

# Factors Associated with Willingness to Choose the Way for Old-Age Care: A Population-Based Cross-sectional Study in Chongqing, China

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## Abstract

The objective of this study is to investigate the factors associated with the willingness for old-aged care and the demands for health care among elders, which might provide a reference for the establishment of health care strategies. A cross-sectional study was conducted via questionnaires among 1553 randomly selected residents aged 65 or older from Chongqing, China during 2016. Data of demographics, and demands for old-age care and health care services were collected. Descriptive analysis was used to examine the characteristics of the respondents. A chi-squared test and multiple logistic regression were performed to explore the relevant factors associated with the preference of old-age care among older people in Chongqing. We found that 85.4% of the respondents were willing to select home-based care: family old age care (55.9%), and its combination form for old-age care: family old age care plus community old age care (29.5%) old age care. Multivariable logistic regression analysis showed that willingness to choose family old age care for old-age care was associated with lower monthly income, more children, worse commercial insurance, better health status, and shorter distance to their children. Most older adults had the demands for health-related services, including regular check-up, regular health seminars, establishment of health files. Hospital was the most acceptable provider for care services, and there was a preference for long-term care and emergency call among the elders. The majority of older Chinese prefer the family old age care and its combination form with community old age care for old-age care, and demand for a variety of health-related services. Home- and community-based care with sound and perfect medical and health mechanism should be the main pattern of old-age care system in China.

## Keywords

old-age care, family old age care, community old age care, nursing home, emergency call

### What have we already know about this topic?

China has become one of the fastest aging countries in the world because of the family planning policy and rapid development of the economy.

### How does your research contribute to the field?

Home- and community-based care with sound and perfect medical and health mechanism should be the main pattern of old-age care system in China.

### What are your research's implications toward theory, practice, or policy?

This research may provide some policy-making suggestions for an efficient, economical, and equal service supply for advancing the development of long-term elderly care in Chongqing, China.

## Introduction

Nowadays, China has become one of the fastest aging countries in the world because of the family planning policy and rapid development of the economy. The elderly population aged 65 and over in China reaches 7% by 2000, which indicates that China has entered into the aging society.<sup>1</sup> In 2016, the

population of the elderly aged 65 and over is estimated to be 10.8%.<sup>2</sup> A report of world population prospects points out that China will become a super-aged country. In less than 20 years, elderly population aged 65 and over in China will reach 20% or more.<sup>3</sup> Nowadays, China is underdeveloped, and rapid aging population poses significant challenges to Chinese society.<sup>4</sup>



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In China, old-age care are classified into institution old age care, community old age care, and home-based informal care. In the past years, family-based informal care was the dominant way of old age care due to the value of traditional filial piety culture.<sup>5</sup> However, increased geographical mobility and reduced family size due to the family planning policy have caused changes to the family structure: the present family structure mainly consists of only child and empty-nest elderly people. So it is predicted that traditional home-based care will fail to meet the demand of long-term elderly care. Currently, more and more elderly people chose institution old age care and community old age care. However, there are many problems to be addressed, such as the shortage of old age care nursing staffs, contradiction between supply and demand, rudimentary facilities, low-quality service, and inadequate investment.<sup>6</sup> A survey showed that only 11.2% of elderly residents in Shanghai were willing to live in a nursing home.<sup>7</sup> Fortunately, the Chinese government has focused on these problems. A lot of policies have been applied to solve problems of old age care.<sup>6,8</sup> The State Council releases the guidelines for accelerating development of pension services, in which a prospect for the pension industry in 2020 is designed. It aims to build a fully functional urban-rural pension system, based on family, supported by communities and institutions. In accordance with the guidelines and the present condition in China, the pension institutions should mainly provide specific services for disabled or semi-disabled elders, paying attention to the function of daily care, rehabilitation nursing, and emergency rescue. Community nursing service should be the pillar of family-based care for old people, offering community daily care, and home care support to families which are incapable to care for the elderly. It is urgent to explore a new pattern of home-based care system, which will make the socialized provision meet the demand of the rapid development of China's aging society.

It is vital to listen to the voice of the elderly about their demands on old age care way and healthcare services.<sup>9</sup> Yet, the theories of preferences for old age care in China remain unclear. Previous studies have identified that the needs of elderly are affected by many factors such as gender, education level, medical payment, number of children, living condition, monthly income, and physical condition.<sup>10-12</sup> In order to further develop China's old age care, the research on willingness of elderly old age care and its influencing factors is necessary.

Based on scientific analysis and research on home-based care systems, this thesis investigated the demands and factors for home-based care for older adults of the urban community, the problems, ways of development, and solutions of home-based care system for the elderly of Chongqing urban communities. This paper may provide some policy-making suggestions for an efficient, economical, and equal service supply for advancing the development of long-term elderly care in China.

## Materials and Methods

### *Ethics Consideration*

All participants were informed of the purpose, significance, process, and harmlessness of this study, and were voluntary to involve in the research. All survey data were collected anonymously. When the participants indicated that they could not continue to participate during the answering process, they were allowed to withdraw at any time.

### *Participants and Sampling*

The cross-sectional research was performed in Chongqing from June 8 to October 18 in 2016. We decided to use a stratified random sample. All districts of Chongqing were divided into 5 stratified area according to economic status: urban functional core area, urban functional development area, urban development area, Yudongbei ecological conservation development area, Yudongbei ecological reserve. The classification was based on an official document named as the Statement of Chongqing Municipal Committee of the CPC and Chongqing Municipal People's Government on Scientific Division of Functional Areas, and Acceleration of Construction of Five Functional Areas, which was approved by the Fourth Plenary Session of CPC Central Committee of Chongqing in September 14, 2013. Random sampling was conducted for 2 districts from each region. All participants aged 65 or above lived in the community without high-grade residential, low-rent housing, and economically affordable housing. Moreover, all participants were conscious and able to express themselves. Considering the large sample base, the total sample size of this study was more than 1400 cases. Finally, we issued 1700 questionnaires on the basis of human and material resources. A total of 1553 valid questionnaires were recycled.

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## Measures

We first explained the purpose, significance, and contents of this study to relevant government staffs of the surveyed districts and determined the time, place, and method of investigation. Then we selected community workers as investigators. Investigators were trained before the investigation. The formal questionnaire survey time was organized by community workers according to the actual situation. The location was set in places where the elders gathered. First, investigators explained the purpose, significance, answer method, and notes to the respondents. After obtaining informed consent, each participant completed the questionnaire with the help of investigators. The investigation took an average of 10 to 20 minutes.

The questionnaire contains measures on demographic and social characteristics, demand for old age care way, and demand for health care services based on previous literatures.<sup>13-15</sup>

**Demographic and social characteristics.** We collected the following information: gender, age, education level, medical payment, number of children, living condition, monthly income, physical condition.

**Demand for old age care way.** The old age care included community aged care, nursing home, family old age care, family old age care plus community aged care. All participants were assured to be aware of the concept of these old age care ways after explanations.

**Demand for healthcare services.** Participants chose the services they wish to get, forms of services, and location of services. The services they wish to get include establishment of health files, regular health seminars, home care services, rehabilitative services, regular check-up, common diseases prevention, daily care, and others. The forms of services include long-term care, short-term care, and emergency call. The location of services include hospital, community health service centers, home, and others.

## Statistical Analysis

The data were checked and entered into the EpiData 3.0. Statistical analyses were performed using SPSS 21.0. The chi-square difference test was applied to evaluate the differences among categorical variables. We used multivariate logistic regression to investigate the relationship between the independent variables. Descriptive analysis of frequency and percentage was used to describe the demographic and social characteristics of the older people, demands for old age care way and healthcare services. *P*-value <.05 was considered statistically significant.

## Results

Table 1 showed the individual characteristics of the participants and differences in these characteristics among 4 ways

for old-age care. A total of 1553 elders over 65 years old in urban communities of Chongqing were sampled. Most participants (73%) aged 65 to 75 years, and the percentage of female participants (46.0%) were lower than that of male participants (54%). 54.8% of the participants got low education (primary school or lower). Regarding medical payment, 74.1% and 3.4% of the sample were covered by basic social medical insurance and commercial insurance. The number of childless elderly and those elder people who have 2 children account for 2.1% and 45.6% in this survey, respectively. In all, 84.3% of the participants lived near to their children, among them, 55.9% lived with children or in the same community whereas 28.4% lived in the same county as their children. The participants with monthly income less than 3000RMB accounted for 90.2%. Overall, 74.4% were independent, 19.0% were semi-disabled, and 6.6% were disabled. As stated in the survey, the proportions of the elderly whose preference for old-age care were family old age care, community aged care, the nursing home, and family old age care plus community aged care were 55.9%, 8.4%, 6.1%, and 29.5% respectively. The comparisons among these 4 old age care ways showed that the education level, medical payment, number of children, living condition, monthly income, and physical condition significantly influenced the willingness of the elders to choose the old age care way.

The results of multivariate stepwise logistic regression analysis of the willingness to choose an old age care way were shown in Table 2. The significant variables compared to family old age care for community aged care, the nursing home, and family old age care plus community aged care were listed. The older people with monthly income between 2000 and 2999RMB showed more negative attitude to community aged care compared with those with higher monthly income ( $\geq 3000$ RMB) (RR=0.343, 95% CI: 0.138-0.853). The older people who lived in the same county as children showed more negative attitude toward community aged care than those whose children lived in a different province or abroad (RR=0.455, 95% CI: 0.212-0.975). The childless (RR=11.201, 95% CI: 2.783-45.084) or 1-child (RR=3.823, 95% CI: 1.377-10.618) older people preferred nursing home relative to those who had more than 3 children. The older people who had commercial insurance were more unlikely to choose nursing home than the poverty-stricken older people or others (RR=0.116, 95% CI: 0.017-0.809). Compared with the elders whose children lived in another province or abroad, those who lived with children or in the same community (RR=0.394, 95% CI: 0.178-0.874) and those who lived in the same county (RR=0.395, 95% CI: 0.171-0.910) showed more negative attitude to the nursing home. In addition, those disabled older people showed more negative attitude to the family old age care than those independent older people (RR=0.374, 95% CI: 0.180-0.777).

Compared with the family old age care, the monthly income, gender, education level, medical payment, and physical condition were significant variables that influenced the

**Table 1.** Demographic Characteristics of the Older People and Factors Associated with the Selection of Old Age Care Forms.

	Family old age care	Community old age care	Nursing home	Family old age care plus community old age care	P
Total	866 (55.9%)	130 (8.4%)	94 (6.1%)	458 (29.6 %)	
Gender					.196
Male	473 (56.6)	76 (9.1)	56 (6.7)	231 (27.6)	
Female	393 (55.2)	54 (7.6)	38 (5.3)	227 (31.9)	
Age					.338
65-69	345 (60.0)	45 (7.8)	31 (5.4)	154 (26.8)	
70-74	307 (55.0)	49 (8.8)	33 (5.9)	169 (30.3)	
75-79	128 (49.5)	26 (10.0)	20 (7.7)	85 (32.8)	
80-85	86 (55.1)	10 (6.4)	10 (6.4)	50 (32.1)	
Education level					.000*
Illiterate	133 (58.3)	28 (12.3)	12 (5.3)	55 (24.1)	
Primary school	368 (59.4)	53 (8.6)	49 (7.9)	149 (24.1)	
Junior high school	190 (48.1)	38 (9.6)	19 (4.8)	148 (37.5)	
Senior high school	149 (58.7)	6 (2.4)	9 (3.5)	90 (35.4)	
College	26 (50.0)	5 (9.6)	5 (9.6)	16 (30.8)	
Medical payment					.000*
Basic medical insurance	600 (52.3)	100 (8.7)	56 (4.9)	392 (34.1)	
Commercial insurance	39 (76.5)	7 (13.7)	3 (5.9)	2 (3.9)	
Out-of-pocket medical	183 (66.3)	18 (6.5)	27 (9.8)	48 (17.4)	
Free medical care	33 (62.3)	4 (7.5)	4 (7.5)	12 (22.7)	
The poverty-stricken	7 (50.0)	1 (7.2)	3 (21.4)	3 (21.4)	
Others	4 (66.7)	0 (0.0)	1 (16.7)	1 (16.7)	
Number of children					.000*
0	12 (37.5)	2 (6.2)	7 (21.9)	11 (34.4)	
1	151 (51.2)	31 (10.5)	27 (9.2)	86 (29.2)	
2	415 (58.6)	49 (6.9)	33 (4.7)	211 (29.8)	
3	166 (54.0)	31 (10.1)	22 (7.2)	88 (28.7)	
>3	122 (59.2)	17 (8.3)	5 (2.4)	62 (30.1)	
Living condition					.000*
With children or in the same community	485 (56.0)	64 (7.4)	41 (4.7)	276 (31.9)	
In the same county	273 (62.3)	34 (7.8)	29 (6.6)	102 (23.3)	
In different county	66 (47.1)	17 (12.1)	11 (7.9)	46 (32.9)	
In different province	39 (43.8)	13 (14.6)	11 (12.4)	26 (29.2)	
In different country	3 (21.4)	2 (14.3)	1 (7.2)	8 (57.1)	
Monthly income					.000*
<1000	299 (61.6)	45 (9.3)	34 (7.0)	107 (22.1)	
1000-1999	288 (58.3)	53 (10.7)	26 (5.3)	127 (25.7)	
2000-2999	227 (54.7)	19 (4.6)	27 (6.5)	142 (34.2)	
3000-3999	45 (33.1)	10 (7.4)	7 (5.1)	74 (54.4)	
≥4000	7 (38.9)	3 (16.7)	0 (0.0)	8 (44.4)	
Physical condition					.000*
Independent	650 (56.3)	86 (7.5)	56 (4.8)	362 (31.4)	
Semi-disabled	154 (52.4)	34 (11.6)	26 (8.8)	80 (27.2)	
Disabled	62 (62.0)	10 (10.0)	12 (12.0)	16 (16.0)	

“.000” indicates that “ $p < 0.001$ ”. “\*” indicates significance.

willingness of older people to choose the old age care way. Those older people with monthly income  $\geq 3000$  RMB were more unlikely to accept family old age care than those with monthly income less than 3000 RMB ( $RR_{<1000} = 0.224$ ,  $OR_{1000-1999} = 0.201$ ,  $OR_{2000-2999} = 0.278$ ). Men showed more negative attitude toward family old age care plus community

aged care than women ( $RR = 0.748$ , 95% CI: 0.585-0.957). The older people who had commercial insurance were more unlikely to choose the combined way than the poverty-stricken older people or others ( $RR = 0.052$ , 95% CI: 0.004-0.603). Those who could take care of oneself ( $RR = 1.925$ , 95% CI: 1.039-3.564) and those who were semi-disabled

**Table 2.** Factors Associated with the Willingness of Older People to Select the Community Old Age Care, Nursing Home, and Family Old Age Care Plus Community Old Age Care Compared to the Family Old Age Care.

Old age care ways	Variable	P-value	RR	95% CI	
Community old age care	Monthly income (ref $\geq 3000$ )				
	< 1000	.269	0.597	0.239	1.491
	1000-1999	.319	0.640	0.266	1.539
	2000-2999	.021*	0.343	0.138	0.853
	Living condition (ref= in different province or country)				
	With children or in the same community	.073	0.521	0.255	1.063
	In the same county	.043*	0.455	0.212	0.975
	In different county	.733	1.161	0.493	2.735
	Nursing home	Number of children (ref >3)			
0		.001*	11.201	2.783	45.084
1		.010*	3.823	1.377	10.618
2		.223	1.851	0.687	4.987
3		.045*	2.851	1.021	7.958
Medical payment (ref= the poverty-stricken and others)					
Basic medical insurance		.058	0.238	0.054	1.047
Commercial insurance		.030*	0.116	0.017	.809
Out-of-pocket medical		.294	0.438	0.094	2.047
Free medical care		.177	0.282	0.045	1.767
Living condition (ref= in different province or country)					
With children or in the same community		.022*	0.394	0.178	0.874
In the same county		.029*	0.395	0.171	0.910
In different county		.395	0.654	0.245	1.740
Physical condition (ref= disabled)					
Independent	.008*	0.374	0.180	0.777	
Semi-disabled	.669	0.842	0.383	1.850	
Family old age care plus community old age care	Monthly income (ref $\geq 3000$ )				
	< 1000	.000*	0.224	0.133	0.378
	1000-1999	.000*	0.201	0.123	0.329
	2000-2999	.000*	0.278	0.174	0.445
	Gender (ref= female)				
	Male	.021*	0.748	0.585	0.957
	Education level (ref= college)				
	Illiterate	.023*	2.786	1.152	6.742
	Primary school	.053	2.245	0.990	5.094
	Junior high school	.004*	3.289	1.468	7.371
	Senior high school	.087	2.026	0.902	4.548
	Medical payment (ref= poverty-stricken and others)				
	Basic medical insurance	.793	1.209	0.293	4.987
	Commercial insurance	.018*	0.052	0.004	.603
	Out-of-pocket medical	.438	0.561	0.130	2.419
Free medical care	.388	0.499	0.103	2.416	
Physical condition (ref= disabled)					
Independent	.037*	1.925	1.039	3.564	
Semi-disabled	.007*	2.482	1.280	4.815	

RR = risks ratio; 95% CI = lower and upper 95% confidence interval.

\* $P < .05$ .

(RR=2.482, 95% CI: 1.280-4.815) were more negative to the combined way compared with those who are disabled.

The specific wishes for the healthcare services among older people were described in Table 3. The results indicated that the most desired healthcare services among older people

in the descending order of importance were: regular check-up (59.0%), regular health seminars (45.9%), establishment of health files (43.8%), home care services (32.8%), common disease prevention (30.5%), rehabilitative services (18.2%), daily care (10.6%), and others (2.9%). Long-term



**Table 3.** Descriptive Analysis of Demands for Healthcare Services among Older People.

Services	Case (%)
Services wish to get (multiple selections)	
Establish health files	680 (43.8)
Regular health seminars	712 (45.9)
Home care services	508 (32.8)
Rehabilitative services	283 (18.2)
Regular check-up	915 (59.0)
Common diseases prevention	473 (30.5)
Daily care	165 (10.6)
Others	45 (2.9)
Form	
Long-term care	654 (42.7)
Short-term care	253 (16.5)
Emergency call	626 (40.8)
Services location	
Hospital	808 (52.1)
Community Health Centers (CHC)	440 (28.4)
Home	273 (17.6)
Others	31 (2.0)

care and emergency call were 2 favorite forms of receiving care services among older people, which accounted for 42.7% and 40.8% respectively. Regarding service location, the hospital was the most acceptable one for care services, which accounted for 52.1%.

## Discussion

The study investigated the attitudes of Chinese older adults toward 4 primary forms of old-age care, including family old age care, community old age care, the nursing home, and family old age care combined with community old age care, in several communities in Chongqing. Our results indicate that family old age care, and the combination form of family old age care and community old age care, are more acceptable by the elderly. It is consistent with a previous study which reported that 95% of the older people are willing to live at home in the northern city of Tianjin.<sup>16</sup> Bilsen et al<sup>17</sup>'s study depicted that older people require care at home. Traditionally, the elders are looked after by their adult children in multi-generational families,<sup>18</sup> owing to that older people think that only those without family support should be cared for in the institutions.<sup>18</sup> Thanks to the sustainable, equitable, and efficient healthcare system of community-based primary care,<sup>19</sup> community plays a critical role in the elders' health in integrated care<sup>20</sup> and provides a familiar environment to the residents.<sup>21</sup> It appears that community- and home-based services are attractive alternatives for the elders who prefer to live in the community and maintain Chinese cultural norms,<sup>18</sup> which may explain the 29.5% of family old age care plus community old age care in this survey.

As the population ages globally, family supporting becomes a potential research hotspot, by which the Western countries hopes to ease the fiscal pressure, while the Chinese government urges to transform its traditional family supporting pattern to a social pension security system.<sup>22</sup> With the rapid socio-economic development in China, great changes have taken place in the family structure, living environment, employment, and economy, which results in the declined total fertility rates and decreased family size,<sup>23</sup> dwindled co-residence with their older parents,<sup>24,25</sup> and the increased child-centered resource flows.<sup>26</sup> It becomes difficult for parents to receive family support,<sup>25-27</sup> and the capacity of family support will be inevitably further weakened in the future.<sup>28,29</sup> Therefore, despite being a familistic country, the requirements for community care are not decreased, and even appear to get increased in China's family care. Compared to other kinds of elderly care, community-based elderly care is featured by better physical health. The old could not only be taken care of by family members and accompanied by friends in a familiar surroundings, but also enjoy various services like daily care, health care, mental relief, entertainment activities offered by the community. In conclusion, community-based elderly care has the advantages of both family elderly care and institutional elderly care and bypasses their disadvantages.<sup>30</sup> As a result, older people often say that they prefer community to family care. Even though Confucian ideas criticize non-familial institutional care in China, many older adults have begun to express positive opinions about community aged care.<sup>31</sup> This huge socio-demographic transformation suggests that family-centered services should be encouraged in the development of community care to stimulate family care resources. Hence, home-based and community-based care should be the fundamental pattern in the aged care system.<sup>5</sup>

The elders are a heterogeneous group and their requirements to age care services vary greatly in terms of demographic characteristics, health status, socio-economic factors, and so on. In the future, the service demands will increase along with the increasing number of older people aged 65 to 79 in China.<sup>4</sup> Therefore, it is necessary to figure out what kinds of services are needed and what are the factors associated with needs among the elders. For older people, according to this survey, 3 primary factors affect their willingness to choose the way for old-age care in general: economic income, culture and convention, and psychological factors. Low economic income limits the capability to access the formal institutional care, such as nursing home care, and the traditional concept of bringing up sons to provide for one's old age is deeply rooted in the minds of quite a few older adults. Therefore, as long as child supports are accessible, most people are reluctant to leave the family. In addition, a familiar home environment gives them a sense of security, belonging and control.<sup>32</sup> In the current study, the result demonstrate that gender, education level, medical payment, number of children, living condition, monthly income, and

physical condition are significantly associated with the willingness of the elderly for old-age care. Specifically, (1) men prefer the family old age care than women; (2) those with lower educational level show more positive attitude to the family old age care; (3) the shorter distance the older people live to their children, the more positive mood to home-based care; (4) those covered by basic medical insurance or commercial insurance are more unlikely to accept the nursing home care.

Besides, the older people with better health condition prefer family old age care compared with the nursing home care, which is consistent with those studies showing that older people with a worse health status prefer institutional long-term care.<sup>33</sup> Importantly, we also found that the more children they had, the more negative attitude to institutional care among the older people. Owing to the socio-economic development and the family planning policy, the majority of Chinese families now have only 1 child, and the number of the “only child” generation has reached million.<sup>34</sup> Family supports and intergenerational relationships are becoming weaker as the nuclear family has recently become the dominant form in China.<sup>23,35</sup> It may suggest that the childbearing policy should be considered in the work of old-age care by the government in the future.

Moreover, the study show that the majority of respondents prefer to receive health-related services, including regular check-up, regular health seminars, establishment of health files, and so on. Additionally, there was no preference for short-term care for receiving care services among the respondents. Generally, older people with different physical conditions had different demands for medical services,<sup>36</sup> and the government should establish elderly care institutions according to the needs of the elders<sup>37,38</sup> and formulate standardized health assessment instruments. At present, number of medical and health care workers is inadequate, which fail to meet the growing needs of medical and health care. A previous study reported a need for 10 million nursing staffs in elderly institutions in China, but there are only 3000 qualified persons with national professional certificates,<sup>39</sup> while most care works are poorly paid<sup>40</sup> and deficiently trained.<sup>41</sup> Therefore, in terms of the extreme lack of nursing staffs with qualifications for the older people, the government should encourage the general practitioners and professional nursing staffs to work in the institutions to provide integrated medical and social services and support the development of the non-traditional medical institution, such as Dingxiang Clinic. Besides, raising the salary of nurses will attract more professional nurses to engage in geriatric care.<sup>38,40</sup> In this survey, more than half of the respondents chose to go to hospital for health care, indicating the widespread acceptance of hospital among older people. In addition, 28.4% of respondents thought the community health center as a suitable choose since it offers a range of acute, primary, and specialized health care services. Our findings suggest that the government should improve the 2-way referral system, and build a

“government-CHC-community” aged care system for integrated medical and social services to better utilize health services recourses of the community.<sup>38</sup>

## Conclusion

In conclusion, the majority of the elderly prefer family old age care and its combination form with community old age care than the nursing home and community old age care alone. Moreover, the present study suggests that gender, education level, medical payment, number of children, living condition, monthly income, and health status greatly influence the attitude of the elder to choose a way for old-age care. Our findings provide implications for public health and policy practices in China and other East Asian countries with similar culture. Further studies should concentrate on the establishment of suitable old-age care system. The demands of the services from older people provide evidence for the government when developing a perfect and sound age care system in China.

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## Author Contributions

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## Ethics Consideration

This study was approved by the Ethics Committee of the Army Medical University (Chongqing, China).

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