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How to Use Modern Technology to Deal with Aging

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Abstract: This paper begins with the current severe aging situation in China, stressing that the future demand of China's aging society for technological development will be rigid demand. Secondly, it analyzes the positive effects of modern science and technology on the aging of the population from three aspects: improving the level of care for the elderly, promoting the social participation of the elderly and promoting the economic development. And then focus on the comparative analysis of the status quo of using modern science and technology to deal with the aging, comparing the international development of modern aging technology with China's. Finally, based on the needs of the aging group, this paper pointed out that the development direction of China's aging science and technology is mainly in the four aspects: medical diseases, daily care, social communication and traffic travel in the future.
Keywords: science and technology; aging; prospect.

INTRODUCTION

Aging has become one of the most important challenges during the development process of the economy and society in the world's major countries. China has the largest population aged 65 years old and above, the fastest process of aging, and the heaviest burden on aging. China's population aged 65 years old and above accounted for nearly 1/4 of the world, more than the sum of the aging population in European countries. Government of China emphasizes the active response to the population aging and calls for a combination of the response to aging and the promotion of economic and social development. And Government of China also stresses a combination of meeting the needs of the elderly and solving the problem of aging, which requires respond timely, scientifically and comprehensively[1].

To respond scientifically, it is necessary to vigorously carry out the scientific research of aging and explore the operation and characteristics of aging society. To respond comprehensively, it should use the economical, political, cultural, social and other measures. Among them, the most important are two aspects: one is the system, the other is science and technology. Implement the system design for the aging society, which needs the strong support of aging science and technology[2]. It cannot establish an effective care network for the elderly without the support of information technology, cannot develop the elderly human resources without the technical support of auxiliary equipment and manufacturing technology and so on.

This paper focuses on the role, status quo and prospects of modern science and technology in coping with the aging population, which hopes to help China to respond to aging.

THE CHALLENGE OF AGING

In recent years, China's economic development has made the world's attention. Economic develops rapidly, at the same time, the population structure has also changed tremendously. After entering the 21st century, China's population aged 65 and above increased year by year, has exceeded the world average population aging level. In the past, the family planning policy played a huge role in China's economic development, which reduced the explosive growth of the Chinese population, but at the same time brought about another negative impact, that is, the decline in the population ratio of 0-14 years old and the increase in the population ratio of 65 years old and above, which leading to a dramatic shift in the age structure of the population. It is expected that the total population of China's elderly will exceed 300 million in 2025 and reach the peak of 440 million in 2051, when there will be one elderly among the three men. At the same time, the proportion of people aged 80 years old and above is growing.

There are prominent contradictions between China's current pension service supply and demand, and

the development of the elderly social welfare is facing a severe test. On one hand, the social welfare management is restricted, the forces of the elderly visit, tracking and security are inadequate and the mode of management is backward, which must be made up and replaced by modern, network, information and intelligence means[3]. On the other hand, the social welfare service is restricted, in addition to the large gap in the elderly beds, the gap of our elderly care workers is nearly 10 million people, while the overall labor supply is showing a downward trend. At present, on the basis of the construction of vocational qualification system and increasing the number of nursing staff, we need to upgrade the level of personnel services, and enhance the technical content of facilities[4]. Therefore, the establishment and improvement of social welfare system not only need the promotion of social policy, but also the support of scientific and technological means. China should grasp the opportunities brought by the new technological revolution and fully apply the scientific means and technological achievements to the transforming process of the modern aging society. We can predict that the future needs of an aging society in science and technology will gradually become rigid demand.

THE EFFECT OF MODERN SCIENCE AND TECHNOLOGY ON AGING

Aging science and technology is the science and technology combined by modern aging science, information technology, elderly conservation technology, elderly medicine, life science and other disciplines. The use of scientific and technical means can provides the best care, health management, health security, safe environment and social participation for the elderly, which can improve the health, welfare and life quality of the elderly[5].

Aging is not only the increase in the elderly population, more important is the demographic changes. In addition to the payment pressure of the pension fund , in the context of low fertility, the supply of labor will continue to decline in the future, and it will be a question that who will provide care in the future[6]. The products and services of aging science and technology in the future not only can replace and liberate manpower, but also can improve the dignity and quality of life for the elderly, achieving a harmonious aging society.

Enhance the level of care for the elderly

The average life expectancy of human beings is prolonged, but the time of healthy life is limited. Diseases greatly reduce the meaning of longevity and happiness, and healthy old age to become the current urgent to solve the problem. Despite the rapid development of medical technology, the decline of physiological functions can not be solved only by medical. In addition to medical care, long-term care is increasingly becoming the urgent needs of the elderly. As a result of the decline in fertility, labor supply is on a downward trend, and who will provide care services will become increasingly difficult problems. But the development of science and technology can greatly delay and reduce the process of the performance decline, which is an excellent means to replace or assist manpower.

Promote social participation for the elderly

Heath is mainly presented as an individual state, but only maintaining the physical health of individuals is not enough to form a dignified old life. The maintenance of elderly happiness, like the young and middle-aged, needs to maintain social interaction, which can avoid the elderly to have a sense of being abandoned by the community. From the perspective of social governance, promoting the social participation of the elderly can promote the development of elderly human resources and is conducive to building a harmonious society[7].Through the extensive application of information technology, building the “Internet + pension” platform can promote the social participation of elderly to a large extent.

Promote economic development

From the perspective of economic development, China's current lack of supporting medical facilities restricts the consumption of older groups. Therefore, the development of aging science and technology can stimulate the needs and consumption of the elderly, so as to promote economic development[8]. From the actual situation in China, the generation of 1950s has entered the elderly stage. The generation of 1950s and 1960s have very different wealth accumulation, consumption levels and consumer attitudes from the generation of 1930s and 1940s.Therefore, after years of preparation and accumulation, the elderly consumer market is about to enter the rapid development and even blowout period. If the market is developed effectively, it will be great significant to form a new economic growth point and drive economic growth.

A COMPARISON OF THE PRESENT SITUATION OF MODERN SCIENCE AND TECHNOLOGY 'S RESPONSE TO AGING

International development situation

In recent years, from a global perspective, the development of aging science and technology is rapid and the effect is remarkable. Developed countries have been effective in research and development of aging science and technology. The European Union, Germany and Japan have introduced technology development strategy, which increase the innovation and development of technology and product, and develop the aging science and technology vigorously, forming a

more systematic, mature products and services market of aging science and technology[9].

Enterprises enter the aging industry actively

Technology has penetrated into all aspects of people's lives, the target audience is not just young people. Recently, in the international market, there are many technological products for the elderly. According to statistics, in the global market, there are 60,000 kinds of aging products, of which there are 40,000 kinds in Japan. Toyota, Panasonic, Philips and other multinational companies have entered the aging market, and some of them even regard the aging field as the main business in the future.

The development of market is abundant

Unlike young people, the repeating store rate is actually high. The resource guide of shopping center prevented by the Centers for Disease Control showed that shopping malls and centers are a great place to walk for the elderly which has a rest area in the mall for the elderly.

At the same time, diet structure of the elderly continued to optimize in Western developed countries, they ensure convenience while more emphasis on nutrition and health. Due to the decrease of physical immunity caused by higher age, the elderly prone to various diseases, which makes the need for medical and health care become more and more.

Continue to invest in research and development

Many countries have strengthened their investment of research and development in the health sector, including the elderly health sector. Among the 40 billion dollars investment of research and development in the European Union program, there are 7.5 billion dollars investment in the health sector. In July 2012, the government of Japan identified the "Japan Regeneration Strategy", which regards the health care as the focus area of investment, planning to increase the market demand to 5 billion yen and the jobs to 2.84 million by the end of 2020.In May 2014, the University of Manchester developed a magic carpet, which can predict the timing of the fall of the elderly, and is conducive to elderly care.

The employment system is mature

Foreign countries, especially those with a high degree of aging in the West, their government are committed to establish a comprehensive pension service system and an aging service industry. Among them, the British City Hall will train the community care staff regularly. The development of the United States pension service industry is relatively early, Duke University opened the elderly nursing professional courses in 1966.Nurses who passed the American Nurses Qualification Examination can engage in the professional work of the elderly care. Japan has a high degree of emphasis on pension service and management staff. Since 1971, the government of Japan has stipulated that social welfare institution managers must pass relevant courses and examinations.

The development situation of China

From the status quo of the development in China, China's research, development and application of aging science and technology started late[10]. Although during the 20 years, China achieved some results through the continuous absorption of international advanced science, technology and experience, and improved and deepened the research methods and technical means continuously. But it is undeniable that the development of China's domestic science and technology is relatively young, and its scientific research and development process has many difficulties, which directly causing a big gap between the development situation and level of China and international market.

The aspect of business entry

The research and development of aging science and technology are lack of innovation and with low technology content. China's independent research and development of aging technology products mainly stay in the low-tech and low-grade products. Aging technology products face the problems of the lack of the research and development of science and technology, fewer varieties of products, the relatively high prices and so on.

The supervision of market supply is absence, and the order is not standardized. At present, the domestic products market of aging science and technology lack of industry regulation and standards. The industry of elderly health care products has serious problems, although there are a wide range of elderly health care products, many shoddy products flow into the market. At the same time, there are false propaganda, cheating marketing and other issues in the industry of elderly health care products for a long time.

The positioning of market is fuzzy and the development of industry is unbalanced. The aging community also has a strong uniqueness in terms of its own needs[11]. However, at this stage, many enterprises of elderly science and technology still lack of meticulous grasp of the needs of the elderly group, and the development of products of elderly science and technology lack of direction, leading to the very general market response. At the same time, the development of various sub-sectors of the industry of aging science and technology is not balanced. From the current view, the market of elderly care products and health care products is more active, its products are relatively rich in the types and the technology; and the market of aging

science and technology culture and aging science and technology commodity is relatively cold, resulting in slow development of the industry[12].

The aspect of market development

The potential of the aging consumer market is unlimited, yet to dig deep. Enterprises generally believe that the consumption of the elderly is conservative, which caused the spending power of the elderly often been overlooked[13].With the increasing population aging, the growing demand for consumption and pension services of the elderly make the elderly market will be infinite potential. According to the prediction of relevant research institutions, by 2020, the size of China's elderly consumer market will reach 3.3 trillion yuan.

Product functionality for the elderly needs to be strengthened. In addition to the basic goods of wear, the demand for special functional goods of elderly is also very strong.35.8% of the elderly reflected that, in the supermarket, the species of food that has low sugar, low salt, low cholesterol and other needs is too little, while the other 13.4% of the elderly said that they had not heard of such food.

The industry of pension service of the elderly is blank. The data of relevant survey shows that the proportion of the elderly who has enjoyed the specialized services in the shopping area is only 3%, 32.8% of the elderly did not have enjoyed the special services, and 20.1% of the elderly have not heard of the specialized services for the elderly. In the aspect of the services of elderly leisure and entertainment, 11.9% of the elderly said that they hope to have chess and other entertainment services, and 3% of the elderly expressed that they need psychological services.

The aspect of the product development

In recent years, the total amount of the investment of research and development and the proportion of GDP in China are growing rapidly. In 2015, the spending of China's science and research reached 1422 billion yuan, with an increase of 9.3% over the previous year, accounting for 2.10% of GDP, with an increase of 0.05%, which has become the second largest investment of research and development in the world, only after the United States. On the whole, the absolute value of the expenditure of research and development in China is high, but the per capita is not high.

The aspect of practitioners personnel

The structure of the practitioners personnel for the elderly is unreasonable. From the age structure, most of the pension service staff are 40-59 years old, the overall age is high. And then from the level of education, most of the pension service staff have the junior high school education, the number of staff of college and above is less, which indicates that the current talent structure of pension service personnel is unreasonable, and the professional level is relatively low.

The service level of personnel for the elderly is low. The number of China's pension service staff is getting more and more, but in the overall view, the quality of the service team is not high, the level of specialization is low, and there is a serious lack of professional talent, leading to the existing service staff has been unable to meet the development needs of the pension industry.

There is a serious loss of service workers for the elderly. From the current domestic situation, there are problems of short working hours and liquidity in the group of practitioners. This is due to the low wages, tired working and low welfare of elderly care, coupled with the impact of traditional ideas, many people think that the social status, payment, protection measures of elderly care services is low and inadequate, leading to the serious loss of elderly care service personnel, and the personnel team is extremely unstable.

A Comparative Analysis of the development of International and China

By comparing the status quo of research, development and application of aging science and technology between international and China’s, it is not difficult to find that, there is a large gap between developed countries and China, specifically in the enterprises of science and technology, the consumers, the scientific research institutions and service personnel.

In the aspect of enterprises, the international enterprise developed products related to all aspects of life for the elderly group, which can not only meet the needs of the elderly groups, but also can create profits for enterprises, even can produce a positive social effect. As for the domestic enterprises of China, due to the constraints of the internal and the external environment, although there are occasionally bright spot in technical field, the overall development is still at a low level. At the same time, the demand and supply does not match in the domestic elderly market of China, which makes the market is still in the breeding stage.

In the aspect of consumers, in Western developed countries, due to the higher level of social welfare for the elderly and the consumer psychology and habits developed after long-term, the level of the consumer spending of the elderly is relatively high. Especially for the elderly of high years old and frequent physical illness, their needs of medical and health care have been the driving force of the research and development of international aging science and

technology. With the increase in the population and proportion of the elderly in China, the development of the market for the aging technology industry will also be infinite. But the small scale and low level of development of the aging industry greatly limited the purchasing power of the elderly consumers.

In the aspect of aging research institutions, the developed countries with high degree of aging have paid great attention to the research of the aging development, their governments support the establishment of a number of research institutions, and their college and universities also have paid great attention to the theoretical research of aging. In terms of China, there are still relatively few scientific research institutions for the study of aging, and the role of the overall planning and key guidance is very limited.

In the aspect of practitioners, in the western developed countries with a high degree of aging, their governments are committed to establishing a comprehensive pension service system and service practitioners for aging industry. And the cultivation of service workers for the elderly in China has not yet formed a complete system, and there are still problems such as unreasonable structure, low professional level, imperfect training plan, serious loss and so on.

THE DEVELOPMENT PROSPECT OF CHINA 'S AGING SCIENCE AND TECHNOLOGY

Objectively speaking, at present, China's aging industry is in a period of rapid development. The macro factors of population, economic and policy provide a promising basis for the development of aging industry. With the accelerated process of urbanization in China, the transformation of family structure, inter-generational relations and aging concept provides a micro preparation for the development of aging industry. Therefore, aging should not be treated negatively, should look at the status quo of aging, and adhere to a positive attitude towards aging. According to the needs of the aging population, we divide it into several major aspects: medical disease needs, daily care needs, social communication needs and traffic travel needs[14].

Medical disease needs

Telemedicine technology. In the home-based pension system, the development of cloud technology is particularly important, you can use intelligent, technology-based means to establish a sound telemedicine. At the same time, in the specific technical aspects, the government should vigorously support some enterprises that provide telemedicine services, and help their results to apply into many pension projects and communities.

Disease management technology. Although there is a big gap of the disease management technology between China and the developed countries. And the development of the concept of disease management in China still needs scientific proof, but some specific management techniques can be applied to our pension practice.

Daily care needs

Wearable equipment manufacturing technology. Now the market of wearable equipment is concerned about the young groups, but with the increasing degree of population aging, the aging group is bound to become the focus of product manufacturing technology. It can be seen that the development of wearable equipment that suitable for the elderly population can help to build a safe, convenient, efficient and intelligent lifestyle for the elderly.

Family intelligent robotics. As an important branch of the robot industry in recent years, family intelligent robots will play an important role in aging care.

Remote care training and supervision techniques. At present, China lacks the resources of aging care which is urgently needed by the aging population, providing the space for the development of remote care technology. China needs to innovate the top-level design of the old age industry planning, establish the intelligent remote care system, and rely on the modern Internet, network and information, to provide remote care for the elderly.

Social communication needs

Cognitive assessment techniques. In the future, China will develop a cognitive evaluation system for the elderly group. And it is necessary to consider whether the operation mode is suitable for the elderly group, and choose the way combined of the interactive game device and the touch computer, which can make it easy to get started.

Social network support technology. Social network support technology can be used for the elderly through the sharing of media, management blog and so on, people can quickly get the information of the elderly group who need help. With the extensive spread of social networks, it can help to provide substantive assistance for elderly group rapidly.

Traffic travel needs

With the acceleration process of urbanization and aging, the demand for transportation is becoming more and more urgent. Therefore, how to conduct a reasonable traffic planning and introduce appropriate policies is an inevitable problem that a country should deal with in the future. According to the specific

circumstances, the timely development of transport plans, to a certain extent, can ease the huge pressure of the traffic demand of aging.

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