

Research on the Intelligent Old-age Care Mode Based on the Combination of Medical and Health Care Under the Perspective of "Internet +"

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Abstract—This paper summarizes the development status of old-age care in Shandong province, compares and analyzes the advantages of three mainstream old-age care modes, and demonstrates the feasibility of "Internet + " smart old-age care mode by taking the combination of "Internet +" and medical and nursing care as the starting point, and puts forward to construct the intelligent endowment innovation mode which ADAPTS to Shandong regional economic development. Guided by the regional economy of Shandong Province, the company has established the concept of "combination of medical and health care" wisdom and pension, and proposed development strategies such as policy regulation, restructuring and optimization of medical and pension resources, talent team building, information platform construction and insurance protection.

Keywords—Internet +; Combination of Medical and Health Care; Pension Mode; Intelligent Pension; Innovation Mode

I. INTRODUCTION

The survey results show that the aging of the population, aging, empty nesting and disability in Shandong Province are very obvious^[1]. Solving the problem of old-age care is imminent. Among them, the pension of the disabled and the semi-disabled old-age are particularly difficult. They are more concerned with disease treatment, rehabilitation nursing and spiritual communication. The combination of health care and pension modes can provide medical services while providing daily care, and solve the problems of "difficulties in old age" and "difficult to see a doctor". In the context of the aging of the population and accelerated disability, the combination of medical treatment and old-age care is an innovation of old-age care for the aged. At present, domestic research on this mode has just begun, and a unified management system has not yet been formed. Although Shandong Province has achieved certain results in this respect, it is still in the early stage of development. Therefore, the paper has carried out in-depth and detailed research on the development of intelligent old-age security mode of combination of medical and health care in Shandong Province, in order to provide a useful reference for the development of old-age security mode of combination of medical and health care.

II. SUMMARY OF RESEARCH STATUS AT HOME AND ABROAD

A. Status of Domestic Research

Modern pension service modes mainly include: families, communities, institutions, migratory birds, tourism, and housing pensions^[2]. Lu Hongping believes that pension modes can be divided into two types, namely family pension and social pension^[3]. The former is living at home, relying on their children to support. The latter is a form of centralized pension in fixed places and a commercial activity of welfare nature. Yin Zhigang believes that old-age care should be based on family, supplemented by community care and social old-age care, while Rong Yan puts forward a new idea of housing for old-age care. Wen Jie pointed out the old-age mode of home, family, society and institutions^[4]. When investigating what kind of old-age care method is chosen in Shandong Province, it is found that the three traditional ways of providing for the old-age, family, community and institution are the absolute mainstream pension modes in Shandong Province.

With the development of the economy, more young people from Shandong Province have entered the city, resulting in a surge in the number of empty nesters. The pension institutions in Shandong have problems of insufficient supply and lack of structure, and the service projects are not enough to meet the actual needs of the old-age. The older you are, the more medical resources you need, the higher the prevalence. It's very common for chronic diseases to have a long hiding period, multiple organs, multiple diseases, so it is necessary to implement the intelligent old-age care mode combining medical care and old-age care.

B. Current Research Situation Abroad

Denmark has studied the mode of Combination of medical and health care at a very early time. By increasing capital investment and policy support, it has increased the training and assessment of medical staff, focusing on cultivating all-round doctors and nurses, increasing the number of physicians in the old-age institutions, and improved the ability of medical staff through constant practice. The Australian family doctor system provides full-time professional care for every old-age. Japanese

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pensions are family-based and focus on disease prevention and health management, which long-term care insurance was implemented long ago to reduce or transfer risks. PACE is a well-established medical support integration program in the United States. The multidisciplinary team of general practitioners, specialists, nurses, pharmacists and rehabilitation specialists provides comprehensive and integrated medical care and professional nursing for the old-age[2]. In Britain, community pension is the most suitable way. Godfrey studied the proportion of information utilization among the old-age, and analyzed the situation of the old-age using the Internet. Eastman found that the interest of older people in using the Internet is directly proportional to their income level. Andrew analyzed the UK community wisdom pension system, which integrates the resources of the whole society, including family care, neighborhood help and government subsidies. In a word, wisdom pension abroad is a system consisting of social organization, residential community, the old-age, pension mode and environment.

III. ANALYSIS OF MAINSTREAM PENSION SERVICE MODE IN SHANDONG PROVINCE

A. Analysis of Family Pension Mode

According to the statistics of the literature, the survey of 2932 old-age people aged Sixty years or older in seven cities including Jinan shows that 98.0% of the old-age are family-based and 2.0% are institutional-based, providing for the aged in Shandong Province^[5]. Its advantages are that it can live with family members at a low cost, while meeting the material and spiritual needs of the old-age, but also the inheritance of traditional virtues. However, this way has also brought about some drawbacks, such as excessive pressure on children, family conflicts and security issues.

B. Analysis of Institutional Pension Mode

At present, the development of pension institutions in Shandong Province is still immature. There is a big gap between private pension institutions and public institutions in personnel recruitment and medical equipment acquisition. The government pays less attention to it and has less capital investment. At present, there are only about 20 beds per 1,000 people, which is far below the state regulations. In addition, the number of people is relatively low, and the service is not thoughtful enough to meet the needs of the old-age. Its advantages are that it can enjoy the same warmth as family pension and the medical services that family pension does not have, which reduces the burden of children, while institutions provide a lot of employment opportunities to society. However, there are shortages of funds, different levels of professional competence of service personnel, and the overall low level of service.

C. Analysis on the Mode of Home-based Pension in Community

Community pension has gradually been recognized by the old-age. First of all, the living place and environment are very familiar. It meets the spiritual needs of the old-age to live with their families and communicate with their old friends. In

addition, resources are reorganized and optimized in this way, which reduces the cost of pension. Secondly, the activities of community organizations can adjust their lives so that they are not easily bored and bored. Thirdly, the community can also provide such services as day trusteeship, three meals, regular promotion of scientific health care, rehabilitation and health care to the old-age, so that the old-age can live a healthy and secure life in their old age. However, there are still shortcomings in community home, such as lack of funds and places, shortage of professional service personnel and single service.

In summary, the three pension modes have their own advantages and disadvantages. With the development of the Internet and the gradual increase of the old-age, the contradiction between pension and demand is becoming increasingly prominent. "Internet +" is the major trend of social development. Therefore, the integration of the Internet technology to optimize medical and pension resources in family, community and institutional pension is more convenient through the information platform. High-quality medical and nursing service is the necessity of the development of wise old-age pension, and also the innovation of traditional old-age pension mode. It has very important practical significance.

IV. FEASIBILITY ANALYSIS OF "INTERNET +" INTELLIGENT PENSION MODE

First of all, the state has given "Internet +" great policy support, put forward the implementation plan based on the "Internet +", and promulgated a series of related policies and regulations to promote "Internet +", including: the opinions of the general office of the State Council on promoting the development of "Internet + medical health" and the notice on the second batch of demonstration experiments on the application of intelligent health care for the old-age. The Ministry of Civil Affairs and the Development and Reform Commission have also carried out reforms and innovations in the field of pension, and established many pension information points.

Secondly, with the development of Internet technology, the innovation and upgrading mode of the "Internet +" traditional industries is gradually developing. The application of smart phones and smart wearable devices, as well as the popularization of optical fiber users and 4G applications make the mode feasible in technology.

V. "INTERNET +" PERSPECTIVE BASED ON COMBINATION OF MEDICAL AND HEALTH CARE AND INTELLIGENT PENSION MODE CONSTRUCTION COUNTERMEASURES

A. Policy Norms

Firstly, we should strengthen supporting policies, formulate and refine supporting policies and legal norms based on an intelligent pension mode combining of medical and health care, play a leading role, actively promote the deepening reform of medical care and pension, and realize a good intellectualized pension ecological system with the combination of medical and health care and maintenance, so as to benefit more old-age. In

addition, medical reimbursement and long-term insurance policies and norms are established and improved to provide guarantee for the development of the intelligent pension mode. To implement various preferential policies, intelligent pension is a complex project related to the people's livelihood. The government should increase financial support, focus on supporting the assumption of infrastructure for intelligent pension, set up special funds, and formulate and implement preferential policies.

To implement various preferential policies, intelligent pension is a complex project related to the people's livelihood. The government should increase financial support, focus on supporting the assumption of infrastructure for intelligent pension, set up special funds, and formulate and implement preferential policies. Private people should enjoy various preferential policies, including land use and taxation, like public pension institutions, to further improve and quantify various tax preferential measures, and to promote the construction of information platform through project support.

We should strengthen the government's supervision policy, play a leading role in supervision, coordinate the cooperation of health, human resources, social security, civil affairs and other departments, clarify responsibilities, and put an end to abuses and malfeasance. We should make macro-control and supervision over pension qualifications, employment qualifications, occupancy standards and reimbursement, and accept supervision and management from all walks of life.

B. Reorganization and Optimization of Medical and Pension Resources, Integration of Innovation and Development

Old-age institutions should cooperate with nearby medical institutions for a long time to optimize the allocation of resources. Medical institutions not only have abundant medical infrastructure, but also have a large number of professional medical teams. The combination of the two makes the old-age institutions no longer need to waste money to purchase valuable medical equipment. For the old-age in need of treatment, they can be directly admitted to the hospital through the green channel for treatment, and then go back to the old age. Rehabilitation physiotherapy in institutions has greatly reduced the cost of pension institutions.

The system of graded diagnosis and treatment should be implemented, and the first visit to the community hospital should be made when the patient is ill. It is necessary to refer to the hospital, make full use of the community medical resources, and alleviate the pressure of the large hospital. Community hospitals should also establish long-term cooperative relations with superior hospitals and work together for common development.

The family doctor contract system is implemented, and through regular home visits and testing, the old-age can enjoy professional and meticulous medical services at home. At the same time, the old-age can also call consultation and notify doctors to provide quick home service. If the condition is serious, they can directly contact the superior hospital for treatment without complicated process.

C. Talent Team Construction

1) Establishment of Training Mechanism

Firstly, the state should add nursing-related majors or courses, expand the scope of financial support, implement free or subsidized policies for students in schools. Universities should actively respond to the call of the state, give preferential policies in professional training, curriculum construction and teacher team construction, so as to ensure the quality of teaching and the goal of personnel training. Secondly, the exchange and cooperation between universities and medical and pension institutions should be strengthened. Universities should regularly hire experts and professors to teach in schools, teach theoretical knowledge and impart practical experience. Finally, teachers and students should regularly go to medical and pension institutions for on-the-job training to improve the level of professionalization.

2) Establishment of Training Mechanism

Firstly, the training mechanism of the old-age service personnel should be established, and the new recruits should receive pre-job training and certification. Secondly, the regular training system should be established. Hospital experts should be invited to train the theory and professional skills of the new recruits regularly, and their achievements should be evaluated. In addition, we can enhance practical experience and professional ability by going out to study or practicing in medical institutions. Finally, we should implement the regular examination system and set up the goal and assessment mechanism of lifelong learning.

3) Establishing Competition Mechanism

Firstly, we should establish a performance appraisal system, which directly links job performance with wage level, so as to improve the enthusiasm and enthusiasm of the work. Secondly, the promotion mechanism should be established. Different posts can be divided into three levels: primary, intermediate and senior. In each level, several grades can be divided, so that they can be promoted naturally if they meet the requirements. Those who do a good job can be promoted by breaking the ranks, creating a fair competition mechanism and platform, and promoting the further promotion of their career.

D. Establishment of Combination of Medical and Health Care Insurance System

1) Establishing Long-term Care Insurance System

Long-term care insurance is the guarantee of medical care for the old-age. We should establish a long-term insurance mechanism and expand its coverage[6]. The premium should be paid by individuals, units and the government in a reasonable proportion. Long-term care insurance system should be universal. With the gradual increase of the number of old-age in China, the nursing needs of the old-age are also increasing rapidly. Therefore, the age of insurance should not be too high.

2) Improving the Number of People in Commercial Insurance Projects

The government should encourage commercial insurance companies to develop products suitable for different old-age according to their actual situation in Shandong Province. They

can evaluate the comprehensive income, consumption level, health status and disease of the old-age in an all-round way, and price according to different risk values and grades. In addition, with the increasing number of residents will also increase the risk of operation and management of pension institutions, commercial insurance should also be introduced to solve the potential security risks and risks in the management and operation of pension institutions.

E. Establish "Internet +" Intelligent Service Platform

Intelligent service platform of Shandong Province is established by combining Internet technology with relevant departments of medical treatment and pension. Integrating the electronic archives of the old-age, forming an integrated service system of medical care, pension and insurance, wearing intelligent wristwatch and other intelligent devices for the old-age, real-time detection of the physical condition of the old-age, and real-time upload the detection data to the cloud database, can also set up medication reminders, precise positioning, intelligent tracking navigation and safe electronic fence, etc., to protect the safety of the old-age at anytime and anywhere[7]. SOS can also be used to call for help to deal with emergencies, timely response and treatment at the APP terminal, to ensure the health and safety of the old-age.

In addition, pension institutions can also develop their own intelligent service platform, and connect with provincial service platform, install cameras at the bedside of the old-age, check the situation of the old-age at any time, and have video interactive chat with their families, so that the old-age can feel the care of their families at any time. At the same time, the platform can also monitor the work of doctors and nurses, and put forward suggestions for further improvement.

Based on the new mode of Intelligent Old-age Care Service which combines of medical and health care, public data and government information can be linked and shared. The government can understand the livelihood needs of the old-age through the big data on the intelligent platform, optimize the allocation of social medical and old-age resources, enrich the content of pension services, expand the pension services channels, improve the quality of pension services, and ultimately improve the level of public service for the aged.

VI. SUMMARY

Through the investigation, it was found that family pension mode, community pension mode and institution pension mode

are the three mainstream modes in Shandong Province. Using the platform of Internet technology, integrating and optimizing medical and pension resources to achieve more convenient and high-quality medical and nursing services is the inevitable trend of the development of intelligent pension, and the innovation of traditional pension mode has been realized. Based on this, this paper puts forward the mode of intelligent endowment based on the combination of medicine and nursing under the perspective of "Internet +". It also discusses its development strategy from the aspects of policy standardization, reorganization, optimization of medical and pension resources, talent team building, information platform construction and insurance protection.

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