types of residence, the types of residence are consisted by living alone (record cohabitation as 0, living alone as 1) and cohabiting with others. There are three kinds of cohabitation: cohabiting with a spouse: (record cohabiting with a spouse as 1, otherwise 0), cohabiting with children (record cohabiting as 1, otherwise 0), cohabiting with the grandchildren (record cohabiting as 1, otherwise 0). 2) The number of cohabitants, based on questionnaires “the current living status of the children”, the respondents’ own marital status, and the care and living conditions of the grandchildren, added all types of people to obtain the total number of cohabitants. 3) Distance to the residence of the elderly and children who are not living together. According to the questionnaire, “Currently, [where the child’s name] lives”, the options “this home and not economically independent”, “in this home, but financially independent”, “in the same yard or adjacent to you” are recorded as cohabiting with the aged. The option “Your place of residence in the village/community room”, “Other villages/communities in the county/city/district you live in”, In order to ensure the stability of the data, this paper transfers the form of distance into the logarithm of the average distance.

### 3.2.2. Control Variables

According to Anderson’s model of medical service utilization, the factors affecting the utilization of the medical services in rural areas can be summarized as potential factors, including age, education level, marital status and so on factors; Precipitating factors, the factors that individuals with access to medical services, including the distance, medical insurance, income and so on; Required factors, contain the health or illness conditions and Self-assessment of health.

1) Potential factors: a) Age, continuous variable. Considering that age may have a quadratic effect, this paper uses the age squared variable. b) Marital status, dummy variables (unmarried = 0, married = 1). For the convenience of statistics, this paper classifies unmarried, divorced, bereavement and other situations as “unmarried”. c) Education background, according to the number of years of educated, no formal education is recorded as 3, Elementary school rec-

orded as 6, Middle school recorded as 9, High school and above recorded as 12. d) Gender, record male as 1, female as 0. e) Household registration, agricultural household registration is recorded as 1, and non-agricultural as 0.

2) Precipitating factors, a) Income, the proportion of elderly people who have income in the sample is small, and most of the elderly people do not have income. Therefore, the income here is set as a dummy variable, that is, if the aged have income, then recorded as 1, If not recorded as 0. b) Medical insurance, with medical insurance recorded as 1, and no medical insurance recorded as 0.

3) Required variables, a) Self-assessment of health status, this question is divided into two groups of questions in the CHARLS questionnaire. This article combines the answers of the two questions. The options include “Excellent, Good, Good, Fair, Bad, It’s not very good”. “Fine, good, and good” are defined as being in good health, with an assigned value of 2, “general” are defined as a general physical condition with a value of 1; “bad, very bad” are defined as a poor physical condition, assigned a value of 0; Whether there are chronically disease, if the respondent has chronic disease, we record it as 1, if not, record it as 0.

### 3.2.3. Dependent Variables

The dependent variables of this paper are the utilization of medical services for the elderly, which is divided into preventive medical services and therapeutic medical services. This paper divides therapeutic medical services into out-patient services and in-patient services. In the CHARLS questionnaire, the question related to preventive medical services is “When did you get the most recent regular medical check-up”; and therapeutic medical services related questions involved “Over the past month, did you go to a medical institution to see an outpatient service or receive a medical service” “In the past year, have you lived in hospital?” The following **Table 1** shows the questionnaire structure and items.

## 4. Research Design

### 4.1. Research Hypothesis

In the background of rapid outflows of current rural labor in China, living arrangements and intergenerational support are important factors which affecting the accessibility of elderly people’s use of medical services [16]. Living patterns reflect the formation of families, thus, the family’s interactions are determined at the structural level. And the living arrangements are consisted of the types of living, the number of cohabitants, and the distance to the children living separately. The aged can obtain different support through living arrangements, which directly resulted in different effects on the utilization of medical services, the arrangements of living has a significant impact on the use of medical services by old people.

The types of residential arrangements imply the exchange relationship between the elderly and their offspring, such as time, money, and mutual support,

**Table 1.** The structure and content of questionnaire.

Variable	Dimension	Question	
<b>Dependent variable</b>	Preventive medical service	When did you take the last physical examination?	
	Therapeutic medical service	<b>Out-patient care:</b> in the past month have you visited a public hospital, private hospital, public health center, clinic, or health worker's or doctor's practice, or been visited by a health worker or doctor for outpatient care? <b>In-patient care:</b> Have you received inpatient care in the past year?	
<b>Independent variable</b>	The types of residence	Living alone	What is your marital status?
		Living with children	Have you ever given birth to any child? If yes, how many are currently living?
		Living with spouse	Have you ever adopted or fostered any child or step child? If yes, how many are currently living?
		Living with grand-children	Where does this child normally live now?
	The number of cohabitants	Did you spend any time taking care of your grandchildren or great-grandchildren last year?	
	Distance to the residence	Approximately how many weeks and how many hours per week did you spend last year taking care of this child's children or grandchildren?	
<b>Control variable</b>	Potential factors	When were you born?	
		What is your current HuKou status?	
		What is the highest level of education you have attained?	
	Precipitating factors	Are you the policy holder/primary beneficiary of any of the types of health insurance listed below?	
		Did you receive any wage and bonus income in the past year?	
	Required variables	Would you say your health is excellent, very good, good, fair, or poor? Would you say your health is very good, good, fair, poor or very poor? Have you been diagnosed with [conditions listed below, read one by one] by a doctor?	

which resulted in different allocations of human and financial resources. Therefore, different types of living arrangements will stimulate or impede the use of medical services by the elderly. So we conclude the first hypothesis as follow:

H1: The types of living and medical services utilization among the elderly are correlated. Different types of living arrangements have different effects on the use of medical services among the elderly.

Compared with western countries, social security system still needs improvement in China, and the awareness of "raising children for the purpose of being looked after" is deeply entrenched. Despite the continuous improvement of our social security work in recent years, the elderly have to rely more on their offspring. Older people live with their children mainly because they can receive personal care or emotional comfort [17]. Through cohabiting with their children, senior citizens can receive direct daily care and financial support. The study also shows that cohabiting with children have significantly increased the use of medical services by the elderly. Therefore, there comes the hypothesis:

H1a: Living with children can significantly affect the use of medical services among the elderly.

Under the multiple backgrounds of accelerating population aging, the transformation of society and rapid urbanization, skip-intergenerational raising has become a common social trend [18]. In rural areas, intergenerational cohabitation is a common phenomenon, and older people become the major roles of taking care of grandchildren, they should not only care about daily life, but also undertake the responsibility of education which has a greater demand for the physical and mental health toward the aged [19]. Whether raising the third generation or not plays an important role in the utilization of medical services by the elderly. The elderly people who cohabit with grandchildren will have more use of medical services than those who not. Therefore,

H1b: Whether cohabitating with grandchildren has a significant impact on the use of the elderly's medical services.

With the increasing age, mental and physical needs become more urgent. If there are a larger number of cohabitants, elderly people would obtain more care services, emotional support, and material support, which can also lead to more use of medical services among the elderly people. Gong Xiuquan's study on residential arrangements found that the use of medical services by the aged cohabiting with others is significantly higher than that of elderly living alone. Therefore, it can be concluded that the hypothesis 2 as follow:

H2: The number of cohabitants is positively correlated with the use of medical services by the elderly, and the larger number of cohabitants, the medical services will be used more frequent.

Lou Shengming, Chen Jieming, and Yang Shanhua suggested that the residential arrangements with their children can enable older people to enjoy more daily care, while Separation, to a certain extent, affects children's care and emotional support for their parents' daily life [20], Living apart will have different degrees of influence on the care and support of the elderly in life. Special attention should be paid to the distance of residence between the elderly and their children, and there is a significant correlation between the distance of residence and the frequency of contact and help [21]. Therefore, Hypothesis 3:

H3: The distance of residence has a significant impact on the use of medical services among the elderly.

## 4.2. Model Selection

The Rand Laboratories put forward the two-part model to analyze the influential factors of medical service utilization in 1982, which set the medical service utilization into two parts, the first one is the out-patient probability model, the second is the medical expenses model. In the basis of two-part model, the four-part model took in-patient into consideration, and widely used in many research. However, medical services are divided into preventive medical services and therapeutic medical services. Therefore, this paper uses the probability model of the four-part model.

For the use of preventive medical services, this paper selects the question

“whether the elderly had participated in physical examinations in the last two years” as the reflection of preventive medical service utilization and adopts the probabilistic model of physical examination. It is expressed by the following formula.

$$1) \text{ Physical Examination Probability: } I_{1i} = \alpha_1 X_i + \varepsilon_{1i} \quad \varepsilon_{1i} \sim N(0, 1)$$

$I_{1i}$  indicates that in the physical examination service, the physical examination probability of the number  $I$  old people,  $X_i$  means the characteristic variables of number  $I$ ,  $\varepsilon_{1i}$  means Random disturbance.

For the analysis of the elderly’s use of therapeutic services, the dependent variables are dichotomous with a value of 0 or 1, so binary Logistic models are applied for the relevant regression. This paper combines the actual conditions of the use of medical services and analyzes the use of therapeutic medical services in two models. First, whether the elderly use the probabilistic model of out-patient services; second, whether the elderly use the probabilistic model of in-patient services, and the two models are represented by the following two formulas.

$$2) \text{ Out-patient Probability: } I_{2i} = \alpha_2 X_i + \varepsilon_{2i} \quad \varepsilon_{2i} \sim N(0, 1)$$

$$3) \text{ In-patient Probability: } I_{3i} = \alpha_3 X_i + \varepsilon_{3i} \quad \varepsilon_{3i} \sim N(0, 1)$$

$I_{2i}$  and  $I_{3i}$  represent the utilization probabilities of the physical examination service and hospitalization service.  $X_i$  indicates the characteristic variables of number  $I$ .  $\varepsilon_{2i}$  and  $\varepsilon_{3i}$  are random disturbances. Only if  $I_{2i} > 0$ ,  $I_{3i} > 0$ , out-patient medical expenses and in-patient medical expenses would be incurred. In this paper, the binary logistic models are used to perform the regression analysis on the probability of physical examination, out-patient probability, and in-patient probability.

## 5. Regression Results and Analysis

In order to have a complete understanding of the sample, this paper makes a descriptive statistical analysis of the main variables at the first, and then uses correlation analysis to test whether each variable is significant or not. Finally, binary logistic regression is used to analyze whether residential arrangements have impacts on the use of medical services among the elderly. The descriptive statistics of variables is listed in **Table 2**.

In order to ensure that there are mutual influences among the measured variables, the correlation analysis of the main variables is performed in this study. The results are shown in the table below, which indicates that there are different degrees of correlation between the three dimensions of living types, cohabitation, living distance, and medical services utilization.

### 5.1. Regression of Preventive Medical Service Utilization Probability Model

The physical examination probabilistic model estimates the impact of residential arrangements on the elderly’s utilization in physical examination in the last two

**Table 2.** Variables and descriptive statistics.

Variable	Variable description	Mean	Standard deviation
<b>Dependent variable</b>			
Physical examination probability	Yes = 1 (1832) No = 0 (1872)	0.49	0.500
Outpatient probability	Yes = 1 (890) No = 0 (2814)	0.24	0.427
Inpatient probability	Yes = 1 (587) No = 0 (3117)	0.16	0.365
<b>Independent variable</b>			
Living alone	Yes = 1 (441) No = 0 (3263)	0.12	0.324
Cohabitation:			
Living with spouse	Yes = 1 (2553) No = 0 (1152)	0.69	0.463
Living with children	Yes = 1 (1572) No = 0 (2132)	0.42	0.494
Living with grandchildren	Yes = 1 (1575) No = 0 (2130)	0.43	0.494
Ln (living distance)	---	4.49	1.35
The number of cohabitants	---	2.31	2.095
<b>Control variable</b>			
<b>Potential factors</b>			
Sex	Male = 1 (2034) Female = 0 (1670)	0.55	0.498
Age	Aged 60 ~ 69: 2405; aged 70 ~ 79: 1068; aged 80 ~ 100: 231	73.82	8.098
Education level	Primary school below: 2001; Primary school: 940; Middle school: 480; High school: 216; High school above: 67	5.29	3.040
Marital status	Married: 2690; Unmarried: 1014	0.73	0.446
HuKou	Agriculture = 1 (2861) Non-agriculture = 0 (843)	0.77	0.419
<b>Precipitating factors:</b>			
Income	Yes = 1 (3318) No = 0 (386)	0.10	0.306
Medical insurance	Yes = 1 (3669) No = 0 (35)	0.99	0.097
<b>Required factors:</b>			
Self-assessment health	Poor = 0 (1034) Fair = 1 (1803) Good = 2 (867)	0.95	0.715
Chronic disease	Yes = 1 (2711) No = 0 (993)	0.73	0.443

years. In control of variables such as gender, age, education level, income, Hu-Kou, self-assessment health, and chronic disease, it is found that there is no significant correlation between the number of cohabitants in residential arrangements, the distance of residence, and the use of physical examination services. Among the types of residence, there is no significant difference in the use of physical examination services between the elderly living with a spouse and the elderly who do not live with a spouse. However, whether they cohabit with their children and whether they cohabit with their grandchildren have significant impacts on the use of physical examination services by the elderly.

After performing a binary logistic regression on the model, we obtain  $\chi^2 = 182.826$  and  $p = 0.000$ , which indicates that the model passes the comprehensive test and it makes sense to use probabilistic models for preventive medical service use. Hosmer and Lemeshow tests show that  $\chi^2 = 1.972$ ,  $p = 0.982$ , which indi-

cates that the model has a good fitting degree. On the basis of controlling a series of variables, the model regression found: 1) Whether cohabiting with children or not significantly affects the use of physical examination services by the elderly ( $B = 0.215$ ,  $P < 0.05$ ). Older people who do not live with their children use the medical examination service more frequently than the elderly who live with their children. 2) Whether cohabiting with grandchildren will significantly affect the use of health check services by the elderly ( $B = 0.186$ ,  $P < 0.05$ ). Compared with older people who live with grandchildren, elderly people who do not cohabit with grandchildren have the higher using rate of physical examination services. This possible explanation is that families with poorer economic conditions in China have higher probabilities of living with their adult children and future generations, older people live with their adult children as common especially in rural areas. Similarly, older people who live with the third generation take more care of grandchildren, while older people spend more time on caregiving, therefore have lower utilization rates for physical examination services than older people who live with grandchildren. Previous studies have also shown that if the economic conditions become better, the likelihood of living together will be lower; on the contrary, the worse the economic conditions, the higher the likelihood of living together will be [22]. 3) The living distance is negatively related to the use of the elderly medical examination service ( $B = -0.045$ ,  $P < 0.1$ ), and the elderly who do not live with their children have the lower rate of physical medical service utilization. The longer distance between elderly people and their children, the lower use of medical services by the elderly will be. This result is in line with the reality that our children support the elderly and medical care for the elderly.

## 5.2. Regression Results of Therapeutic Medical Services

### 5.2.1. Regression Results of Out-Patient Probability Model

Out-patient probabilistic model regression results show that the regression is significant ( $\chi^2 = 123.284$ , and  $P = 0.000$ ) and its fitting degree seems good ( $\chi^2 = 7.977$ ,  $P = 0.436$ ). On the basis of controlling the series of variables, the out-patient probabilistic model finds that 1) the number of cohabitants has a significant effect on the choice of outpatient services by the aged ( $B = 0.043$ ,  $P < 0.1$ ), The larger number of people living together, the more emotional and material support will be provided to the elderly, which stimulates the elderly to opt for more out-patient service. Therefore, there is a positive correlation between the number of cohabitants and out-patient medical service utilization. 2) The living distance between the aged and their children is positively related to the degree of utilization of outpatient service by the elderly ( $B = 0.069$ ,  $P < 0.05$ ). Due to the higher time and opportunity cost for older people to meet with their children, the aged do not live with their children will receive less material and spiritual care. It is difficult for children who are farther away to provide daily care for the elderly, and thus the probability of the elderly getting sick is high-

er, and turning to more use of outpatient services. So, the farther distance between the elderly and their children, the higher probability of out-patient medical service utilization will be.

### 5.2.2. Regression Results of In-Patient Probability Model

In the regression of the in-patient probabilistic model, a comprehensive test of model coefficients ( $\chi^2 = 74.755$ , and  $P=0.000$ ) and Hosmer and Lemeshow ( $\chi^2 = 8.262$ ,  $P = 0.408$ ) show that the regression models yield good results. The regression results show that: 1) The increasing in cohabitants has a positive effect on the use of in-patient service among the elderly ( $B = 0.060$ ,  $P < 0.05$ ). With the increasing in cohabitants, there will be a greater likelihood of care and financial support for the hospitalized older people. This will lead the elderly to make more use of in-patient service. 2) Whether the elderly cohabiting with grandchildren has a significant influence on the utilization of hospitalization service ( $B = -0.315$ ,  $P < 0.01$ ). The elderly who live with their grandchildren have higher utilization of hospital services than those who do not. The families in China, owing to the relocation of labor force, many elderly people have taken care of the grandchildren transferred from their adult children. First of all, the older people who take care of their grandchildren have poor economic status. Secondly, the excessive care work will bring about a certain degree of damage to the physical condition of the elderly. Therefore, the utilization rate of hospitalization services will be higher. **Table 3** shows the binary logistic regression results of the use of residential care for the elderly.

### 5.3. Analysis of Regression Results

Through the regression analysis, it is found that the number of cohabitants has a positive impact on the use of therapeutic medical services, and the more cohabitants, the higher probability of using therapeutic medical services by the elderly will be, and vice versa.

**Table 3.** The results of living arrangements on the use of medical services for the elderly.

Variable	Physical examination utilization probability		Outpatient service utilization probability		Inpatient service utilization probability	
	Model 1		Model 2		Model 3	
	B	EXP(B)	B	EXP(B)	B	EXP
<b>The types of residence:</b>						
living alone(control group: not living alone)	0.004	1.004	-0.252	0.778	0.044	1.045
living with children (not living with children)	0.215	1.240**	-0.082	0.921	-0.010	0.990
Living with spouse(not living with spouse)	-0.008	0.992	0.174	1.190	-0.225	0.799
Living with grandchildren(not living with grandchildren)	0.186	1.205**	0.012	1.012	-0.315	0.730***
<b>The number of cohabitants</b>	-0.002	0.998	0.043	1.044*	0.060	1.061**
<b>Ln (living distance)</b>	-0.045	0.956*	0.069	1.071**	0.028	1.029

Note: \*\*\*P < 0.01, \*\*P < 0.05, \*P < 0.1.

Different living types have different influences on therapeutic medical service. Cohabiting with children and grandchildren will significantly reduce the use of preventive medical services among the elderly. However, in therapeutic medical service, older people who live with children and grandchildren use health care services more often than those who do not live with them. This is because the economic conditions of elderly households living with children and grandchildren in China's urban and rural households are significantly worse than those who do not live with them. Second, preventive medical services are different from therapeutic services. Physical examination is a kind of forward-looking medical service. It is a way to find out hidden troubles before the elderly are ill and does not require children and future generations. Third, the older people with poor economic conditions have more outdated medical awareness, and they do not pay enough attention to preventive medical services. Therefore, the use of physical examination service has a low probability. However, in therapeutic medical services, the elderly who live with children and grandchildren are more likely to use them. On the one hand, cohabiting with future generations will significantly increase the daily care of elderly people during their daily life and sick periods, and that will bring more spiritual and economic support to the elderly. On the other hand, the elderly people who live with their grandchildren will bear more responsibilities. The physical and mental challenges of older people pose greater challenges and bear more stress, so the probability of getting a doctor will be higher.

Whether cohabiting with a spouse do not significantly affect the use of medical services by the elderly. Older spouses play a role in spiritual support and part of daily care, the elderly in China mainly rely on the next generation. There is an impact on the use of medical services, but it does not reach the level of significance.

The living distance has a significant impact on the probable use of preventive medical services and therapeutic medical services, but the direction differs. The aged who are farther away from their children, have a lower preventive medical services utilization and higher therapeutic medical services utilization. Preventative medical services are forward-looking medical services, and more emphasis is placed on the influence of children's offspring; Therapeutic medical services are remedy medical services. There are more requirements on the care and material support of children's offspring. Different results will be produced between different medical services.

## 6. Conclusions

The advent of an aging society has brought a great challenge to the medical work of the elderly in China. Under the background of the new healthcare reform, building an equal and comprehensive medical care system is the most important thing. Understanding the influential factors of the elderly's medical service utilization behavior and that "all the patients can be treated" have become the top

priority in China's new healthcare reform.

While recognizing the reasonable differences in the use of medical services, it is particularly important to improve the use of various types of medical services by the elderly. Residential arrangements are the interactive modes of our country's families. It is a microcosm of Chinese society and the way of configuring family resources. In order to raise the use of medical services by the elderly, studying the use of medical services for the elderly, making reasonable living arrangements, and optimizing the allocation of family resources are important steps.

This paper examines the impact of residential arrangements on the use of medical services by the elderly and classifies living arrangements into three parts: cohabitation, types of residence, and living distance. The paper finds that the different types of living services have different effects on different medical services, and the older people who live with offspring are more frequent in the use of therapeutic medical services and have lower utilization rate of preventive medical services, therefore the first hypothesis "The types of living and medical services utilization among the elderly are correlated" is confirmed to be true; the number of cohabitants is positively related to medical services for the elderly; and the more cohabitants, the higher utilization rate of therapeutic medical services will be, which proved the second hypothesis to be true; the third hypothesis "Dwelling distance also has the opposite effects in different medical services" proves that the farther the aged away from their children, the higher utilization rate of therapeutic medical services and the lower utilization rate of preventive medical services will be.

The living mode has significant impacts on the medical services of the elderly, and there are different roles between different medical services. For preventive medical services, the offspring should transfer the thought of advanced treatment to the elderly, improve the use of preventive medical services such as physical examination, and reduce the prevalence of the elderly. The concept of raising children for the purpose of preventing old age in our country is relatively strong, and the distance between the elderly and their children has tremendous impact on the use of medical services by the elderly. In order to achieve the healthy old age, children should provide more material and spiritual support for the elderly, and concern more about the physical and mental health of the elderly.

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