

The Practical Path for Accelerating The High-quality Development of Smart Elderly Care Services in Xinjiang

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Abstract

Smart elderly care services, through technological integration, aim to enhance the quality and efficiency of elderly care services. Especially against the backdrop of an increasingly severe aging population, the innovation of elderly care service models is particularly important. Although smart elderly care has been promoted and applied to a certain extent both at home and abroad, it still faces many challenges in the actual promotion process in Xinjiang region, such as insufficient supply of smart elderly care services, insufficient government investment, lack of relevant systems and policies, and shortage of professional talent teams. To solve these problems, the joint participation and efforts of the government, society and the market are needed, especially in the continuous improvement and innovation in service supply, technology application, capital investment, policy formulation and talent cultivation, to provide more personalized and efficient services for the elderly, thereby effectively enhancing the quality of life of the elderly.

Keywords

Xinjiang Smart elderly care Elderly care services High-quality development.

1. Introduction

Against the backdrop of an accelerating global aging population, smart elderly care, as an innovative solution to address the challenges of an aging society, is gradually transforming the traditional elderly care model. The smart elderly care service model integrates modern digital technologies and revolutionizes the traditional elderly care service framework. Its aim is to update service concepts, optimize service architectures and enhance service quality. Smart elderly care, empowered by technological means and centered on people, has built an efficient service system that meets the modern development needs and the living requirements of the elderly. Through this model, the elderly can enjoy high-quality elderly care services that are both in line with the trend of The Times and meet their personal needs, thereby promoting the continuous progress and innovation of the elderly care service industry. [1]

The issue of "aging" is closely related to the interests of the people across the country. Xinjiang Uygur Autonomous Region (hereinafter referred to as Xinjiang) fully entered an aging society in 2010, and the number of elderly people has been increasing year by year. According to the Statistical Bulletin on the National Economic and Social Development of Xinjiang Uygur Autonomous Region in 2024, by the end of 2024, The number of people aged 60 and above in Xinjiang has reached 3.6 million, accounting for 13.7% of the permanent resident population. Among them, the number of people aged 65 and above is 2.33 million, accounting for 8.9%[2]. Due to the differences in population and social development conditions, as well as the differences in population structure and fertility policies, the trend of population aging in Xinjiang is accelerating continuously. At the same time, there are also problems such as aging and empty-nest. However, the elderly have relatively backward awareness of elderly care, their

purchasing power for elderly care services is relatively limited, and their need for professional and diversified elderly care is also relatively high. Their elderly care concepts are relatively backward, and they have little understanding of smart elderly care. Meanwhile, the level of smart elderly care services in Xinjiang is relatively low, and the smart elderly care platforms are single. Most smart products require the elderly to have a certain level of "digital literacy", which makes the elderly hesitate and fails to meet their actual needs.

Some scholars have conducted a comprehensive analysis of 2,782 policy documents in China from 2014 to 2023 by applying the LDA theme model and co-occurrence analysis method. They found that in the past decade, smart elderly care policies have mainly focused on six key areas: elderly care informatization, basic livelihood security, innovative elderly care models, service system construction, digital upgrading, and elderly care development planning. Policies such as the "Action Plan for the Development of Smart Health and Elderly Care Industry (2021-2025)" have provided solid support and guarantee for the advancement of smart elderly care [4]. Scholars such as Shen Qi believe that although China is gradually establishing a smart elderly care policy system suitable for its own characteristics and promoting the development of the smart industry and aging social governance, it still faces challenges such as single policy design, extensive content and significant regional differences [4]. Scholar Xu Xiaoyun's research indicates that issues such as the mismatch of service supply and the waste of resources, the lack of personalized and innovative services, and the asymmetry of information resources have led to phenomena such as the unmet needs of the elderly, insufficient maturity of intelligent technologies, and non-standard service supervision [5]. Cao Ying et al. pointed out that the current elderly care service system has deficiencies in terms of service scope, accuracy, flexibility and proceduralism. In particular, the uneven quality of service personnel and the cumbersome service filing procedures have led to service efficiency issues. With the increase in the elderly population, the rising service demand has also brought difficulties in resource allocation [6]. The current smart elderly care service model is facing challenges. However, through continuous technological innovation and optimization of service models, it is expected to provide more convenient, efficient and personalized services for the elderly group, thereby significantly improving their quality of life.

2. Development Measures for Smart Elderly Care Services in Xinjiang

(1) Policy Promotion

At the policy level, under the guidance of national policies and in light of local actual conditions, Xinjiang has issued a series of policy documents to promote the development of smart elderly care services. For instance, the "14th Five-Year Plan for the Development of Aging Services and the Elderly Care Service System in Xinjiang Uygur Autonomous Region", the "Implementation Opinions on Further Promoting the Development of the Elderly Care Service Industry", and the "Implementation Plan for Accelerating the Construction of the Basic Elderly Care Service System" have established a relatively complete policy system. Through measures such as financial subsidies, tax preferences, and land support, the development of elderly care institutions has been promoted. And it has strengthened industry supervision, providing a strong policy guarantee for the development of smart elderly care services. In 2025, the "Key Points of Work of the Autonomous Region's Party Committee for Comprehensively Deepening Reform in 2025" further proposed "strengthening the planning and layout of elderly care service facilities" and included it in the key points of reform in the field of people's livelihood.

(II) Service Implementation

Firstly, in terms of the construction of service facilities, Xinjiang has been vigorously promoting the construction of basic elderly care service facilities. Starting from 2023, the construction of 100 community day care centers for the elderly has been included in the list of people's

livelihood projects for two consecutive years. According to the "six assistance" functions of meal assistance, bathing assistance, cleaning assistance, medical assistance, mobility assistance and emergency assistance, all necessary facilities should be built to continuously enrich the content of elderly care services and meet the diverse needs of the elderly. By the end of 2024, 222 regional elderly care service centers in towns (sub-districts) and community day care centers for the elderly will have been built in the entire district. Among them, cities such as Urumqi have achieved remarkable results in the construction of service networks. As of July 2024, Urumqi has built a total of 360 elderly care service centers in streets (towns) and day care centers (stations) for the elderly in communities (villages), achieving a coverage rate of over 35% for elderly care service centers in streets (towns). The goal of covering 70% of the elderly with home and community elderly care services provides a material basis for the promotion of smart elderly care services. Meanwhile, Urumqi has also achieved the application of intelligent devices by building smart health and wellness communities. These devices synchronize the health data of the elderly in real time, ensuring their safety in daily life. The Zhongya North Road Sub-district Community Day Care Center in Urumqi Economic and Technological Development Zone (Toutunhe District) has collaborated with Huawei to jointly establish the first "Huawei (Xinjiang) Smart Health and Wellness Base" in Xinjiang. This base provides comprehensive health management and monitoring services for the elderly through smart bracelets, fall alarms, millimeter-wave health monitors and other devices. It can not only synchronize the elderly's heart rate, blood pressure and other data to the cloud in real time, but also allow family members and staff to view them remotely, ensuring that the health conditions of the elderly are continuously monitored.

In terms of service models, Xinjiang not only focuses on the improvement of home-based elderly care services, but also pays attention to the comprehensive development of community and institutional elderly care. In home-based elderly care services, the wide application of smart technologies has enhanced the convenience and personalization of the services. For instance, the smart elderly care platform in Shihezi City has integrated five major types of services including meal assistance, medical assistance, and cleaning assistance, achieving full traceability of service work orders and ensuring the efficiency and accuracy of the services. The results of the 2021 Home and Community Basic Elderly Care Service Improvement Action Project achievement acceptance announced by the General Office of the Ministry of Civil Affairs in 2023 show that the project achievement acceptance of Shihezi City, the Eighth Division, was rated as "excellent". Its comprehensive score ranked second among the 18 pilot cities in the western region and first in Xinjiang, fully demonstrating the innovation and improvement in the management of smart elderly care services.

(III) Guarantee Mechanism

To ensure the sustainable development of smart elderly care services, Xinjiang has done a lot of work in improving the guarantee mechanism, especially in terms of financial support, talent cultivation and the mobilization of social forces. First of all, Xinjiang has increased financial input and strengthened financial support. It has included funds for elderly care services in the government's fiscal budget and continuously increased the inclination of welfare lottery public welfare funds at all levels to support the development of elderly care services. It has given priority to supporting the construction of home and community elderly care service networks, the establishment of public elderly care institutions, and the adaptation of families for the elderly with special difficulties. Secondly, the government has included vocational training in elderly care and medical care in the vocational training subsidy program and training directory. By organizing and carrying out vocational skills training actions for elderly care workers and medical care workers, the professionalism of elderly care services has been enhanced. Xinjiang has also established elderly care and medical care majors in various vocational colleges. By standardizing the curriculum and establishing an employment demand linkage mechanism, it

has provided sufficient professional talent support for smart elderly care services. Finally, Xinjiang also actively encourages social forces to participate in the development of elderly care services, promoting the transformation of convalescent institutions affiliated with all levels of Party and government organs and state-owned enterprises and public institutions into inclusive elderly care service facilities, and further enriching elderly care service resources. By adopting the model of cooperation between the government and social capital, Xinjiang encourages social capital to be invested in the construction of the smart elderly care service system, enhancing the coverage and quality of services.

3. Predicaments Faced by Smart Elderly Care Services in Xinjiang

(1) Insufficient supply of smart elderly care services

Although smart elderly care has been initially promoted in Xinjiang, in reality, the related infrastructure and equipment have not yet been fully popularized. The construction of most smart elderly care facilities mainly relies on government promotion, while the market lacks sufficient resources and professional talents, resulting in these facilities failing to fully play their due roles. At present, the coverage of smart elderly care services is mainly concentrated in cities and economically developed areas, which makes it almost impossible for the elderly in some towns to enjoy the convenience brought by smart elderly care. These elderly people often have to go to cities to obtain better elderly care services. In addition, smart elderly care services require a large amount of accurate data support to provide personalized health care services. However, the current data collection methods are insufficient and cannot fully reflect the living habits and health conditions of the elderly, which in turn affects the accuracy and personalization level of the services. In addition, the functional design and user interface of the smart elderly care platform are still rather complex, which increases the operational difficulty for the elderly during use and affects the overall user experience. This technical difficulty makes the elderly prone to "digital technology anxiety", exacerbating their predicament in the "digital divide" and further restricting the popularization and effectiveness of smart elderly care services.

(2) Insufficient government investment

Although the government has provided certain financial support in the construction of smart elderly care services, the overall capital investment is still insufficient, which makes the continuous improvement of services and technological updates face difficulties. On the other hand, the government's insufficient understanding of the characteristics of the elderly care industry and the immaturity of the cooperation mechanism between the government and enterprises have affected the efficiency of fund utilization and the implementation effect of projects. Capital investment is crucial for the development of smart elderly care services. Without sufficient financial support, smart elderly care services will be difficult to meet the actual needs of the elderly and also hard to provide stable service guarantees. At present, the funds for smart elderly care services mainly come from government subsidies, service charges and social donations. Government subsidies remain the main source of funds, but relying on government subsidies for a long time is not a sustainable strategy. To ensure the sustainable development of smart elderly care services, it is necessary to strengthen market-oriented operations, maintain the supply of services through charging models, and at the same time, public welfare methods such as social donations and individual donations should also become important ways to raise funds. Only when the government, the market and social donations complement each other can an effective financial supply system for smart elderly care services be formed to ensure the continuous operation and innovation of the services.

(3) The absence of relevant systems and policies

From the analysis of the policy documents on smart elderly care services issued by the state and Xinjiang Uygur Autonomous Region, although the existing policies provide macro guiding ideology, the specific details in aspects such as industry norms, service quality standards, regulatory assessment methods, access and exit mechanisms for service providers, and talent cultivation systems have not been fully explained. This situation lacking detailed regulations may trigger a series of problems, such as significant fluctuations in the quality of smart elderly care services, uneven service levels, inadequate supervision, and a shortage of professional talents. The fundamental cause of these problems lies in the imperfection of the relevant legal and regulatory system, which lacks clear provisions to support the implementation of high-standard services, thereby restricting the development of smart elderly care services. First, the standardization construction of smart elderly care services in our country lags behind, lacking a complete and systematic set of policies and implementation standards. Most of the relevant policies in our country have significant guiding significance and supportive effects. However, some policies related to smart elderly care are rather broad, lacking systematic overall planning and insufficient refinement [4]. As a result, local governments find it difficult to identify the key points and focus for the implementation of these policies, and their feasibility is limited. The second is that the level of standardization is relatively low. Due to the lack of unified industrial management and service standards, the quality and level of services in actual operations vary greatly, which affects the regulatory effect and makes it difficult to create a favorable development environment in the market. The third point is that preferential policies are difficult to implement. Due to subjective and objective reasons, such as weak operability, limited funds, and difficulties in departmental collaboration, the existing support and preferential policies have not been implemented properly.

(4) Insufficient construction of the talent team

The field of smart elderly care services urgently needs high-quality compound talents, especially professionals who can integrate medical knowledge with information technology. At present, the general educational level of practitioners is not high and their professional skills are limited, which directly affects the professionalization and efficiency of services. In the smart elderly care industry, it is necessary to provide special elderly care services for the elderly based on their physical and psychological needs. However, at present, there is a shortage of compound medical service personnel with certain knowledge, skills and information data processing capabilities, which restricts its long-term and high-quality development. Most of the existing staff have no professional foundation, and the majority are laid-off, unemployed or retired people. They have a low educational level, insufficient awareness of improving professional technical knowledge, and insufficient working ability. This has led to a low quality of work in actual work. Constrained by one's own ability and Internet knowledge, the service awareness and quality need to be improved.

4. Practical Paths for the High-Quality Development of Smart Elderly Care Services in Xinjiang

(1) Increase the supply of smart elderly care services

In terms of the construction of smart elderly care facilities, it is necessary to make a reasonable layout in combination with the actual situation of the region to achieve resource sharing and mutual cooperation. Investing in and upgrading elderly care infrastructure is the primary step to improving service quality. We should actively promote the popularization of smart devices and digital networks, expand the scope of elderly-friendly renovations of accessible smart facilities, and increase investment in smart elderly-related hardware such as smart homes, emergency response systems, and health monitoring equipment. In addition, attach importance to the continuous maintenance and technological updates of these devices to ensure that the

elderly can receive real-time and effective support and services. Customizing senior-friendly technological products, in response to the special needs of elderly users, it is crucial to develop and introduce technological products that are more suitable for their physiological and psychological characteristics. For instance, develop smart devices with simplified interfaces and convenient operations, such as smart phones and smart TVs, and add support for voice operations to enable elderly people without a technical background to use them easily.

Strengthen publicity efforts and innovate service models. By using promotional methods favored by the elderly in the community and integrating "Internet +", seamless connection with elderly care institutions is achieved. At the same time, offline "Smart elderly Care" special lectures and training sessions are held to enhance the elderly's understanding of related technologies and increase their sense of participation. Meanwhile, promote smart elderly care services through media platforms such as wechat official accounts and short videos to expand their social influence. In terms of service forms, diversity should be adhered to, and a complete service system should be formulated in combination with its own characteristics. Traditional elderly care methods often only focus on providing daily life needs, neglecting the personalized demands and diverse experiences of the elderly. Through government leadership and social participation, the construction of the smart elderly care service system should be continuously improved to achieve information sharing, resource sharing, and diversified elderly care methods. The sense of participation and happiness of the elderly should be enhanced through the combination of online and offline methods and community residents' self-governance. Meet the needs of different elderly groups for community-based elderly care. Smart elderly care services not only need to focus on the material foundation but also on the satisfaction of the spiritual level. By holding "Cultural Elderly care" activities, the spiritual and cultural life of the elderly can be enriched, and the needs of the elderly can be closely combined with the development of smart elderly care. In addition, when developing smart elderly care services, it is necessary to adapt measures to local conditions and make reasonable layouts based on the actual situation such as the local economic level and population density.

(2) Improve the construction of information platforms

Data is the core resource of smart elderly care services. Effective data application can significantly enhance the personalization and precision of services. It is necessary to improve the construction of the information platform. By establishing a unified data management platform, service information platform, management supervision platform, etc., the relevant information of the elderly can be effectively managed and the service efficiency can be enhanced. First, establish a database for the elderly. Systematically collect and analyze the health data, living habits and service demands of the elderly to build a comprehensive database for the elderly. These data will provide strong support for designing personalized services, thereby better meeting the actual needs of the elderly. Second, it is necessary to establish a unified data management platform in light of the actual conditions of the region. Smart elderly care is a complex project involving multiple fields and departments, which requires exploration and practice in integrating regional information resources, establishing databases among various departments, and integrating data from various government functional departments. Thirdly, it is necessary to rationally allocate the information resources of each region. Through unified planning and management of regional information resources, information sharing and interconnection can be achieved, providing basic data support for the community's smart elderly care service platform. Fourth, promote the application of smart platforms, optimize the functional design of smart elderly care platforms, reduce their operational complexity, and enhance user-friendliness, enabling the elderly to access and use related services more easily. This not only increases the acceptance of services but also improves their accessibility.

(3) Increase government financial input and policy support

Increase the support of government funds. The government should establish a special fund for the construction of smart elderly care services [8], increase direct investment and continuous subsidies in the smart elderly care field, and ensure the long-term sustainable development of the project. The government can also choose funds or technologies to invest in the digital support platform in a timely manner, directly alleviate the financial and technological pressure on the platform through fiscal support, and reduce the operational pressure on service providers. Encourage more enterprises and institutions to participate in the smart elderly care service market [9].

Establish and improve relevant systems and policies. The standardization and normalization of services are the foundation for improving service quality and the healthy development of the industry. The government needs to, based on the existing elderly care policy standards, draw on the successful experience of smart elderly care demonstration sites, and in combination with the actual situation in Xinjiang, accelerate the establishment and improvement of a smart elderly care standard system, and formulate smart elderly care service standards in accordance with local conditions, including technical, service process and quality control standards. These standards will serve as the foundation for the promotion of smart elderly care services, ensuring the quality and consistency of service provision. At the same time, we should improve the supervision and management mechanism and access system for elderly care institutions, establish a management and supervision platform, set up a dedicated institution to supervise and evaluate smart elderly care services, and moderately increase the openness of various information of each institution. Implement relevant tax preferential policies to safeguard the legitimate rights and interests of providers of smart elderly care services. For non-profit and for-profit smart elderly care institutions, adopt preferential policies such as full exemption or half collection of administrative and public service charges respectively, so as to attract more investment in the smart elderly care industry [10].

(4) Strengthen the construction of the professional talent team for elderly care

Professional talents are the key factors driving the innovation and development of smart elderly care services. Those with professional knowledge and skills can ensure the quality of services and continuous improvement, providing the elderly with a better quality of life and service experience. Therefore, strengthening the cultivation and introduction of professionals related to smart elderly care services is a fundamental task for enhancing the service capabilities of the entire industry. At present, Xinjiang's smart elderly care industry lacks compound, high-precision and cutting-edge technical talents as well as professional nursing personnel. It also faces problems such as poor team stability and poor professional identity. Therefore, the high-quality development of smart elderly care should be people-oriented, build a diversified and multi-level elderly care service talent structure system, and further strengthen team building. The first is to strengthen the training of professional and technical personnel. Guide higher vocational colleges to offer specialized courses related to elderly care, achieving a combination of academic qualifications and vocational training, and integrating systematic professional knowledge and ability training. We can promote the reform of talent cultivation methods through approaches such as "joint training by schools and enterprises" and "joint training by colleges and universities", to cultivate more professional talents. Through a hybrid training model of "online + offline", Strengthen the training of community elderly care workers to enhance their professional abilities and technical levels. Second, introduce professional talents, attract and utilize the advanced experience and technology of domestic and foreign professionals, and enhance the professionalism and efficiency of smart elderly care services in Xinjiang. By introducing high-end talents, drive the technological update and knowledge inheritance of the entire industry, actively guide and attract graduates from related fields to enter elderly care institutions with smart elderly care qualifications, and actively attract more outstanding professional and technical personnel. Third, it is necessary to establish and

improve the assessment and incentive system. Establish a performance appraisal system that conforms to the development of the smart elderly care service industry, plan the career promotion channels for smart elderly care service personnel, increase the benefits they should enjoy by awarding personal honorary titles to those who perform well in the assessment [11], improve the salary and welfare benefits of ordinary practitioners, etc., so that practitioners can have more development opportunities and thereby solve the problem of easy talent loss. Fourth, efforts should be made to enhance publicity for vocational education and society. Targeted publicity should be carried out to change the "stigmatizing" concept of elderly care workers held by the general public, give due professional respect to elderly care workers, and establish a favorable social environment.

5. Conclusion

How to solve the current problems in the development of smart elderly care services in Xinjiang, respond to and implement the strategic requirements of "adhering to closely following people's livelihood and promoting high-quality development" mentioned by the General Secretary at the third Xinjiang Work Symposium, and explore the practical path for the high-quality development of smart elderly care services in Xinjiang has become a necessary choice, so as to provide more precise and efficient services for the elderly in Xinjiang region. Significantly improve their quality of life. In conclusion, the high-quality development of smart elderly care in Xinjiang requires the joint efforts of the entire society, including the cooperation and support of the government, enterprises and all sectors of society. Only through continuous innovation, precise services and efficient resource allocation can the growing needs of the elderly be truly met and smart elderly care services be promoted to a higher level. Ensure that the elderly can fully enjoy the convenience and benefits brought by digitalization.

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