

Investigation and analysis of community home intelligent elderly care under the background of population aging

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Abstract: Under the background of aging society, it has become an increasingly important and urgent issue of providing for the aged. Our country has the largest elderly population and the fastest aging rate in the world. At the same time, China's pension resources, especially medical resources, are limited and unevenly distributed. In order to better deal with China's aging population, this paper discusses the feasibility of community home intelligent elderly care. This paper makes a questionnaire survey on the elderly in five districts of Foshan city in China. We analyze and compare the health status, pension needs and factors affecting the elderly's choice of pension mode in Foshan, as well as the real psychological needs of the elderly, analyze the problems existing in the current situation of pension. These provides a reference basis for the development of home intelligent elderly care.

Keywords: Home intelligent elderly care; Questionnaire investigation; Community; Population aging

1. Introduction

The elderly are the precious wealth of the country and society. It is an urgent task to speed up the development of the elderly care service industry and constantly meet the growing demand of the elderly care services for the aged to build a well-off society in an all-round way. By the end of 2019 [1-4], relevant studies show that the elderly population over 60 years old in China has reached 254 million, accounting for 18.1% of the total population. By 2025, the elderly population over 60 years old will exceed 300 million, accounting for about 20% of the total population, the elderly population will increase to 29 million, and the empty-nest elderly lived alone and the number of empty-nest elderly will increase to 118 million. At present, China has become the country not only with the largest number of elderly people in the world, but also with the fastest development of population aging. The supporting-issue is increasingly serious. The deepening aging problem has brought tremendous burden to the social economy, which makes the health status of the elderly continue to deteriorate. The large number of the elderly population also leads to the universality of its distribution. Due to the deterioration of physical function, the decline of social adaptability and the influence of various external environmental factors, the elderly have become a high-risk group of various chronic diseases and health problems. The rehabilitation of the community elderly has become one of the core-tasks of the pension problem.

According to the living style of the elderly, pension services is characterized by home-based care and institutional care. On the one hand, judging from the characteristics of China's aging population, pension medical resources and the economic capacity of the individual, it is obvious that China's huge pension problem can not only rely on institutional pension; on the other hand, because of the miniaturization and flattening of family structure, the traditional home-based care lost its original function. The contradiction between the change of family population size and structure and the traditional home-based care model is very prominent. Under the background of aging population, in order to deal with the increasingly serious pension problem, we need to put forward a more appropriate pension model- home intelligent elderly care, which can not only greatly alleviate the lack of resources in pension institutions, but also make up for the lack of traditional home-based pension, and better provide rehabilitation medical services for the elderly in the community.

2. The concept of Home Intelligent Elderly Care in community

Home intelligent elderly care is a mode combining modern internet and traditional home-based care mode. It fully takes the advantages of Internet, Internet of things and other technologies in information processing, information storage and information monitoring. At the same time, it effectively uses the existing living conditions to provide life care, rehabilitation management and medical care services for the elderly in the community. This new home intelligent elderly care model makes up for the shortcomings of traditional home-based elderly care and institutional elderly care, and makes great use of existing resources, which will bring revolutionary changes to China's elderly care. [5-7]

As a new type of elderly care mode, home intelligent elderly care has its obvious characteristics. First, modern information technology makes information more fluent, and makes the elderly's pension needs more convenient and targeted. Second, home intelligent elderly care in community will provide cheaper medical services for the elderly in the community, and satisfy their care needs. Third, the health service system with the use of modern information technology can monitor the physical condition of the elderly in real-time and provide accurate rehabilitation medical services [8-11].

3. Social investigation and Analysis on the health status and Pension needs of the elderly in community

Based on the problems between institutional care and traditional family care as well as the potential advantages of home intelligent elderly care in community, we have conducted a social survey on the basic situation, care needs and care mode selection of the elderly in five districts of Foshan city, Guangdong province. Through the investigation and research on the basic situation, care needs and care mode selection of the elderly in the community, we find the correct positioning and methods, analyze the exact needs of the elderly, provide a theoretical basis for the implementation of home intelligent elderly care in community, and provide real-time reference data for the decision-making of local government pension policy.

We have conducted a social survey in five districts of Foshan City, Guangdong province, and conducted a face-to-face questionnaire survey on the elderly in pension institutions, colleges for the elderly, communities and parks. A total of 1198 people were surveyed. The survey was divided into three parts: the basic condition of the elderly (including registered residence, family status, income, education, self-care and health status), the needs of the elderly (including life care, spiritual comfort, medical care, learning and training, collective activities, etc.), and the demands for home intelligent elderly care services (including personal requirements for service personnel, willingness to learn smart products and willingness to pay for them). Everyone in our survey team is kind and patient to communicate with the elderly, and strictly record to ensure the authenticity of the data analysis results. After collecting the questionnaire, we analyze and process the data and get the following conclusions.

(1) Basic information of the elderly

In this section, the basic information of the elderly mainly includes registered residence, family status, income, education, self-care and health status. Different social classes, health conditions and education levels will have different pension needs, and may choose different pension methods. The basic information of the elderly in this survey is shown in Figure 1-6.

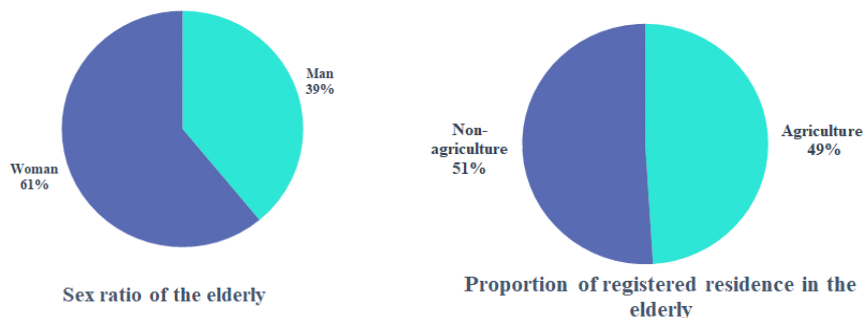


Figure 1 The gender ratio and registered residence type of the elderly

As can be seen from Figure 1, among the people who participate in this survey, women account for 61% and men 39%. The proportion of registered residence in agriculture is 49%, while non-agricultural registered residence is 51%. The proportion of non-agricultural population in these survey groups is higher than that of agricultural population, mainly because Foshan city is of relatively high degree of urbanization. More people move from rural areas to cities, and agricultural household registration has become non-agricultural registered residence.

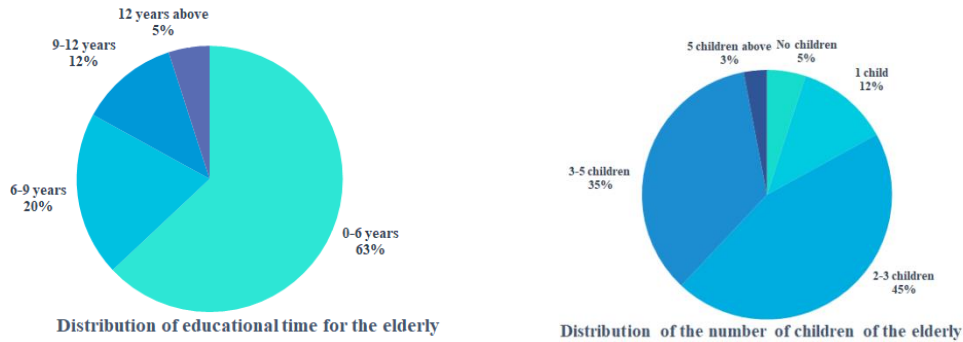


Figure 2 The distribution of educational time and number of children of the elderly

As is shown in Figure 2, 63% of the elderly have been educated for less than 6 years, 12% for 9-12 years, 20% for 6-9 years, and only 5% for more than 12 years. For the number of children of the elderly, 45% of the elderly have 2-3 children, 35% have 3-5 children, 12% have only one child, and 5% have no children. At present, the education time of the elderly is generally short, and the number of children of the elderly is relatively large, which is related to the failure to implement the family planning policy.

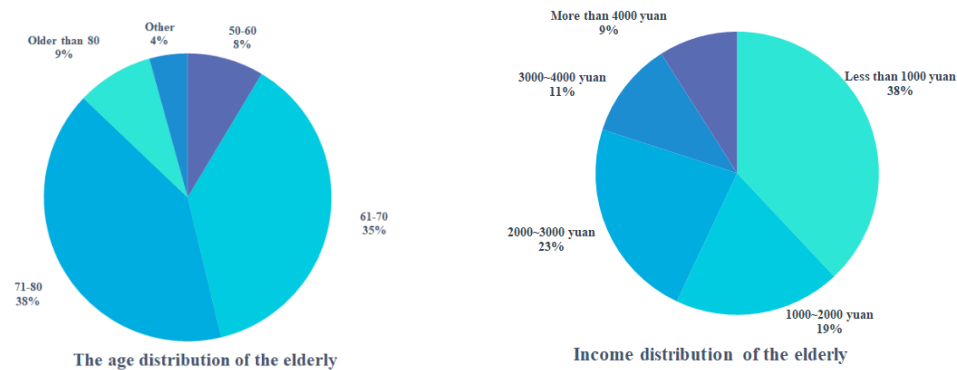


Figure 3 The age and income distribution of the elderly

Most of the people who participated in the survey were born between 1912 and 1960. As can be seen from Figure 3, most of them are between 71 and 80 years old, accounting for 38%, followed by those between 61 and 70 years old, accounting for 35%. Only 9% is over 80 years old. In terms of monthly income, 23% of the total income is about 2000-3000 yuan, 9% of the total income is more than 4000 yuan, and 38% of the total income is less than 1000 yuan. The income of the elderly is relatively low, which is related to the failure of the whole country to pay endowment insurance when they are young. The relatively low source of income determine that they choose the pension mode with low expenditure

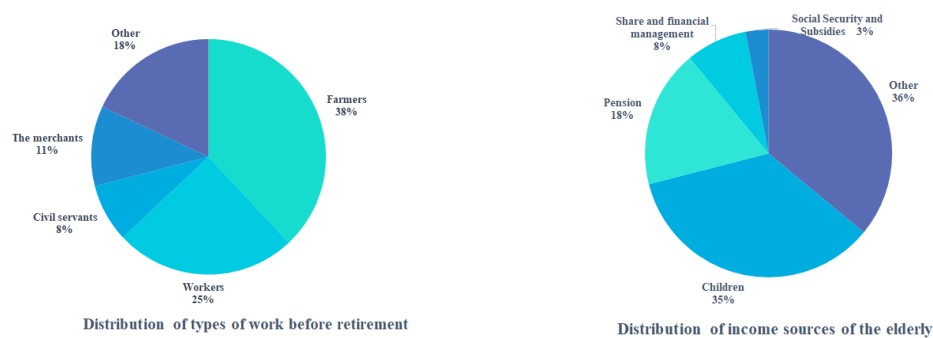


Figure 4 The distribution of jobs and income sources of the elderly before retirement

As shown in Figure 4, among the respondents, workers and farmers account for 25% and 38% of the jobs before retirement. Civil servants and businessmen account for 8% and 11% respectively. After retirement, the sources of income are also different, Children support and other sources accounting for 35% and 36% respectively. The elderly surveyed are mainly workers and farmers, who failed to pay social insurance when they were young, resulting in less income after retirement and relatively single source, which may affect their quality of pension and health status.



Figure 5 Self-care and health of the elderly

As we all know, the health status and self-care level of the elderly determine their way of providing for the aged. Figure 5 shows that most people think that their self-care level is relative better, accounting for 80% and only a few people think that their self-care level are worse, accounting for 6%. Most of the elderly people surveyed think that they are in good health, accounting for 43.9%, and very few people are physically disabled, accounting for 3%.

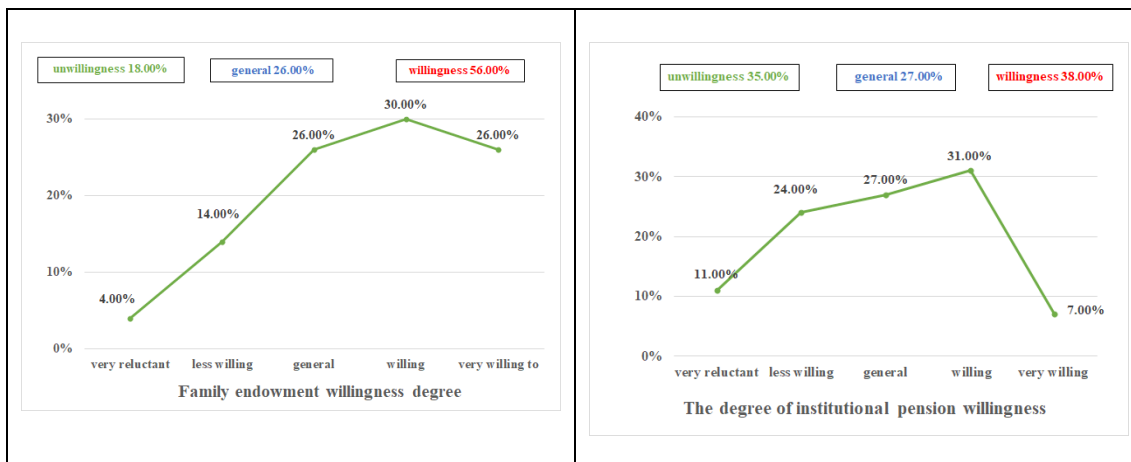


Figure 6 The willingness of the elderly to provide for the aged at home and in institutions

As can be seen from Figure 6, most of the elderly in the community hope to provide for the aged in their own families, accounting for 56%, and only 4% of the elderly are very reluctant to choose family support. Regardless of the cost and other factors, 38% of the elderly are willing to choose institutional care and 35% are not willing to choose institutional care.

To sum up, most of the surveyed elderly have a lower middle income, and their source of income after retirement is single and unstable. This is because they mainly work as workers and farmers before retirement, and when they were young, many people did not pay social insurance. The physical health status of the elderly is relatively good, and the elderly with good self-care degree account for the majority. There are still a few people with very poor self-care degree. Most of them choose family pension, while the number of people choose institutional pension accounts for a relatively small proportion. Therefore, it can be analyzed that most of the elderly are willing to provide for the elderly at home.

(2) The main needs of the elderly in the community for pension services

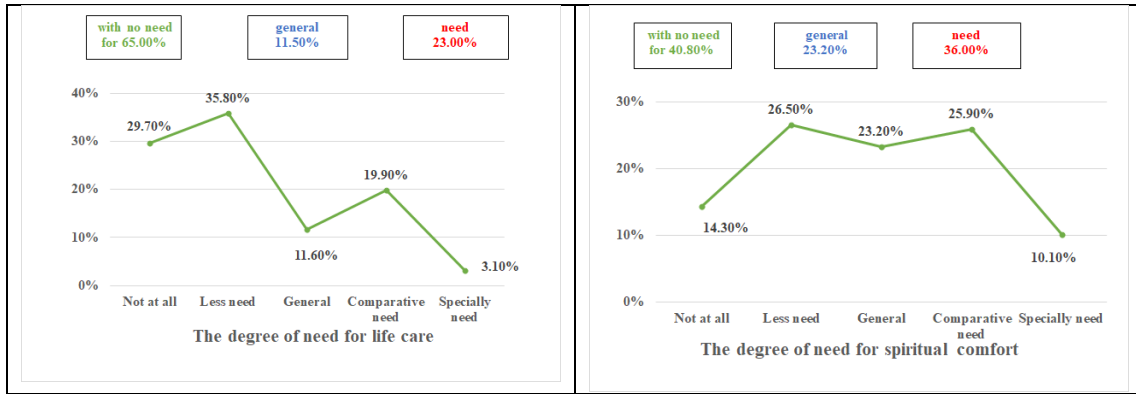


Figure 7 The demand of the elderly for life care and spiritual comfort

As can be seen from Figure 7, 29.7% of the elderly people have no needs of life care, 35.8% have less needs of life care, while 19.9% have comparative needs and 3.1% have special needs of life care. Among the demands for spiritual comfort, 10.1% are in special need, 25.9% are in comparative need, while 14.3% are not in need at all and 26.5% are in comparative less need. All these indicate that the investigated elderly has a good degree of self-care and do not need special care. However, the needs for spiritual comfort are high.

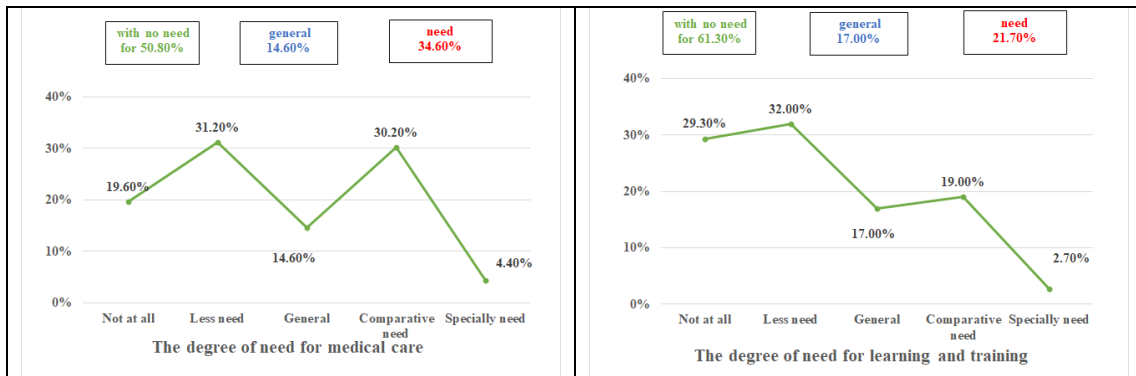


Figure 8 The elderly people's demand for medical care and learning training

As can be seen from figure 8, 19.6% of the elderly people's demand for medical and nursing services are not in need at all, 31.2% are in less need, 30.2% are in more need, and 4.4% is especially needed. As for the demand for learning and training, 2.7% of them are in special need, 19% are in more need, 29.3% are not in need at all, and 32% are in less need. These show that the demand for medical care and learning and training is relatively low among the investigated population.

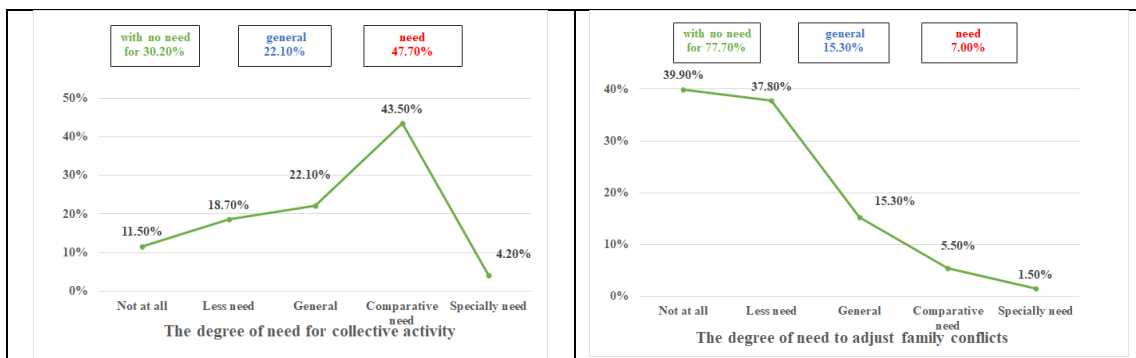


Figure 9 The elderly people's demand for collective activities and mediation of family conflicts

As can be seen from Figure 9, 43.5% of the elderly need to organize collective activities, 4.2% need special demand, 11.5% do not need them at all, and 18.7% do less need them. As for the requirement to reconcile family conflicts, 39.9% of them are totally unnecessary, 37.8% are relatively unnecessary, 5.5% are relatively needed, and 1.5% are especially needed.

To sum up, most of the investigated elderly people have a good degree of self-care and do not need

special care. However, spiritual comfort is in high demand. Because some of the surveyed people are in nursing homes and some are in parks. The elderly in nursing homes need more spiritual comfort. People walking in parks have peers to chat together, so the demand for spiritual comfort is less. Due to the physical quality of the elderly, their eyes and ears are not as good as those of the young, and they have less demand for learning and training. They are more eager to hold some collective activities on a regular basis so that they are no longer lonely. For mediating family conflicts, adults can solve them and they believe that they don't need them at all account for a very large proportion.

(3) Requirements and willingness for home intelligent elderly care



Figure 10 The requirements of the elderly on the personality and professional level of service personnel

As shown in Figure 10, 23.4% of the elderly have no requirements for the personality of the service personnel of home intelligent elderly care, 36.8% have less requirements, 9.3% have general requirements, 23.4% have relatively requirements, and 7.1% have special requirements. As for the professional level requirements of home intelligent elderly care service personnel, 26.7% of the elderly interviewed have no requirements at all, 37.9% have less requirements, 13.8% have no opinions, 17.4% have comparative requirements, and 4.2% have special requirements. The above results show that the elderly are not particularly familiar with the home intelligent elderly care model, and most of the elderly have no special specific requirements for the home intelligent elderly care model.



Figure 11 The elderly people's demand for service staff's working experience and willingness to learn smart phones

As can be seen from Figure 11, for the service staff of home intelligent elderly care, 29% of them are be in no requirements, 35.5% of them are be in less requirements, 14.9% of them are not necessarily, 18.7% of them are be comparative in requirements, and 1.9% of them have special requirements. The proportion of elderly people who are willing to learn smartphones and other tools is 45.4%, 20.9% of the respondents are unwilling, and not necessarily accounts for 8.8%. The survey conclusion here shows that most of the elderly have relatively low requirements for old-age life.

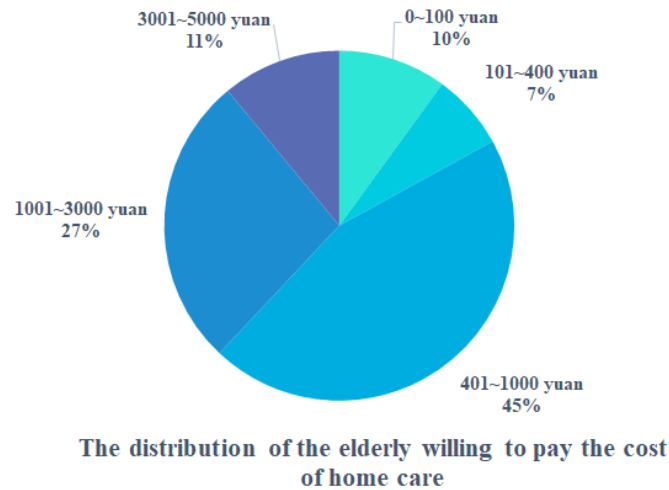


Figure 12 The distribution of home care expenses that the elderly is willing to pay

As can be seen from Figure 12, the elderly is willing to pay for home intelligent elderly care services, accounting for 10% of 0-100 yuan, 7% of 101-400 yuan, 45% of 401-1000 yuan, 27% of 1001-3000 yuan, and 11% of 3001-5000 yuan. In the statistical population, up to 89% of the elderly are willing to pay less than 3000 yuan. This may be one of the reasons why most of the elderly are not willing to choose the traditional institutional care. The cost of institutional care is relatively high, which makes it difficult for them to afford.

From this, we can see that home based intelligent elderly care service has not been widely promoted in Foshan city in China. The elderly has no basic concept of home intelligent elderly care service. They do not have high requirements for the personality, professional level and working experience of home-based elderly care service personnel. In addition, there has been a concept of raising children to prevent old age in China since ancient times. The aged are more willing to let their children support themselves. In the rapid development and fast-paced society of contemporary China, it is difficult for the elderly to live with their children, and their children are unable to take care of their parents because of their work. Therefore, home intelligent elderly care provides a more suitable way for the elderly to live in their own homes. At the same time, the community has a professional rehabilitation medical team to take care of the elderly. In this way, as long as the elderly pay much less than institutional care, they can support the elderly at home.

4. Home intelligent elderly care is an appropriate solution to the pension problem in China

China has become the country with the largest number of elderly people in the world, and also the country with the fastest development of population aging. The problem of providing for the aged is becoming increasingly serious. The deepening supporting issue has brought a great burden to the social economy, making the health of the elderly population continue to deteriorate, and pension resources, especially rehabilitation medical resources are facing great pressure. On the one hand, the traditional institutional pension cannot provide enough beds and other pension resources for the elderly; on the other hand, a large number of elderly people cannot afford the pension costs and are unwilling to choose institutional pension. The traditional family pension has changed a lot with the changes of the times. The children are busy working outside, and they have no time and energy to look after the elderly at their home.

Combined with the above survey results, the vast majority of the elderly surveyed are in good physical condition and self-care condition, and a large part of them are not willing to choose the traditional institutional pension. We put forward the way of home intelligent elderly care, which not only fully takes the advantages of traditional family care, but also makes up for the shortcomings of traditional institutional care. For the majority of the elderly with good physical condition and self-care ability, they can choose to support themselves at home and live a quality life in a familiar environment. At the same time, professional pension institutions in community with using high technology to monitor the health status of the elderly in real-time and provide necessary rehabilitation medical care. At the same time, for the elderly who are in poor health and unable to take care of themselves, they can choose traditional

institutions. For the government, home intelligent elderly care can greatly reduce the pressure of pension resources. For the family, it can effectively reduce the burden of the family and let the children work at ease.

5. Conclusion

In order to deal with the problem of population aging in China under the background of limited elderly care resources, especially medical resources, and unbalanced distribution, we explore the feasibility of community home intelligent elderly care. This paper makes a questionnaire survey on the elderly in five districts of Foshan city, analyzes and compares the health status, elderly care needs and factors affecting the elderly's choice of elderly care mode, as well as the willingness of home intelligent elderly care, so as to provide a reference basis for further promoting the development of home intelligent elderly care services.

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