

The impact of population aging on China's health care system and countermeasures

Ziyi Yang

University of Nottingham Ningbo China, Zhejiang, Ningbo, China

hmyzy12@nottingham.edu.cn

Abstract. Today, the aging population has already become a common problem faced by many countries, and China is not an exception which has entered the aging society. This problem would bring various impacts on China's social development. This review would focus on the impact on health care system. One is the excess demand for the health care services since the demand of elderly is special, which is different from ordinary patients. Second, with the growth of the number of elderly, the supply of pension insurance funds is reduced but the expenditure is increasing. These has brought great pressure on the health care system of China. After analyzed the impact, the author compared the response of other countries faced with similar problems and provided some suggestions to mitigate the effect of aging.

Keywords: aging problem, population aging, China, health care systems

1. Introduction

Commonly, population aging refers to the increasing trend of the proportion of elderly people in the whole population of a country or region. In general, the definition of population aging involves the increase in the share of the population aged 65 years and older in the total population, and the change in the proportion of the population aged 65 years and older to the population aged 15 to 64 years. As it is mentioned by Liu, a country or region entered an aging society when the proportion of people aged 65 and over reaches 10% or more of the total population, meanwhile, in 2020, China had 191 million people over the age of 65 [1]. The relevant data show that the proportion of people aged 65 and above in China is 15.6 percent in 1999, had become the aging society, which problem keeps still developing [1]. From the line graph, Figure 1, the proportion of elderly people increased year by year, and the researchers also showed that people over 80 years old became the fastest growing group of the elderly population [2].

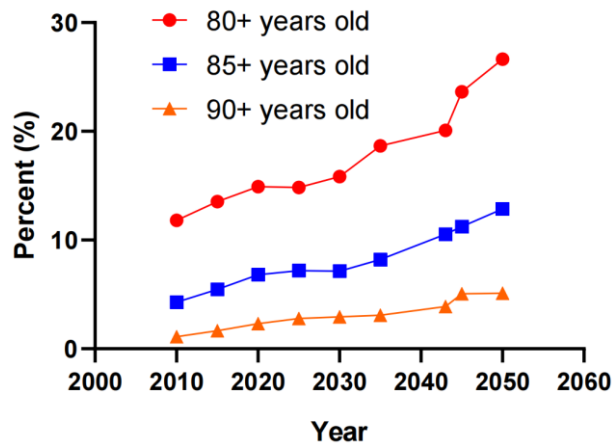


Figure 1. Proportion of the elderly at different age groups in China between 2010-2050 [2].

With the deepening of the aging problem in society, the labor force of China's society will be tightened, and the pension burden will rise rapidly, which will have an impact on China's healthcare service and system. Therefore, it's necessary to raise its attention to this problem and formulate countermeasures in time according to the development trend. This review focused on the impact of the aging population on the medical market in China. The author first claimed on the situation and future development trend of aging in China, then, clarified the impact of population aging in the healthcare system. The third part of the essay introduced the experience of other countries to deal with aging, and the last part was the conclusion and suggestions to control or decrease the impact of aging.

2. The trends of aging population in China

Due to the decreasing birth rate, increasing in life expectancy and the effects of population control policies, the trends of an aging population are becoming more pronounced.

First, the aging problem would show in the growth of the elderly population. As predicted by the researchers, the amount of the total elderly population in China will be about 300 million in 2025, and it will reach more than 400 million and 483 million in 2033 and 2053, separately, and 2/5 of the elderly in Asia and 1/4 of the elderly in the world will come from China [1].

Second, the proportion of the labor force also reflects the aging of China. Since 2012, China's working-age population aged 15 to 59 has increased annually [3]. The rate of reduction is more than 3 million, and the cumulative reduction has been more than 40 million by 2022 [3]. Besides the decline in the total amount, of China's labor population, the proportion of 45-64 years old increased by 7.61% in the nine years from 33.74% in 2011 to 41.35% in 2019 [1]. This demographic shift challenges sustaining economic growth, productivity, and social welfare systems, as there are fewer individuals of working age to support the growing elderly population.

3. The effects of aging population in China

3.1. The influence of population aging on the market of healthcare

The first point that should be illustrated is an apparent impact on the healthcare market. With the growth of the aging problem, the demand for medical services is growing rapidly.

From the perspective of health economics, health could be regarded as a kind of capital of humans. There will be depreciation in the process of capital accumulation, which refers to the loss of assets due to wear and aging and other factors in the use process, thus reducing the actual value of possession, and this problem will also exist in health capital. The growth of age raises the depreciation rate. This could lead to more problems in physical health and increase the demand for health care. The increase in depreciation rate can be reflected in many aspects, for example, the elderly have a higher

depreciation rate of muscle and bone. With the increase of age, the incidence of human muscle and bone-related diseases gradually increases, among which sarcopenia and osteoporosis are more common. This increases the risk of falls and fractures in the elderly [4]. It seriously affects the quality of life of the elderly and increases the demand for medical care [4].

Besides the problem mentioned above, the shortage of health care supply are particularly acute in mountainous areas. The unbalanced development of the economy has led to the fact that the medical security and material foundation in rural areas are not as good as those in cities. Zhu mentioned in the analysis that general township (town) public hospitals and urban street hospitals are mostly “B” type hospitals [5], which admission pressure and complexity of patient health management are much higher than those of urban street hospitals. The demand for medical services is 30,000 to 100,000 people, with fewer geriatric departments and professional nursing staff, and the supply of medical services exceeds the demand, exacerbating this problem because of population aging. Sun’s analyzed and compared the distribution of pension resources in 2010 and 2019, found that the contribution rate of their index of pension resources allocated by population and area in different years was significantly greater between regions than within regions, indicating that the unfair allocation of pension resources mainly happened between regions [6]. Data from the seventh census in 2020, the proportion of permanent rural residents aged 60 and above accounted for 23.81 percent (121 million) of the total rural population, with 5.1% higher in rural areas than in the national average [5]. The degree of aging may be more severe in rural areas than in urban areas. This also exacerbates the shortage of medical resources in these areas.

In addition, population aging is a very special problem, which is different from other common diseases. Aging not only requires medical services but also nursing care. Both the physical functions in terms of hearing, vision, and physical strength and activities such as eating, dressing, toileting, and moving are more difficult for the elderly, tending to rely on others for help and care, thus increasing the overall burden on society to care for them. The old-age dependency ratio, or the number of people aged 65 or older for every 100 people aged 20 to 64, is expected to rise from 13 in 2010 to 45 in 2050 [7]. The acceleration of population aging brings health, social, and economic problems, including reduced health functioning due to disability and chronic diseases, reduced labor supply, and long-term care costs. The long-term care needs of the elderly have become an increasingly important issue. The deepening of aging accelerates the development of a new industry in the medical market, that is, the old-age industry. By the end of 2020, there were about 329,000 old-age care service institutions and infrastructure facilities, with a total of 8.210 million old-age care beds, an increase of 5.9 percent over the previous year [8]. There were 38,000 registered old-age care institutions nationwide, an increase of 11.0% over the previous year, with about 4.882 million beds, and 291,000 community old-age care service institutions and facilities, with 3.328 million beds [8]. It can be seen from the data that China’s old-age service industry is constantly developing and its scale is gradually expanding. However, due to the large population base and the large number of elderly people, the current number is still unable to meet the demand.

3.2. The influence of population aging on the market of insurance

The second part of the effect of the aging problem on the healthcare market is the increasing burden of the medical insurance system. First, the supply of funds for medical insurance decreases. The main way of raising funds for a domestic active system of primary medical treatment insurance is the payment of employers and employees [9]. People who have retired do not need to pay for the premium of the insurance and have the same treatment as those employees. However, the proportion of retired workers increased, only relying on current employees to pay insurance premiums which increased gradually, leading to stress the medical insurance system. Data calculated by China’s Ministry of Human Resources and Social Security and National Healthcare Security Administration, the total expenditure of China’s basic medical insurance fund for employees increased by 3.92 times from 2010 (327.160 billion yuan) in 2010 to 2020 (1283.399 billion yuan) [10]. Technological progress could be one reason because more diseases can be cured by surgery or drug therapy [9], resulting in releasing of

the original compressed medical demand, further increasing the demand for medical insurance which leads to more medical expense.

4. The countermeasures of aging population in other countries

Except for China, many countries are facing the same problem and are experiencing aging populations, such as Japan and Australia. In response to the challenges posed by population aging, Japan and Australia have implemented various policies and strategies to address the multifaceted needs of their aging populations.

4.1. The strategies to population aging in Japan

In Japan, the proportion of people with age over 65 had reached 27.2% of the total amount, then continue to grow to 38.4% by 2065 [11], posing great challenges to the whole society due to the demographic change. The Japanese government has been aware of this problem and has been constantly adjusting relevant medical policies. To solve the impact and problems brought by the change in population structure, studies have shown that in 1961, Japan achieved universal coverage of UHC, and then entered the second phase of expanding social security benefits, for instance, they published a law that supported the elderly people, subsidized them when needed to pay for the health care services. The third step of the solution of Japan is enhancing sustainability. Through the implementation of the long-term care insurance (LTCI), the structure of the social security system for the elderly was completed, including health care insurance for illness, pensions for livelihood support, and LTCI for long-term disability [11]. To guarantee sustainable development, a key aspect is the promotion of healthy aging through preventive health initiatives and health promotion campaigns. These efforts underscore the importance of maintaining the physical and mental health of older adults, helping to improve quality of life and reduce health care costs over the long term. In addition, Japan has invested in long-term care services and infrastructure to support older people with functional limitations or disabilities, including the implementation of community care programs and the expansion of home care services [11].

4.2. The strategies to population aging in Australia

Australia, like Japan, has also implemented a range of policies and initiatives to address the challenges of population aging. Long-term care services and insurance have been set in Australia in the early times. However, with the development of the aging problem and society, the needs of elderly people changed. The Australian government accurately judged and analyzed the changes in insurance policies and long-term care services related to the elderly in line with people's needs, which is also the success of Australia in coping with population aging. By employing comprehensive assessment tools, the specific needs and preferences of elderly people can be ensured, which could increase the efficiency and result of long-term care [12]. Moreover, Australia's aged care system emphasizes consumer choice and empowerment, enabling older adults to make informed decisions about their care and support services [13].

5. The suggestions for aging population in China

As the aging problem continues to deepen, China should timely adjust its medical system according to the development of the problem, draw on foreign experience, formulate and implement relevant policies, alleviate the impact of population aging on the medical system, and support the health of the elderly population.

The first is to increase the supply of medical services, firstly investment in Healthcare Infrastructure, particularly in rural and underserved areas. Meanwhile, the development of AI can also alleviate the pressure on the medical system to a certain extent. For instance, after a large number of medical data, AI will assist doctors to read CT images and early cancer screening. Research has shown that in July 2017, Ali Health and Wanliyun released the medical artificial intelligence system "Doctor You", which can read 9,000 CT images within half an hour, which is thousands of times more efficient

than human beings [13]. With the development of its ability to learn, the number of things that AI could help will greatly increase, which may reduce the burden on doctors and relieve the pressure on the health care system.

Second, the government needs to more accurately judge the needs of the elderly. As mentioned before, the needs of the elderly for medical resources are different from those of ordinary patients, such as increasing the cultivation of nursing talents. China has intensified the training of medical personnel to improve their professional level and service quality. At the same time, it should encourage the introduction and training of more medical professionals to meet the growing medical needs of the elderly.

Third, China should continue to improve its medical insurance system. Literature describes the current situation of regional imbalance in medical insurance in China [9]. Expand coverage and increase reimbursement rates to reduce the burden of medical costs for the elderly. This will help to ensure that the medical needs of the elderly are met, and it is also necessary to improve the accessibility and equity of medical services and ease the pressure on medical expenditures of the elderly in remote areas. Besides the insurance policies, China should also pay more attention on the investment management of pension funds. The public investment channel should be expanded and the government should improve the policy of transferring state-owned capital to enrich pension funds, so that pension insurance funds can effectively maintain and increase their value, and properly deal with the financial pressure of an aging population [1].

6. Conclusions

Population aging is a pressing issue in China, shown by a significant increase in the proportion of elderly individuals aged 65 and above. This demographic shift poses various challenges to the healthcare market, including a growing demand for medical services and a strain on healthcare resources. As the elderly population continues to rise, the burden on the healthcare system increased, exacerbated by factors such as the depreciation of health capital with age, shortages of healthcare supply in rural areas, and the increasing need for long-term care services. Furthermore, the aging population has implications for the healthcare insurance market, leading to a decrease in the supply of funds and an increase in expenditure. The burden on the medical insurance system is further compounded by technological advancements and the rising cost of medical care. In response to these challenges, countries like Japan and Australia have implemented various policies and strategies to address the needs of their aging populations. For instance, similar to Japan, China should also focus on achieving universal health coverage in future, promoting healthy aging, and investing in long-term care services and infrastructure.

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