Impact Of Healthcare System on Population Aging: A Case Study of Yunhe District Nursing Home in Cangzhou City, Hebei Province

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Abstract. The issue of aging population is one of the key research topics today. Researchers have found progress in the issue of population aging, but there is still a gap in the issue of population aging. Therefore, the research topic of this article is the impact of healthcare on population aging. The research method of this article is as follows: Firstly, collect data on the elderly population of nursing homes in Yunhe District, Cangzhou City, and secondly, understand and analyze whether the data has been effectively favored by healthcare policies. The most direct finding of the research is that the shortcomings of medical insurance policies include: (1) Low reimbursement rates for medical insurance; (2) The medical insurance catalog is incomplete and incomplete; (3) Insufficient management at each level of the medical insurance system; (4) Medical insurance services are not humanized and inadequate; (5) The level of medical insurance services is low. Therefore, it is necessary to improve the design of the medical insurance system, strengthen the management of medical insurance funds, and improve the quality of medical insurance services. Finally it will provide a high-quality and universal medical insurance service management system for all citizens. Some measures can be taken to address this, including increasing the expansion of medical institutions, expanding medical insurance coverage, and strengthening grassroots medical services in society.

Keywords: Population aging; healthcare; Cangzhou Canal District; impact.

1. Introduction

The aging of the population is a natural law formed, and with the extension of human lifespan and the continuous improvement of living standards, the proportion of the elderly population will inevitably increase. However, this process is influenced by many factors, including fertility rate, mortality rate, immigration rate, etc. In the past few decades, the fertility rates in many countries have declined, and at the same time, advances in medical technology have continuously extended people's lives, accelerating the process of population aging. China is the most populous country in the world and also the country with the most severe aging population in the world. For the increasingly accelerating aging problem, how to respond has become the first and foremost issue. In fact, population aging is the result of the dual effects of declining birth rates and mortality rates.The decline in birth rate leads to a contraction of the bottom of the population's gender age pyramid, known as the bottom aging of the age structure or the aging of fewer children; The decrease in mortality rate leads to an increase in life expectancy of the population, resulting in the top aging of the population's age structure. Due to the dual decline in birth and death rates, the aging of the population's age structure is accelerating [1].

Studying population aging from a social perspective can expand the sociological analysis of this theory and solve the problem of aging. Research on healthcare is beneficial for enhancing understanding of population aging issues.Although the impact coefficient in the model constructed in this study is relatively small, population aging can lead to a relative increase in healthcare expenditure for residents, as improving health levels and increasing channels for obtaining medical information may reduce the demand for residents to go out for medical treatment, thereby reducing their healthcare expenditure. Therefore, an aging population will lead to a relative increase in healthcare expenditures for residents [2]. Therefore, we should further improve the design of the medical insurance system,

strengthen the management of medical insurance funds, and improve the quality of medical insurance services, in order to provide high-quality medical insurance coverage for all the people. Some measures can be taken, including increasing the establishment of medical institutions, expanding medical insurance coverage, and strengthening grassroots medical services. Beneficial for improving the construction of social healthcare and actively addressing the impact of aging on urban development.

2. Literature Review

2.1. Current Research Status of Healthcare System in China

Without national health, there can be no comprehensive well-off society. The Party and government have always attached great importance to people's health. The continuous development of China's healthcare industry, the increasing accessibility and affordability of basic medical care, have made and will continue to make indispensable contributions to solving the problem of poverty caused by illness, completing the arduous task of eliminating absolute poverty, and consolidating the achievements of poverty alleviation [3].

The research status of the healthcare system in China is very active. In recent years, with people's increasing attention to health, research on healthcare systems has also become increasingly in-depth. The current research mainly focuses on the following aspects:

Research on Medical Insurance Policies: Medical insurance policies vary in different regions of China. Researchers analyze and evaluate medical insurance policies to explore their impact on the healthcare system and directions for improvement, in order to improve the fairness and sustainability of medical insurance.

Research on Medical Resource Allocation: In response to the problem of uneven distribution of medical resources, researchers have proposed a series of policy recommendations and innovative models through the evaluation and optimization of medical resource allocation to alleviate the shortage and imbalance of medical resources.

Research on Medical Service Quality: Researchers evaluate the quality level of medical services through satisfaction surveys of hospitals, doctors, and patients, clinical pathway studies, and other methods. They propose improvement measures and policy recommendations to improve the quality and effectiveness of medical services.

Research on Medical Cost Control: The rapid growth of medical expenses is one of the challenges faced by China's healthcare system. Through analysis of medical expenses and research on control strategies, researchers have proposed a series of policy recommendations to control cost growth, in order to ensure the sustainable development of the healthcare system.

Overall, the research status of the healthcare system in China is relatively positive, covering multiple aspects such as medical insurance policies, medical resource allocation, medical service quality, and medical cost control, providing strong support for improving and perfecting China's healthcare system.Background In China, the healthcare financing structure involves multiple parties, including the government, society and individuals. Medicare Fund is an important way for the Government and society to reduce the burden of individual medical costs. However, with the aging of the population, the demand of Medicare Fund is increasing. Therefore, it is necessary to explore the sustainability of the healthcare financing structure in the context of population ageing [4].

2.2. Current Research Status of Healthcare Systems in Foreign Countries

The healthcare system is defined by the World Health Organization as a complex of organizations, institutions, personnel, and resources aimed at meeting the needs of individuals, families, and communities in prevention, treatment, rehabilitation, and health needs, and promoting, restoring, or maintaining a healthy state. The healthcare systems of countries around the world mainly focus on providing healthcare services, aiming to coordinate other sectors that may have positive or negative impacts on health by providing healthcare services or taking emergency rescue actions, and jointly

address the needs of public health and citizen healthcare.These systems include government led models (such as India and Denmark) and government market co led models (such as the United States), which represent different modes of healthcare operations. Medical service data sharing refers to the storage, access, and processing of medical service data, connecting multiple participants such as patients, doctors, medical service providers, pharmacies, insurance companies, and researchers, with the aim of establishing an efficient decision support system to assist doctors, governments, and patients in formulating the best service plans. Portuguese scholar Rosa et al. have created a blockchain based community elderly resident service platform (SOCIAL), with the goal of providing mobile or web solutions for publishing elderly life service needs.Researchers conducted a survey on the registration information of elderly residents by integrating various local municipal databases through the application of social service platforms, using Portuguese municipal authorities as a practical pilot. The research results show that less than 30.0% of the registration forms in the original database were filled out correctly, while over 25.0% of the information had duplicate data. Based on the above viewpoints, it can be concluded that blockchain technology can integrate medical service data and has the potential to achieve the goals of integrity, accessibility, correctness, and security of medical data. This has similar goals and functions to the health management system Shealth proposed by Zghaibeh et al [5].

2.3. Analysis of the Current Situation of Aging Population in China

The current situation of aging population in China refers to a trend where the proportion of elderly population is gradually increasing while the proportion of working age population is gradually decreasing. The following is an analysis of the current situation of aging population in China.

2.3.1 Increasing proportion of elderly population

With the development of medical technology and the improvement of population health level, the proportion of elderly population in China is constantly increasing. According to data from the National Bureau of Statistics, as of 2020, the elderly population aged 60 and above in China has exceeded 260 million, accounting for approximately 18.7% of the total population.

2.3.2 Population structure imbalance

The increase in the proportion of elderly population has led to a significant imbalance in China's population structure, with the proportion of working age population gradually decreasing. This poses certain challenges to economic development and social security, which may lead to increased employment pressure and widening pension gaps.

2.3.3 Increasing pressure of elderly care

The aging population is gradually increasing the pressure of elderly care. The aging population has brought about a significant increase in the demand for elderly care services, including nursing homes, community elderly care, etc. At the same time, the medical and nursing needs of the elderly population will also increase, placing higher demands on medical and human resources.

2.3.4 Economic impact

Population aging has a wide-ranging impact on economic development. The decrease in labor supply may lead to a decrease in productivity, a tight labor market, and an increase in labor costs. At the same time, the consumption demand of the elderly population is gradually increasing, bringing new economic growth points to fields such as healthcare, elderly care, and tourism.

Dealing with population aging is a challenge for the entire society, which requires joint efforts from the government, society, and individuals. Currently, the Chinese government has taken a series of policy measures, including strengthening the construction of the pension insurance system, promoting the development of family and community elderly care services, encouraging childbirth, etc., to address various problems brought about by population aging.

Population aging is a manifestation of changes in population structure, which has a technological inhibitory effect on urban innovation. Firstly, population aging affects the innovation vitality of cities

by changing the structure of human capital. Currently, China is accelerating the transformation towards an innovation driven development model, which mainly relies on human capital.According to international experience, different countries mainly rely on the accumulation of material capital during the stage of rapid economic growth. However, as economic growth slows down and the economy grows in large size, the driving force of human capital for economic growth gradually becomes apparent. At present, the average length of education for the population aged 15 and above in China has increased from 9.08 in 2010 to 9.91 in 2020. With the rapid development of aging population, a high proportion of elderly population will hinder the increase of human capital stock, weaken the willingness to invest in human capital, and hinder the development of human capital required for innovation, thus posing a technological obstacle to innovation.Research has pointed out that urban innovation is closely related to the improvement of labor efficiency, which reduces friction in product development and accelerates the birth of new products and technologies. From an innovative perspective, aging has a direct impact on the age structure of personnel engaged in research and development, thereby fundamentally weakening their enthusiasm for innovation. Secondly, the aging population will also affect the agglomeration capacity of urban resources, thereby hindering the output of innovative technologies in cities.According to the theory of agglomeration economy, by improving the efficiency of innovation matching, innovation sharing, and spillover of innovation concepts, agglomeration economy can effectively promote the acceleration of innovation. In densely populated cities, the construction of skyscrapers has had a significant positive impact on the innovation of surrounding enterprises. At the same time, urban innovation requires corresponding innovation environment support, as well as the gathering of a large amount of innovation capital, talent, and technology, in order to form economies of scale of factors and accelerate the output of innovation [6].

2.4. Analysis of the Current Situation of Aging Population in Foreign Countries

With the acceleration of population aging and rapid changes in population structure, the core policy of EU elderly education services is shifting to focus more on improving the quality of life for the elderly population. Especially emphasizing education services aimed at active aging and lifelong learning as important support for achieving this goal. At present, the EU is building a senior education service system that covers multiple dimensions such as quality of life, educational facilities, and educational services, aiming to provide high-quality educational facilities and services for the elderly, especially in rural areas. From the perspective of system design, elderly education services are a complex system engineering that requires the design of scientific and reasonable promotion mechanisms. In order to address the differences in elderly education services between urban and rural areas, the European Union has proposed a comprehensive collaborative plan consisting of the following elements: service concept orientation, practice path selection, policy guarantee mechanism, funding system, and social participation channels. This plan is committed to promoting the high-level convergence of elderly education services in urban and rural areas and is a new initiative [7]. Universality and acceleration, regional differences, socio-economic impacts. Strategies to address the aging population of foreign countries, adjust fertility policies, reform social security systems, and develop the elderly care service industry.

3. Field Investigation

A discussion and research survey on whether the elderly population in the Yunhe District nursing home in Cangzhou City, Hebei Province has actually received preferential treatment in medical care.

3.1. The Correlation between the Healthcare System and Population Aging

It is believed that the healthcare policies should be improved. The current long-term care system for the elderly in our country includes medical care and life care services, but there is a fragmented state in management. Specifically, healthcare is managed by the health department, while general

elderly care services are under the jurisdiction of departments such as civil affairs and social security. However, due to this decentralized management approach, services lack continuity and integrity [8]. What should attract the attention of scholars and the general public is the health issues of the elderly. In terms of physical health, we should promote the awareness of healthy living among the elderly, increase investment in medical technology, and continuously overcome various difficulties in the diagnosis and treatment of elderly diseases. From the perspective of mental health, we should vigorously develop the elderly health service industry, such as building elderly health care service centers, providing personalized health management systems for different elderly people, and taking timely psychological intervention measures to create a complete elderly health lifestyle industry service chain. With the increase of the elderly population, the demand for healthcare services has also correspondingly increased. We urgently need to deeply explore China's elderly consumption market and accelerate the cultivation of healthcare service professionals, which is very necessary. Due to factors such as physical decline, many elderly individuals are unable to effectively screen information. Therefore, in the process of cultivating healthcare professionals, it is not only necessary to improve professional abilities, but also to pay attention to professional literacy to ensure that the elderly can receive reasonable and effective healthcare services. Establishing the confidence of the elderly in healthcare services, thereby promoting the healthy development of the healthcare demand market [9].

3.2. The Impact of Healthcare System on Population Aging

The aging population usually has a positive impact on healthcare consumption. As people age, their physical functions gradually decline, and the probability of developing diseases increases. Therefore, the consumption demand for drugs and medical services among the elderly has become more urgent.At the same time, the increasing elderly population has further driven the growth of medical consumption demand. This inevitably has an impact on medical consumption prices, especially in regions and fields with limited or relatively tight medical resource supply, and this impact is more significant [10]. Nowadays, China is accelerating the process of aging. With the increase of the elderly population, the demand for the medical security system is also accelerating. The medical care system has a profound impact on the income level and incidence rate of the elderly. The implementation of medical care can reduce the problems faced by different elderly in medical services and provide convenient conditions for the vulnerable groups of the elderly in society to see a doctor. In China, the uneven distribution of healthcare resources is a very serious problem. Some elderly people in small county towns can only go to hospitals far from home for medical treatment when receiving healthcare services, which will greatly increase the cost and time.

3.3. Reasons for the Impact of Healthcare System on Population Aging

The health status of the elderly population is directly related to the selection of elderly care services. Demographic and socio-economic characteristics such as age, marital status, number of children, and monthly income level also greatly affect the demand tendency for service items and methods, as well as the expectation of service expenditure level.The demand for health and elderly care services among the elderly population varies due to individual characteristics. Therefore, diversified, multi-channel, and layered elderly care services should be provided based on their needs, forms, and levels. Therefore, we should actively build a scientific and reasonable health and elderly care service system, focus on improving the effectiveness and efficiency of elderly care service supply, in order to achieve precise services [11]. The impact of the healthcare system on population aging is mainly reflected in extending life expectancy and providing effective health protection for elderly people in various regions.

3.3.1. Differences between domestic and foreign healthcare systems

Singapore's overall healthcare expenditure accounts for between 3% and 4% of GDP. Among developed countries, Singapore has a lower proportion of healthcare expenditure. Singapore's overall healthcare expenditure accounts for 3% to 4% of GDP, making it a country with a lower proportion

of healthcare expenditure. The healthcare service philosophy in Singapore is to provide affordable healthcare for all people, but with a particular emphasis on not relying on welfare, controlling unnecessary government spending, and encouraging the public to work hard.Singapore's healthcare system is renowned for its low investment and high efficiency, with a high cost performance ratio. The healthcare service philosophy in Singapore is to provide affordable healthcare services simultaneously, but with a particular emphasis on avoiding welfare for lazy people, controlling unnecessary government spending, and encouraging the public to work hard. Singapore's healthcare system is renowned for its low investment and high efficiency, with a relatively high cost-effectiveness. Compared to countries where long-term government investment leads to a heavy financial burden, Singapore's achievements are commendable.At the current stage in our country, we need to balance multiple considerations, including controlling the rapid increase in government medical expenditure, improving the efficiency of public health investment funds, and fully covering the medical needs of low-income groups, while meeting the needs of some groups for high-level medical conditions. This is the basic principle for China to steadily promote the reform of the medical system. China has a huge population, and there are differences in income levels and medical insurance payment capacity among different social classes. Therefore, the reform of public health services and medical insurance systems needs to be carefully designed, piloted, and gradually promoted and deepened.In order to improve medical standards and service capabilities, and enhance the satisfaction of the people, public hospitals in China have been making efforts. How to stimulate the intrinsic vitality of public hospitals and establish a sound governance system is the key to the future development and support of China's medical security system for public hospitals. Public hospitals in our country are public institutions that receive differential subsidies and are subordinate to the health administrative department. At present, there are still problems such as unclear management and insufficient transparency in operational management. In order to achieve the healthy development of hospital governance, it is necessary for the competent department to reasonably empower, promote fair competition, improve hospital governance, and unleash its own vitality [12].

3.3.2. Problems faced by elderly people living at home and elderly people in nursing homes

There are some similarities in the problems faced by elderly people at home and those in nursing homes, but there are also some differences. The following is a general analysis of the problems faced by both:

Loneliness and social isolation among elderly people at home: Elderly people at home may face issues of loneliness and social isolation due to busy family members or leaving home, lacking communication and interaction with others.

Daily care and care: Elderly people at home may need daily care and care, such as diet, grooming, dressing, etc. Without suitable family support or caregivers, they may face difficulties.

Safety and health issues: Elderly residents at home may face safety issues in their living environment, such as unexpected risks such as falls and fires, as well as health issues and disease management.Adaptation and social issues for elderly people in nursing homes: After entering nursing homes, elderly people need to adapt to new environments and social circles, and may face difficulties in adaptation and loneliness, especially the lack of companionship from family members.

Cost and economic pressure: The cost of nursing homes needs to be borne by the elderly or their families, which may cause financial pressure on some families.

Nursing and medical services: Elderly people in nursing homes may require nursing and medical services, including daily care, health monitoring, and healthcare, but the quality and accessibility of these services may vary.

Autonomy and dignity issues: Elderly people may face limited autonomy and impaired dignity in nursing homes, requiring the help and decision-making of others.Both home-based and elderly people in nursing homes may face challenges such as mental health issues, lack of social interaction, and loss of independence. Therefore, providing appropriate support and care is crucial for their quality of life and happiness.

The same batch of elderly people with disabilities exhibit the following new characteristics: decreased self-care ability, increased demand for assistance in daily life, weakened economic supply capacity, generally average family and social relationships, weak social support ability, and increased caregiving pressure on family caregivers.The community home care service model plays a crucial role in meeting the medical and elderly care needs of the elderly, improving their health status, and reducing the burden of social elderly care. Due to the aging population, the failure of informal care methods, and the evolution of disease spectrum, the care needs of elderly people in China, especially the elderly, have not been fully met for a long time. Family elderly care is a concrete manifestation of family relationships and functions, as well as the result achieved by family members through negotiation based on different identity, interest needs, and emotional relationships [13]. Age is a factor that affects the duration of care for elderly people in nursing homes. In fact, compared to elderly people, non-elderly people in nursing homes require an average of 24 hours of care. This may be because nonelderly individuals have greater recovery potential and therefore require more care and attention. When elderly people receive care in nursing homes, their ability to take care of themselves is one of the key influencing factors. The stronger the ability to take care of oneself, the less care an elderly person needs every 24 hours. The main reason is that elderly people with better self-care abilities have stronger self-care abilities and lower dependence on care service providers. Therefore, they require less care time, which is consistent with similar research results both domestically and internationally. The care service providers of nursing homes should focus on elderly people with impaired self-care abilities when caring for them [14]. Universal health coverage means that all people can access essential health services without incurring financial hardship. Even in countries with good service coverage and financial protection, the progress towards universal health coverage may decelerate or be limited with respect to the growing older population [15].

4. Conclusion

Through research, this article finds that the healthcare system has a significant impact on population aging. Therefore, a comprehensive and sustainable pension security system should be established by reforming the pension system, increasing retirement age, and encouraging personal pension reserves, to ensure that the basic living needs of the elderly are met. Strengthening medical and nursing services: increasing the supply of medical resources, promoting the integration of medical care and elderly care, improving the level of nursing services, and meeting the growing medical and nursing needs of the elderly population.Provide diversified social support: Strengthen social and spiritual support for the elderly, encourage community organizations, volunteers and other forces to participate in social activities for the elderly, and alleviate their loneliness and social isolation. Encourage intergenerational mutual assistance and family support: Encourage intergenerational mutual assistance among family members, provide appropriate policies and measures, support family care, and support the basic rights of the elderly.Advocate for universal participation in elderly care: Advocate for the whole society to pay attention to and participate in elderly care issues, strengthen the promotion and education of elderly care knowledge, cultivate the awareness of elderly care in the whole society, and form a good atmosphere of common care and support for the elderly. Through healthcare policies, social and family efforts, we aim to provide better protection for the basic rights and interests of the elderly, improve their quality of life, and promote social harmony and sustainable development.

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