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Original Article

Status quo and needs analysis of health services among elderly urban residents in the developing and ageing Chongqing

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Abstract: Objective: Based on the scientific analysis and research of home and home care systems in China and abroad, this paper discussed the needs, impact factors, home care problems, development methods, solutions of urban elderly community systems and urban community elderly care in Chongqing. This may provide some policy advice for effective/economic/equal service delivery to promote the development of China's long-term elderly care. Methods: With multistage stratified cluster random sampling, we classified all the districts in Chongqing according to the economic level and then 2 or 3 districts in each level were selected to conduct an on-site survey in order to understand the utilization situation and demands on home-based care service. According to the principle of free will, a total of 1635 elderly citizens aged above 65 fulfilled the self-designated questionnaire, including general information, health condition and demand of elder care service. The statistical methods included descriptive statistics analysis, chi-square test, univariate and logistic regression analysis by SPSS 21.0. Results: A total of 1553 valid questionnaires were collected with an effective recovery of 94.98%. Investigation revealed that there were 55.9% interviewees that selected home-based care, 29.5% selected combination of home-based care and community-based care. Gender, health condition, literacy, health-payment systems, number of children, distance from their children and monthly income were the impact factors. We report that 50.7% of the population used community seniors' services, and 63% of them expressed satisfaction or satisfaction with the service; while 42.7% hoped to receive long-term service, 40.8% required emergency service, and 16.3% needed short-term service. The first three types of services required were health guidance (63.6%), life care (53.8%), and dietary guidance (40.5%). In total, 33.1% expressed a willingness to purchase home-based service and health payment systems, in which monthly income and health conditions were influencing factors. Conclusion: The home-based service for seniors is impacted by a number of factors, which presents as multi-level and diversified. The most pressing need is to provide health support. Socialization of home-based care service should be strengthened. In order to attract more professionals, the service content and supply methods should be optimized.

Keywords: Home care systems, for seniors, long-term service, short-term service

Introduction

Chongqing is a major city in southwest China. Administratively, it is one of the four municipalities directly under the Central Government of China and is the only one far from the coast. The Chongqing population as of 2015 was just over 30 million with an urban population of 18.38 million [1, 2]. In terms of age distribution, 6.4 million (20.88%) were of 0-14 years, 20.7 million (67.69%) of 15-64 years and 3.5 million (11.46%) were 65 years and over. It is estimated that the population ageing in Chongqing will reach its peak in 2036. In the next 10 to 20 years, the Chongqing aging population will gradually evolve into a serious area [3]. This will pose a major challenge to the social development of Chongqing.

Changes in demographic structure will inevitably lead to changes in the supply and demand of medical and health resources, highlighting an increase in the number of people suffering from illness, especially in seniors, worsening medical conditions due to physical deterioration and chronic diseases, and growing medical demand [4, 5]. Countermeasures taken in advance to meet the growing medical needs of

the seniors [6], can avoid causing unnecessary social unrest and to ensure that Chongqing transitions smoothly through the period of social transformation.

Methods

Subjects and samples

The subjects involved in this study include seniors in urban communities living in Chongqing. Inclusion criteria were ① age ≥ 65; ② have the ability to express their wills clearly. Exclusion criteria were ① being cognitive disabled; ② functional and organic psychosis; ③ living in the surveyed communities less than a year; ④ unwilling to be investigated. This study used a multi-stage stratified random sampling method.

According to the economic level of each region in Chongqing city (according to the urban core area of city functions, development zone, City Development Zone, the development of ecological conservation area northeast, northeast of Chongqing ecological protection zone five functional areas), 2 areas in each of the 10 areas in these districts were chosen. The choice did not contain a high-grade residential, low rent housing nor affordable housing in accordance with the community standard site investigation. This questionnaire had 35 variables.

Implementation method

Before the investigation, the relevant staff and the respondents meet and understand the purpose of the investigation, meaning, content, time, place and methods of investigation were discussed. The relevant staff were considered as investigators after given related training. The time of the questionnaire was arranged by community staff according to the actual situation. The location of the survey was where the senior often gathered. After obtaining the permission from the elderly participants, seniors answered the questionnaire under the guidance or assistance of investigators. The average completion time of each questionnaire was about 10-20 minutes, and all the questionnaires were collected on site.

Questionnaire recovery

This study gave out 1700 questionnaires in the Shapingba District of Chongqing City, Jiangbei District, Yubei District, Beibei District, Hechuan District, Dazu District, Wulong District, Zhongxian, Shizhu County, Wanzhou (10 areas), and 1635 copies were returned, in which 82 copies were invalid. The effective recovery rate was 94.98%.

Statistical analysis

The data were recorded and checked by Epidata, and SPSS statistical software (21.0) was used to analyze the data. General social demographic information, disease data and demand intention of the elderly were descripted by frequency and percentage. The elderly care service utilization and demand in different groups were analyzed by chi-square test. Univariate and multivariable logistic regression analyses were performed to analyze influencing factors. $P<0.05$ was considered statistically significant.

Results

General information of subjects

The general information on the subjects of investigation was shown in **Table 1**. In this survey, there were 1553 elderly people surveyed over 65 years old in Chongqing city community. The sex ratio of men and women was 1:0.85, which showed men than women. The proportion of the elderly under 70 years old was more than 1/3, and 157 people were over 80 years old, accounting for 10.1%. In terms of health, the elderly who are have self-care and are unable to take care of themselves account for 25.6%. Most respondents did not have higher education, junior high school and below accounted for 80.3%.

The vast majority of the elderly did not hire a nanny (93.9%). Three hundred and eleven people lived alone, accounting for 20.2%. This portion of the elderly people at home should be the focus of care. There were 494 empty nest elderly, accounting for 32%. The total number of elderly patients was 203, accounting for 13.2%. Overall, 62.2% of the elderly's income came from pensions. In total, 75% of the elderly have basic social medical insurance or a comprehensive health care, and another 3.4% of the elderly enjoy public health care. However, 17.8% still need medical expense coverage assistance. The number of elderly people living with adult offspring accounted for 2.1% of the

Table 1. The general information of all subjects in study (n=1553)

Index	Options	Number of people	%
Gender	Male	838	54.0
	Female	715	46.0
Age (yrs.)	65	575	37.0
	70	562	36.2
	75	259	16.7
	80 and above	157	10.1
Health (N=1552)	Able to take care	1155	74.4
	Closely able to take care	295	19.0
	Unable to take care	102	6.6
Educational level	Illiteracy	229	14.7
	Primary	622	40.1
	Middle school	396	25.5
	High school and the same	254	16.4
	College	52	3.3
Nanny or not (N=1552)	Yes	94	6.1
	No	1458	93.9
Types of old people (Multiple)	Empty nest old man	494	32.0
	Living alone	311	20.0
	Having diseases	203	13.2
	Subsistence objects	59	3.8
	Living with family	797	51.7
Economic source (Multiple)	Pension	961	62.2
	Child Support Maintenance	395	25.5
	Own savings	98	6.3
	Financial aids from others	26	1.8
	The minimum living security	68	4.4
	Commercial pension insurance	28	1.8
Medical expenses (=1550)	Other sources paid	39	2.5
	Social basic medical insurance	1148	74.1
	Commercial insurance	52	3.4
	Self-paid	277	17.8
	Public health care	53	3.4
	Major disease coordinate	14	0.9
	Others	6	0.4
Number of children	None	32	2.1
	1	298	19.2
	2	708	45.6
	3	308	19.8
	3 and above	207	13.3
Living conditions (one data missing, N=1552)	With adult offspring in the same community	868	55.9
	With adult offspring in the same city	440	28.4
	With adult offspring not in the same community	141	9.1
	Adult offspring living in other provinces	89	5.7
	Adult offspring living abroad	14	0.9

total survey, and 21.3% of the elderly do not live with adult offspring. Today, the first generation of parents of single-child families has entered the old age. Nowadays, in the social

Table 2. The top 15 basic chronic diseases of elderly people in Chongqing

Chronic disease types	Numbers	%	Rank
Hypertension	570	37.48	1
Osteoarthritis	333	21.89	2
Heart cerebrovascular disease	299	19.66	3
Diabetes	290	19.07	4
Osteoporose	255	16.77	5
Hyperosteogeny	219	14.4	6
Digestive system	214	14.07	7
Tracheitis	195	12.82	8
Cataract	138	9.07	9
Others	100	6.57	10
Prostatitis	99	6.51	11
Asthma	89	5.85	12
Neuralgia	72	4.73	13
Liver disease	65	4.27	14
Cerebral apoplexy	53	3.48	15

environment where social life is fast-paced and work pressure is high, the pension of this part of the elderly cannot fully support the family. These elderly shape future government policies underpinning and are the social assistance focus.

According to the statistical results, 440 elderly people lived with their adult offspring or lived in the same community as their adult offspring, and 868 elderly and adult offspring lived in the same area of the city. It showed that 84.3% of the elderly live with or are close to each other, thus providing geographical convenience for home care.

The top 20 basic chronic diseases

The results of the survey showed that only 6.1% of the older people aged 65 or above did not have any diseases. The prevalence of chronic diseases is an important indicator of the health status of the elderly, the burden of disease and the demand for health services. The top 3 prevalence of chronic diseases was hypertension, arthritis and cardiovascular- cerebrovascular diseases, with a proportion of 37.5%, 21.9% and 19.7%, respectively. In addition, diabetes was also at 19.07% in fourth place. Diabetes and high blood pressure remain two important diseases for the prevention and control of the elderly (**Table 2**). In addition, the survey found that the incidence of arthritis ranked second, suggesting that in the elderly care services, we should strengthen the services of these patients, and provide the convenient conditions and preventive disease care for arthritis patients.

Health service needs

The top three health care services provided for the elderly were regular physical examination (59%), regular health lectures (45.9%), and health records (43.8%). Most of the elderly (83.7%) are not in urgent need of nursing programs. The top three health care services for elderly people were ranked as follows: establishment of health records (43%), regular physical examination (35.6%) and regular health lectures (28.5%). **Table 3** showed that the current health service institutions in Chongqing were functioning well and met the needs of residents, but regular physical examination and regular health lectures can be further conducted.

Table 4 showed the results of multi-category logistic regression analysis. Taking long-term care services as a reference, men were less likely to choose short-term care services compared to women with an OR value of 0.663, indicating that men were more likely to choose long-term care services. The elderly with commercial medical insurance and self-paid medical care were less likely to choose emergency call service than those with serious illness coordination, with OR values of 0.095 and 0.167, respectively. Compared with the elderly who can't take care of themselves, the elderly who can take care of themselves were more inclined to choose short-term entrusted services (OR value is 2.069), and were more willing to choose emergency call service (OR value 6.252).

Discussion

In China's pension policy 90% of the elderly are at home, 7% of the elderly are in the community, 3% of the elderly are in Old-age care institutions [7]. According to the survey results, the choice of old-age service mode was relatively close to this policy (55.9% of the elderly choose home care, and 29.5% of the elderly choose home care and community service). It can be seen that home care for the elderly is complying with the desire and demand of the majority

Table 3. The health services the elderly wanted

Index	Options	Number of people	%
The health care services you wish to receive	Health records	680	43.8
(Multiple)	Regular health lectures	712	45.9
	Home care services	508	32.8
	Rehabilitation service	283	18.2
	Regular physical examination	915	59.0
	Common disease prevention	473	30.5
	Day care	165	10.6
	Others	45	2.9
The health care services you have received	Establishing resident health records	611	43.0
(Multiple)	Regular public health lectures	405	28.5
	On-site care	179	12.6
	Rehabilitation services	122	8.6
	Regular physical examinations	506	35.6
	Prevention and treatment of common diseases	215	15.1
	Day Care	118	8.3
	Others	56	3.9
	Not getting any service	161	11.3
Urgent care	Nothing	1293	83.7
	Exist	251	16.3
Where most want to get your health care program	Hospital	808	52.1
	Community healthcare center	440	28.4
	Home visiting service	273	17.6
	Others	31	2.0

Table 4. Logistic regression analysis of influencing factors

		β	Standard error	Wald	95% CI for β		*P*
Short-term commitment	y-intercept	-1.028	1.245				0.409
	Male	-0.411	0.160	0.663	0.484	0.908	0.010
	Female	0	.	.	.	.	.
	Able to take care	0.727	0.315	2.069	1.117	3.833	0.021
	Closely able to take care	0.014	0.335	1.014	0.526	1.953	0.968
	Unable to take care	0	.	.	.	.	.
Emergency call service	y-intercept	-0.207	0.953				0.828
	Social basic medical insurance	-0.922	0.744	0.398	0.093	1.708	0.215
	Commercial insurance	-2.350	0.970	0.095	0.014	0.638	0.015
	Self-paid	-1.790	0.764	0.167	0.037	0.746	0.019
	Public healthcare	0.193	0.843	1.213	0.232	6.330	0.819
	Major disease coordinate	0	.	.	.	.	.
	Able to take care	1.833	0.336	6.252	3.235	12.080	0.000
	Closely able to take care	0.566	0.359	1.761	0.871	3.561	0.115
	Unable to take care	0	.	.	.	.	.

of the elderly in China, complying with the cultural customs and social development trends of the Chinese nation for thousands of years. In total, 74.9% of the elderly in this study think they are capable of self-care or the family has enough time and energy to take care of them, but they will need external help in a few years. Only 15.1% of older people think they need outside help now. In the future, there should be more and more social support to participate in home care for the health of the elderly.

This survey showed that seniors (>65 years) not suffering from any disease accounted for only

6.1%. Osteoarthritis rose from fourth to second compared with a few years ago. Hypertension and diabetes are the most important risk factors for stroke/coronary heart disease/other diseases. Stroke and coronary heart disease are also the most dangerous factors that affect the function of daily life. The high incidence of hypertension/diabetes and hypertension has become or will become a potential social burden. As representatives of managing chronic diseases, we need to provide more effective services for the prevention and management of hypertension for the elderly. Osteoarthritis (OA) is a common disease and frequently occurring disease among middle-aged and elderly people [8]. It is a major reason that the elderly to lose their ability to work and self-care abilities. With the development of Chinese ageing population, the incidence of OA has increased year by year, an epidemiological survey showed the incidence of OA over 60 years old [9-11] is 37.9%-67.4%, and about 80% of people over 75 years old [10] suffer from OA. OA not only affects the quality of life of patients, but also brings great pressure and heavy economic burden to families and society. Research found that [9] the elderly people generally lack knowledge of OA prevention and health care, treatment and rehabilitation and other related resources, and the lack of awareness of its harmfulness. Due to the characteristics of the humid geographical environment in Chongqing, the prevalence of arthritis is also high. It is necessary to carry out OA health education and health management to improve the understanding of the nature, harm, prevention and prognosis of OA, and reduce or avoid the risk factors associated with osteoarthritis.

Activity of daily living [12] is an important index to evaluate the functioning of the elderly. It is an important factor that affects the quality of life of the elderly [13], which is the risk factor of the daily life self-care ability of the elderly. Age factors are irreversible, but noninfectious chronic disease can be managed by intervention. Therefore, measures that are more effective should be taken to prevent and manage chronic diseases in the elderly population. In the course of this survey, only 19.2% of the elderly were willing to visit the community health service center. Zhu et al showed that more than 90% of the elderly lack health care resources, medical services and having inadequate medical funds in the community are all common problems [14]. It is necessary to guide people to change the behavior of medical treatment by adjusting the distribution of medical resources and to change the concept of medical treatment. At present, the medical and health workers are in short supply and cannot meet the increased demand of aging health and health care for the people. Therefore, how to liberate and develop the supply of health care is also a problem worth studying. In this regard, several provinces and municipalities, including Guangdong, Tianjin and Beijing have opened up the practice of multi-point nurses. YOUHU mobile software (Application, APP) also have on-line to availability to provide a new channel for medical service. In order to meet the actual needs of more and more elderly people, we should appropriately increase the access to home care and health resources, professionalize medical and health services, and further improve the community home care model [15, 16].

The key mode for the successful development of home care is to integrate resources and communication methods, which can effectively fill the shortage of resources caused by the weakening of family functions [17], which will bring favorable competitive incentives for community health. Better health support for the aging community is now the most pressing need in home care.

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Disclosure of conflict of interest

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