

Accelerating the Construction of Remote Medical Service Network in Qinhuangdao City: Countermeasures and Suggestions to Improve Rural Elderly Care Services

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Abstract: With the intensifying aging population, rural elderly care services are facing challenges such as uneven medical resources and inadequate facilities. Taking Qinhuangdao City as an example, this paper explores ways to improve rural elderly care services through the construction of a remote medical service network. This paper analyzes the current status of rural elderly care services in Qinhuangdao City, pointing out that issues such as the uneven distribution of medical resources between urban and rural areas, poor accessibility, and low service quality urgently need to be addressed. The necessity of accelerating the construction of a remote medical network is proposed, including reducing medical costs, optimizing resource allocation, and disease prevention. Specific measures cover aspects such as policy support, integration of medical and elderly care services, talent cultivation, and technology promotion. At the same time, the potential challenges and risks faced by the remote medical service network in improving rural elderly care services are evaluated, and corresponding countermeasures and suggestions are proposed. Research shows that remote medical care can effectively improve the quality of rural elderly care services and help achieve proper medical care for the elderly.

Keywords: Telemedicine; Service network; Rural elderly care services

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1. Research background and significance

1.1. Research background

Since the implementation of the “14th Five-Year Plan,” various regions across the country have taken multiple measures to seize the “window period” to actively address population aging. As China’s aging process accelerates, the issue of caring for rural elderly people has become increasingly prominent. Among them, medical treatment is an important challenge faced by rural elderly people. With the continuous implementation of the Beijing-Tianjin-Hebei coordinated development strategy, the cross-regional allocation of resources has created new opportunities for the development of elderly care services in Qinhuangdao City. However, medical resources in rural areas,

especially in remote mountainous areas, are still relatively scarce. Due to inconvenient transportation and limited medical facilities, rural elderly people still face obstacles in obtaining timely medical services^[1]. As a new medical service model, remote medical services can effectively alleviate the shortage of medical resources in rural areas and improve the level of rural elderly care services.

1.2. Research significance

1.2.1. Remote medical services can effectively alleviate the uneven distribution of medical resources in rural areas

Better medical institutions are usually located in economically developed and conveniently located areas. However, due to factors such as remote geographical location and relatively backward economic conditions, rural elderly people often find it difficult to obtain the same quality of medical services as those in cities^[2]. With the rapid development of information technology, especially the wide application of technologies such as the internet, big data, and cloud computing, it provides strong technical support for remote medical services. By extending high-quality medical resources from cities to rural areas, the equalization of medical services can be achieved, enabling rural elderly people to enjoy the same level of medical services as those in cities.

1.2.2. Remote medical services can effectively improve rural elderly people's self-health management abilities

Under the traditional medical service model, patients often lack understanding and management abilities regarding their health status^[3]. Remote medical services allow doctors to monitor patients' physiological indicators in real-time, detect abnormalities promptly, and provide corresponding treatment suggestions. Simultaneously, through regular health education courses, online Q&A sessions, etc., the efficiency and quality of medical services are improved, significantly enhancing the quality of life and health level of rural elderly people.

This study selects Qinhuangdao City, Hebei Province, as the research subject, aiming to explore how to use technological means, especially information technology applications, to compensate for deficiencies in medical services in rural areas and contribute to improving the rural elderly care service system. By enhancing medical service levels in rural areas, it is possible to not only improve the health status of rural elderly people but also attract more young talents to return to the countryside, thereby driving the comprehensive development of the rural economy. Through the depth of this study, it is hoped that new ideas and solutions can be provided for optimizing China's rural elderly care service system.

2. Current situation and existing problems of rural elderly care medical services in Qinhuangdao City

In recent years, the rural elderly care service in Qinhuangdao City has formed a development pattern that is oriented towards urban-rural integration, with family care as the basic mode, focusing on serving elderly people with special difficulties, and adopting mutual assistance as the main model, continuously expanding services for all rural elderly people. However, facing the challenge of the rural population aging in the new era and the needs of economic and social development, rural elderly care services are still facing a severe situation.

2.1. Current situation of rural elderly care medical services in Qinhuangdao City

Affected by the outflow of the working-age population and the "siphon effect" of cities, the problem of population aging in Qinhuangdao City is particularly prominent in rural areas. According to statistics, the elderly population aged 60 and above in Qinhuangdao City (registered population) has reached 724,500, accounting for 24.12% of

the city's total population. Among them, 520,100 are rural registered elderly people, accounting for 71.8% of the city's total elderly population, mainly distributed in Qinglong Manchu Autonomous County, Changli County, and Lulong County. There are 58 elderly care institutions in the city, including 16 public elderly care institutions and 42 private elderly care institutions, with 9,500 beds and 55% of nursing beds. 82 regional elderly care service centers, 212 day care service facilities, and 1,527 rural mutual aid happy homes have been established. According to the "China City Statistical Yearbook (2022)," there are 86 hospitals in Qinhuangdao City, including 38 non-municipal districts, accounting for 44.19%; there are 15,596 hospital beds, including 4,674 non-municipal districts, accounting for 29.97%; there are 10,601 licensed (assistant) physicians, including 3,542 in non-municipal districts, accounting for 32.56% shown as **Table 1** ^[4]. The distribution of rural elderly care service institutions is still uneven, and there is still a large gap compared with the huge demand for elderly care among rural elderly groups. At the same time, most rural elderly care institutions have insufficient medical and nursing capabilities, and the nursing needs of disabled and partially disabled elderly people cannot be effectively met.

Table 1. Statistical table of hospitals, beds, and doctors in Qinhuangdao City

	City-wide	Municipal district	Municipal district %	Non-municipal districts	Proportion of non-municipal districts
Number of hospitals	86	48	55.81%	38	44.19%
Number of hospital beds	15596	10922	70.03%	4674	29.97%
Number of licensed (assistant) physicians	10601	7149	67.44%	3452	32.56%

2.2. Problems in rural elderly care medical services in Qinhuangdao City

2.2.1. Uneven distribution of medical resources

Medical resources in Qinhuangdao City, such as medical institutions, equipment, and professionals, are mainly concentrated in urban areas. The limited number and outdated equipment of health care institutions in rural areas make it difficult to meet the basic medical needs of the elderly.

2.2.2. Poor accessibility of medical services

Due to inconvenient transportation and limited medical facilities in rural areas, rural elderly people still face obstacles in accessing medical services, especially in emergencies where a fast and effective medical response mechanism is lacking.

2.2.3. Heavy burden of medical expenses

Although the new rural cooperative medical system has alleviated the medical expense burden of rural residents to some extent, for some major diseases, the issue of medical expenses is particularly prominent for rural elderly people with lower incomes.

2.2.4. Low quality of medical services

Due to the lack of professional medical staff and insufficient medical equipment, the quality of medical services in rural areas is generally not as good as that in urban areas.

2.2.5. Outdated medical concepts and weak health awareness

Limited by their educational level and cultural background, some rural elderly people do not pay enough attention to health issues or have delays and resistance to seeking medical treatment, which may lead to delays and deterioration of the disease.

3. The necessity of accelerating the construction of a telemedicine service network in Qinhuangdao City

3.1. Reducing transportation and time costs

Rural elderly people face heavy economic, time, and energy burdens when seeking medical treatment in city hospitals. The inconvenience of travel and long distances affect their willingness to seek medical treatment ^[5]. Building a telemedicine network allows rural elderly people to obtain professional medical advice at home through online services, saving time and money.

3.2. Lowering the hospitalization rate of rural elderly people

Many chronic disease patients among the rural elderly population require long-term monitoring and regular treatment. Frequent medical visits increase the burden of life and the frequency of hospitalization. Doctors can effectively manage chronic diseases and reduce emergency hospitalizations through real-time remote monitoring and timely intervention using home monitoring equipment.

3.3. Improving the efficiency of medical resource utilization

Urban medical centers are rich in expert resources, but rural patients have difficulty accessing the same services due to geographical restrictions. Establishing a telemedicine network can extend advanced resources to rural areas. Experts can transmit knowledge and experience to primary care doctors through remote consultations and education, improving the level of diagnosis and treatment and reducing repeated examinations and unnecessary treatments caused by misdiagnosis and missed diagnosis ^[6].

3.4. Reducing the use of emergency medical services

Telemedicine can identify health risks and intervene daily, reducing acute attacks. Non-emergency situations can be initially judged, reducing reliance on emergency medical services and related costs.

3.5. Providing preventive medical services

The telemedicine service network has a wide coverage capability, able to reach every rural resident who needs health knowledge. It can not only significantly reduce the incidence of chronic diseases caused by unhealthy lifestyles but also help reduce potential future medical expenses to some extent. It plays a positive role in improving residents' health status and optimizing the allocation of medical resources ^[7].

4. Measures to improve rural elderly care services through telemedicine in Qinhuangdao City

4.1. Strengthening institutional normalization guidance to further accelerate the construction of telemedicine services in Qinhuangdao City

Adhere to the basic principles of government leadership, social and market coordination, overall development, and security, increase financial investment in the construction of telemedicine networks, and formulate policies to encourage multi-party participation. The government has set up special funds to support infrastructure construction and guide medical resources to be inclined toward rural areas, including encouraging city doctors to serve in rural areas and improving the treatment of rural medical staff ^[8].

4.2. Strengthening the diversified construction of elderly care services and continuously improve the quality of integrated medical and elderly care services

Plan the development of the pension industry by local conditions, encourage rural public pension institutions

to carry out public-private partnerships through contracting, entrusted operations, etc., and encourage qualified counties (districts) to establish state-owned pension service enterprises to uniformly operate public pension institutions within the county. Establish an urban-rural collaboration mechanism by combining the capital, technology, and market advantages of the city with the environmental, spatial, and human advantages of the countryside. Combining the construction of Qinhuangdao's "One Comprehensive, One Specialized, and One Central" national regional medical center promotes the expansion and sinking of high-quality medical resources and the balanced layout of the region. Accelerate the construction of a telemedicine service platform connecting medical institutions in rural areas with large hospitals in urban areas. Encourage medical institutions to sign cooperation agreements with pension institutions to provide medical, rehabilitation, nursing, and other services to achieve resource sharing and mutual benefit^[9].

4.3. Strengthening the promotion of rural medical and elderly care services, and guide the updating of the traditional concept of "medical treatment for the elderly"

Actively promote the implementation of the basic elderly care service list, strengthen the care services for disabled elderly in public pension institutions, continue to implement the construction and renovation of public pension institutions, and improve the ability to care for disabled elderly. Gradually change the traditional concept of rural elderly people about medical treatment for the elderly through policy support, propaganda, organizing professional medical staff or volunteers to regularly conduct health lectures and educational activities in rural areas, and guide the elderly to establish a scientific concept of elderly care. Establish a demonstration site for integrated medical and elderly care services in some rural areas so that the elderly can see the actual effects of integrated medical and elderly care services, effectively enhancing the trust of rural elderly people.

4.4. Strengthening talent cultivation and subsidy policies to provide remote health education and consulting

Improve the training mechanism for elderly care talents, strengthen pre-job and on-the-job training for elderly care practitioners. Improve the incentive mechanism for elderly care talents, encourage pension institutions to hire elderly care nursing staff who have obtained professional skill level certificates, and promote the professional development of the industry. Support vocational colleges (including technical schools) to offer relevant majors or courses in elderly care services, explore the development of qualified pension institutions into practical training sites, and guide students to seek employment in the pension service industry. Hold vocational skills competitions for elderly care nursing to continuously improve the quality of elderly care practitioners. Encourage rural elderly people to sign family doctor services with township health centers and provide timely medical advice and intervention through the telemedicine platform^[10]. Provide remote medical technology training for rural medical institution staff in batches to ensure that they are proficient in the use of remote medical equipment, thus providing high-quality remote medical services.

4.5. Exploring remote medical reimbursement policies and promoting smart health equipment

Explore and formulate a reimbursement policy for telemedicine services to reduce the economic burden on rural elderly people. At the same time, guide rural elderly people to use smart health monitoring equipment, such as smart bracelets and blood pressure monitors. These devices can be connected to the telemedicine platform to monitor the health status of the elderly in real-time, effectively reducing the phenomenon of "delaying treatment for minor illnesses, enduring major illnesses, and only going to the hospital when close to death" among rural elderly people.

5. Conclusion

Accelerating the construction of a telemedicine service network in Qinhuangdao City and improving the level of rural elderly care services are not only specific actions to respond to the national call and implement the rural revitalization strategy but also important measures to address the challenge of population aging. Governments, medical institutions, enterprises, and social forces should participate together, starting with policy support, integration of medical and elderly care, construction of elderly care service facilities, talent cultivation, and subsidy policies, to jointly promote the improvement of rural elderly care services. By optimizing the development environment of elderly care services, promoting smart elderly care services, strengthening publicity, and improving the elderly care service system, we can provide better quality and convenient elderly care services for rural elderly people, achieving the goal of providing care and medical services for the elderly. By improving the level of rural elderly care services, we can effectively alleviate the social pressure brought about by the aging of the rural population and promote social stability and harmonious development.

Disclosure statement

The author declares no conflict of interest.

References

- [1] Yang J, 2023, The Digital Divide Among Rural Elderly Population and the Current Situation, Problems, and Countermeasures of Smart Healthcare. *Social Science Journal*, (04): 72–81 + 238.
- [2] Wen Y, 2022, Research on the Health Management of Elderly People Living Alone Through the Construction of a Smart Elderly Care Service Platform Integrating Medical and Nursing Care. *Journal of Traditional Chinese Medicine Management*, 30(07): 194–196.
- [3] Ran X, Hu H, 2022, Urban-rural Differences, Digital Divide, and Health Inequality Among the Elderly. *Population Journal*, 44(03): 46–58.
- [4] National Bureau of Statistics, 2022, *China Statistical Yearbook 2022*, China Statistics Press, Beijing.
- [5] Feng H, 2020, Research on the Development of Rural Medical and Nursing Integrated Pension Mode under Population Aging, dissertation, Shandong University.
- [6] Tang X, Qin F, Fang L, 2019, Discussion on the Problems and Countermeasures of Accelerating the Development of Medical and Nursing Integration. *World Latest Medicine Information*, 19(42): 216.
- [7] Xu L, Zhuang P, Huang Y, et al., 2022, Research on the Coexistence of Comorbidities of Chronic Diseases and Unhealthy Lifestyles Among Elderly People in Xiamen Community. *Modern Preventive Medicine*, 49(17): 3198–3204.
- [8] Zhan H, 2022, The Role of Government in the Supply System of Elderly Care Services: Analysis and Lessons from the United States. *Economic Data Translation*, (04): 14–24.
- [9] Wu W, Hao Z, Wu Y, et al., 2020, Practice of Heterogeneous Integration of Remote Medical System in Yimeng Mountain Area. *China Digital Medicine*, 15(08): 107–109.
- [10] Li L, Li Y, Chen X, et al., 2022 An Empirical Study on the Impact of Community Family Doctor Contracting on the Utilization of Medical Services by the Elderly. *Social Security Research*, (02): 45–58.

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