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Survey and Research on the Demand for Intelligent "Health Cabin" Based on the Concept of Health Management

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Abstract: *The normalization management of the Covid-19 and the "Healthy China 2030" continued to advance, the concept of health management continued to be popular, people's health element was improving day by day, the health model was no longer a single disease model, people were more pursuing the health management of the entire health life cycle, and the health cabin came into being under this background. This paper conducts a survey and research on the social population through a questionnaire survey method. In response to the current situation and needs of the construction of "healthy cabin", by the SPSS software is used for data analysis. Suggestions are proposed from four aspects: research significance, research results, research strategies, and prospects, aiming to provide new ideas and methods for the construction of healthy houses.*

Keywords: *healthy China, healthy cabin, construction status, health management, intelligence*

1. Introduction

The Political Bureau of the Central Committee of the Communist Party of China held a meeting on August 26, 2016 to review and approve the outline of the "Healthy China 2030" plan for the first time. On July 19, 2019, the "Healthy China Action (2019-2030)" was once again introduced, proposing the goals and tasks of building a healthy China. With the establishment of the Healthy China goal, the country attaches great importance to a healthy economy. A health cabin is not only a general term for healthy places with only health attributes, but also integrates multiple basic public health functions, strengthens coordination and cooperation, and jointly prevents and tolerates health issues. The global epidemic of COVID-19 in 2020 forced many cities in China and around the world to address health related issues, such as national health and welfare, urban planning and infrastructure construction, governance, and emergencies system structure in health crises [1]. At the same time, promoting the construction of a healthy China is an important foundation for building a moderately prosperous society in all respects, and also the foundation for socialist modernization construction. Healthy cabin have once again become a crucial step in the international 2030 Agenda for Sustainable Development and the latest step towards public health.

2. Research status and significance of healthy cabin at home and abroad

Paul Zane Pilzer, an American economist and economic advisor to the second term of the President, wrote in his book "The New Health Revolution" that, in contrast to the disease industry, the health industry is "one fifth of the world's wealth". It has also become a world-class star industry after the automobile and electronic information industries. [13]. Health management services are an emerging future industry in the field of health, and the rise and development of global health management services are driving the development of healthy industries and becoming a new engine for global economic development [2].

2.1 Domestic research status

In order to actively address the risk factors of chronic disease behavior and implement the requirements of "strengthening national health education and actively advocating healthy lifestyles" in the "Eleventh Five Year Plan", the China Center for Disease Control and Prevention has established a national healthy lifestyle behavior as a whole action objectives. Afterwards, nine types of health

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support environments, including health huts, were actively created nationwide. There are 11000 in 30 provinces, municipalities, autonomous regions and Xinjiang Production and Construction Corps in Chinese Mainland (not available in Tibet). Although the number is large, there are also problems such as uneven geographical distribution, unreasonable opening time and space area, and unscientific service processes and teams [3].

2.2 Current research status abroad

Health examination, as an industry, first appeared in the United States in the 1940s. With the progress of society, research on healthy cabin in foreign countries is also constantly updated. The SMARTRAQ research program was launched in Atlanta, United States, combining the application of healthcare facilities such as smart health hats with policy related research methods to monitor SMARTRAQ's comprehensive air pollution, travel patterns, and gait data throughout the community, and evaluate air quality benefits. This study also used Smart Health Cabin's scenario planning software. A comparison between community-based planning and current vehicle centric trends indicates that increasing walking can improve the air quality of existing populations and activity centers. With the construction of the Smart Health Psychological Assessment Booth and the construction of the Australian Community Health Center, public opinion and pressure will be incorporated into planning and production by strengthening the psychological mechanism construction of the Smart Health Center. It also emphasizes the importance of decision-making and measuring urban emotions and stress. In addition to addressing health challenges, various smart health hats in China are also trying new management strategies for smart health hats. Countries around the world are also giving new missions and significance to intelligent health guardians.

3. The necessity of building a healthy cabin

On the other hand, a healthy cabin can help improve the quality of health, save health resources, achieve industrial economic benefits, and promote the development of related health industries. On the other hand, addressing issues such as aging and chronic diseases in Japan, meeting people's diverse and high-quality health needs, and building a healthy China are also very important. Healthy cabins are an industry that combines economic and social benefits.

3.1 Economic effects

3.1.1 Promote the reform of the health demand structure and promote the achievement of the Healthy China 2030 goal

The "Healthy China 2030 Plan Outline" points out that it is necessary to build healthy cities and healthy villages and towns, improve the public health system, and strengthen health services for key populations. The health cabin has strengthened public health monitoring, which is of great significance for improving residents' health awareness, implementing "three early" prevention, effectively improving residents' quality of life, and promoting innovation and development of the grassroots medical and health system.

3.1.2 Promoting the establishment and improvement of digital platforms

The core of a healthy cabin is to effectively utilize the health data obtained from residents' testing, and conduct health assessment and decision-making on its risk factors. The health cabin can dynamically manage residents' health information through internet technology, achieving nationwide connectivity and real-time updates. The combination of Internet plus health concept and health cabin has important guiding significance for effectively solving problems such as insufficient information interaction, and truly promotes the information technology revolution.

3.1.3 Promoting the development of the health industry

As an emerging grassroots health site, the core task of smart health home is to effectively utilize validated resident health information and make health decisions based on big data and artificial intelligence analysis [11]. The construction of a healthy cabin not only meets the health needs of residents, but also establishes a healthy economy with a complete system and optimized structure, and is a large enterprise with strong innovation ability and international competitiveness. It is very important to become the backbone of the national economy.

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3.2 Social effects

3.2.1 Beneficial for solving the cost-effectiveness problem of public health

As a pioneer in conserving health resources and improving national health literacy, health huts play a crucial role in solving public health problems. According to a study by the Center for Disease Control and Prevention of Harvard School of Public Health, 80% of heart disease and diabetes cases, 70% of stroke cases and 50% of cancer cases can be prevented through medical measures. American experts have also calculated that for every one yuan spent on medical expenses, it can save 8.59 yuan in medical expenses and 100 yuan in rescue expenses. Research has shown that investing 1 yuan in healthcare can reduce medical expenses by 3-6 yuan. Dr. Edington W. from the University of Michigan proposed the "10% -90% method". Healthcare can reduce 90% of personal and corporate health costs to the original 10%. Currently, the increase in medical expenses and economic burden has become a common global problem. On the other hand, from 2003 to 2013, China's total medical expenses increased by 16.8% annually, more than twice the GDP growth rate during the same period. On the other hand, due to the impact of the epidemic, Japan has entered a "new normal" of slowing economic growth, and the surge in medical expenses has caused a heavy burden on China's finances, which is an important factor affecting the construction of a healthy China. Therefore, the development of the health metallurgical industry will help solve the current public health problems in China [4-5].

3.2.2 Helps to address issues of aging and chronic diseases

Currently, aging and chronic diseases are becoming major social issues, affecting Japan's economic development and increasing the burden of treatment. According to the results of the seventh population census in 2020, the population aged 65 and above in China is 190.63528 million, accounting for 13.5% of the total population. The population aged 60 and above is 264018766, accounting for 18.70% of the total population. By 2030, China will become the country with the most severe aging population in the world, and OCED predicts that the proportion of people aged 65 and above will surpass Japan. According to data, only 10% of China's population meets the health standards of the World Health Organization, about 25% of the affected population, and about 65% of the population have quasi health conditions. "In 2013, 382 million diabetes patients worldwide spent US $548 billion, an increase of 55% and 14.4%, respectively, to reach US $592 million and US $627.3 billion by 2035[12]. It is expected to increase further (IDF, 2013). Some scholars studied the burden of disease or disability adjusted life years (DALYs) in China from 1990 to 2010 the changes have led to 85% of deaths among Chinese residents being caused by chronic diseases. Domestic and foreign scholars have shown that the intervention of health management can contribute to healthy aging and reduce the occurrence and development of chronic diseases[6-7].

4. Research objects and methods

This survey adopts a questionnaire survey method, and 210 online questionnaires were designed and distributed through the Questionnaire Star website. 206 valid questionnaires were collected, with an effective response rate of 98.1%. The questionnaire responses were standardized and the content was effective.

5. Research results

5.1 From the supply side of the development model of healthy cabin

Table 1: Ideal staffing for a healthy cabin

Health officer	Number of people	Constituent ratio (%)
Health manager	163	21.0
Group	150	19.3
Nurse	105	13.5
Dietitian	124	15.9
Psychological consultation teacher	123	15.8
Exercise instructor	113	14.5

In terms of human resources allocation for smart health huts, it is recommended to have the highest

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number of health managers, 163 people, followed by general practitioners, with a support number of 150 people. The two professions with the lowest support number are nurses and sports instructors, with 105 and 113 people respectively. As is shown in Table 1and Figure 1.

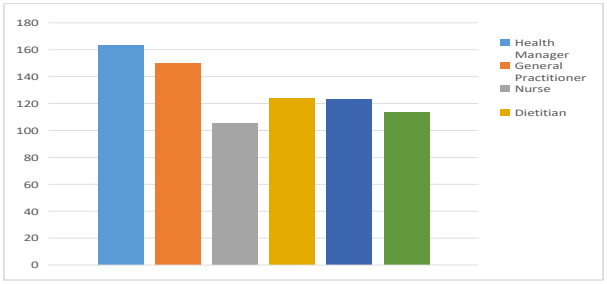

Figure 1: Ideal staffing for a healthy cabin

5.2 From the perspective of residents' demand for self inspection projects of health huts

According to residents' self-diagnosis requirements, blood pressure measurement is the greatest demand, accounting for 173 people. The second is a blood glucose testing program with 167 participants. The third is a self-assessment of height and weight, waist circumference and hip circumference, with 151 participants. Body composition analysis of 128 people is the least popular. From the analysis of smart home construction sites, the first requirement is to install smart health homes in a community of 169 people. The second is a 15 person business district, and the third is a 14 person cultural district. The industrial area with the least demand is for 8 people. As is shown in Table 2 and Figure 2.

Table 2: Ideal service for a healthy cabin

Purpose	Number of people	Constituent ratio (%)
Disease treatment	135	65.5
Physical examination	176	85.4
Chronic disease management	130	63.1
Health guidance	172	83.5
Other	9	4.4

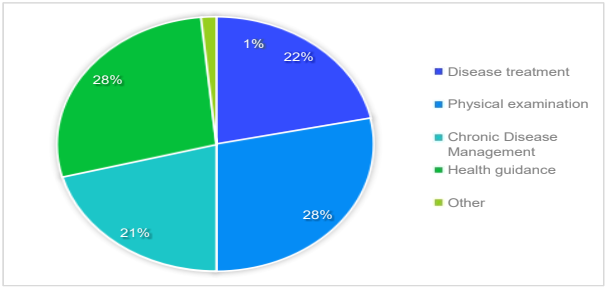

Figure 2: Ideal service for a healthy cabin

6. Discussion and analysis

6.1 Single service mode

There is a contradiction between the service content of traditional health cabin and the current social needs, as well as the health needs of residents. Most health cabins are established to meet the performance indicators set by superiors, and the service content can't keep up with the changes of the times, and a single service content also lacks systematicity for the construction of a healthy cabin [8].

6.2 Unreasonable personnel allocation

Intelligent health cabin need to be equipped with sufficient personnel according to the needs of local health services, but in some areas, the work abilities of medical personnel are uneven and the

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managers are uneven. There are issues with fuzzy and insufficient rating indicators [9].

6.3 Low equipment utilization

The health cabin aims to provide residents with safe, effective, comprehensive, and convenient services. It is of great significance for early prevention, detection, and treatment of residents' own health status and diseases, and also plays a crucial role in the construction of a healthy China [10]. At present, the equipment utilization rate of health cabins in China is not optimistic. Due to the single equipment, lack of guidance, and relatively weak health awareness among residents, most of the equipment costs invested are not proportional to the health benefits generated.

6.4 Insufficient information interaction and islanding effect

The existing information systems for health cabins are mostly built around specific areas, relatively closed, and have the phenomenon of information silos. Due to the backwardness of information technology construction, traditional health cabins are hindered in the processes of risk factor collection, risk warning assessment, and intelligent decision-making when dealing with wide-area public health prevention and control events [14].

6.5 National health literacy needs to be improved

Due to income constraints and a lack of health education and promotion, the majority of people still lack health awareness and self-sufficiency, and health services are still limited to high-income individuals.

7. Conclusion

According to the actual situation and industry experience, we collect national standards, current standards, new system requirements, industry standards, and social needs, sort out the overall scope of data standard construction, clarify the data standard framework and classification system, and formulate data standard implementation plans. It is necessary to improve the personnel allocation of the sanitary cabin, equip different teams according to the needs of the establishment site, standardize the staff assessment indicators, improve the staff salary and benefits, so as to improve the service quality and level of the sanitary cabin.

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