

Innovation and Reflection on the Elderly Care Model in Wenzhou Driven by New Quality Productive Forces

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Abstract

In the current era where technological innovations are changing with each passing day and social development is advancing by leaps and bounds, a wave of new quality productive forces, formed by the intertwined integration of cutting-edge technologies and emerging production factors, is sweeping across all industries with great momentum. The field of elderly care has also been drawn into the vortex of this profound transformation. With the sharp acceleration of the population aging process, the contradiction between the shortage of the supply of elderly care services and the sharp increase in demand has become increasingly acute, and the traditional elderly care models are struggling to cope and are becoming unsustainable. At this time, elements of new quality productive forces such as information technology and intelligent devices are like timely rain from the sky, bringing hope for breaking the deadlock and quietly nourishing this elderly care field that is in urgent need of transformation. This article will comprehensively and deeply analyze the driving core of new quality productive forces, explore the optimal paths for the breakthrough and transformation of the elderly care model in Wenzhou, formulate practical development strategies in combination with local realities, with the expectation of injecting strong impetus into the stable and long-term development of the elderly care cause and helping it move towards a new journey of high-quality development.

Keywords

New quality productive forces; Wenzhou; Elderly care model; Innovation.

1. Introduction

Population aging is like a silent yet far-reaching global wave, sweeping across various countries and regions with an unprecedented scale. Wenzhou, a vibrant city on the southeast coast of China, is inevitably caught up in this trend. According to authoritative statistics, in recent years, the proportion of the elderly population in Wenzhou has been steadily increasing, and the city has already stepped into the ranks of deeply aging societies. The number of the very elderly has exploded, with more and more seniors reaching their eighties and nineties. Their physical functions are declining, and their daily care needs have become increasingly complex and diverse. Meanwhile, the number of empty-nest families has mushroomed. As children leave home to work and settle in other places, the traditional function of family-based elderly care has been continuously weakened. The dual trends of an aging population structure and the miniaturization of family structures have intertwined, making the issue of elderly care more thorny and an essential topic that cannot be ignored in the process of Wenzhou's social development.

In the past, the traditional elderly care models were mainly family-based, supplemented by institutional care. Family-based elderly care relied on the daily care provided by children. However, with the acceleration of the modern pace of life and the increase in work pressure, children are often too busy to take care of their elderly parents comprehensively and

meticulously. As a result, the quality of life of the elderly is greatly reduced, and some elderly people living alone even face potential safety hazards in their daily lives. Although institutional care can provide professional services, the problem of uneven resource distribution is prominent. It is extremely difficult to secure a place in high-quality elderly care institutions, while ordinary institutions have disadvantages such as homogeneous services and extensive management, which cannot meet the diverse and individual needs of the elderly. The service gap is widening, and the service quality varies greatly. All these disadvantages have made the traditional elderly care models totter under the impact of the surging wave of population aging. Fortunately, the east wind of technological progress has brought new productive forces, like the dawn breaking through the thick haze of the elderly care dilemma and opening up new paths for the elderly care cause in Wenzhou. In particular, the booming development of smart elderly care technology is like a timely rain nourishing this field that is in urgent need of innovation. Relying on advanced information technology means, with the precise capture of massive data, the near real-time transmission of information, and intelligent and humanized service docking mechanisms, it has forcefully intervened in all aspects of elderly care. This not only optimizes the existing resource allocation skillfully, ensuring that limited medical and nursing resources are accurately directed to those elderly people who need them most, filling the long-existing service loopholes, but also has the potential to reshape the underlying logic of elderly care services, prompting Wenzhou's elderly care services to gradually abandon extensive management and move towards a new era of personalized and meticulous care, injecting new vitality into the happy twilight years of thousands of elderly people.

2. The Application of New Quality Productive Forces in Elderly Care

2.1. Technological aspect

In the technological landscape of elderly care, big data and artificial intelligence technology are undoubtedly the most dazzling "twin stars". The two combine perfectly and become the "super intelligent brain" in the field of elderly care. Nowadays, various intelligent health monitoring devices are spread throughout the living scenarios of the elderly, continuously collecting massive fragmented health data covering many dimensions such as heart rate, blood pressure, blood sugar, sleep cycle, and number of steps. These data are like puzzle pieces. Through in-depth analysis by big data algorithms, the unique health portraits of each elderly person emerge vividly.

Moreover, big data can also help in the precise allocation of medical resources. By analyzing the overall trend of elderly health data in a region, medical institutions can predict in advance the peak periods and areas of various diseases and increase the deployment of medical staff and allocate drugs and supplies in a targeted manner, avoiding idleness and waste of medical resources. Artificial intelligence has become a 24-hour online caring butler. If an elderly person suddenly feels unwell in the middle of the night, they only need to gently wake up the intelligent voice assistant and describe the symptoms to get professional answers and preliminary suggestions. For daily health care knowledge and disease inquiries, the elderly can obtain detailed information just by moving their mouths, and the plan will be optimized and adjusted according to the real-time physical condition, providing whole-process caring accompaniment, just like a private doctor always by their side.

Even more cutting-edge is that some scientific research teams are trying to use artificial intelligence algorithms to create exclusive cognitive training programs for elderly people with dementia. According to each elderly person's degree of cognitive decline and daily behavior habits, personalized games and puzzles are customized to stimulate brain activity and delay the deterioration of the disease, opening up a new path of non-pharmacological intervention and endowing elderly care with new functions.

2.2. Equipment aspect

Cool technological products such as smart wearable devices and home health monitoring instruments are flocking into the elderly care scene, setting off a new chapter in smart elderly care. In the morning, when the elderly raise their wrists lightly, the worn smart bracelet will automatically start the all-day monitoring mode. Key physiological indicators such as heart rate and sleep quality are immediately synchronized to the cloud. Family members and medical staff can remotely monitor by opening the dedicated mobile phone APP no matter whether they are in a busy city or on a business trip. Once the data is abnormal, the early warning system is triggered instantly, and the professional response team rushes to the scene with first aid equipment like divine soldiers descending from heaven for handling.

In addition to common devices, rehabilitation assistive robots are gradually emerging. For elderly people who are post-operative or have long-term paralysis, lower limb rehabilitation robots can assist them in carrying out regular and scientific leg training, precisely controlling the intensity and frequency, which is more stable and efficient than manual assisted training. Upper limb rehabilitation robots simulate daily living actions and exercise the grasping and stretching abilities of the elderly's hands to accelerate the recovery of limb functions. There are also intelligent bathing devices that can automatically adjust water temperature and flow according to the physical condition of the elderly and are equipped with safety protection sensing devices to prevent the elderly from slipping and scalding, providing all-round protection for the safety and comfort of the elderly's daily life.

2.3. Mode aspect

The combination of the Internet and mobile applications has opened up the "governing vessels" of elderly care services and reshaped the service process. Telemedicine has become a convenient new channel for the elderly to seek medical treatment, saving them from the trouble of traveling. They can connect with medical experts while sitting on their own sofas. Grandma Zhang has difficulty in walking. In the past, her children needed to take time off to accompany her for a follow-up visit, which took half a day to travel back and forth to the hospital. Now, with the help of the telemedicine platform, she can have a video consultation with her attending doctor at home. The doctor can view the examination reports and health data uploaded in real time and give professional diagnosis and treatment opinions. Follow-up visits and consultations can be done with one click.

Online consulting platforms gather medical and psychological experts from all walks of life. The small troubles and psychological knots in the daily life of the elderly can be professionally guided at any time. Grandpa Zhao's children are not around for a long time, and he often feels lonely and depressed with great psychological pressure. He made an appointment with a psychologist through the online consulting platform. After several video communications, his mood improved significantly and he regained the joy of life. Health management APPs faithfully record health data throughout the process and generate visual reports with one click, facilitating self-monitoring by the elderly and precise follow-up by medical staff. Resources are allocated on demand, and the elderly enjoy convenient and efficient services, completely renewing the elderly care experience.

At present, a new model of "Internet + home-based elderly care + community linkage" has emerged. The community builds an online supply and demand platform for elderly care services. The elderly post needs such as home haircut, electrical appliance repair, and accompanied medical visits. Surrounding businesses and volunteers receive orders for services. After the service is completed, the elderly can give online evaluations to form a service closed loop. Through this, the community integrates scattered resources and mobilizes the enthusiasm of all parties to create an elderly care ecosystem of mutual assistance among acquaintances and resource sharing, greatly expanding the breadth and depth of elderly care services.

3. Innovative Practices of the Elderly Care Model in Wenzhou

3.1. Integrated Care Model

Wenzhou Modern Elderly Care Industry Development Co., Ltd. has shown great ingenuity in building a strategically forward-looking “1 + X + Y” health and elderly care service industry system. The “one medical, rehabilitation, nursing, and education demonstration base” is like an aircraft carrier for elderly care, taking the lead and forcefully integrating high-quality resources in advanced medical treatment, rehabilitation training, professional nursing, and elderly education. It is equipped with world-class diagnostic and treatment equipment, and a professional team of rehabilitation physicians customizes rehabilitation plans. The nursing area has a pleasant environment, with nursing staff providing round-the-clock attentive care. The university for the elderly offers diverse courses such as calligraphy, painting, and music to enrich the spiritual lives of the elderly, setting a benchmark for regional elderly care services.

“Several health and rehabilitation service complexes” are scattered throughout the city like twinkling stars, receiving the radiation energy from the demonstration base and providing diversified daily health and rehabilitation services according to local conditions. Some complexes are close to parks, focusing on outdoor fitness and natural therapy; some are located in the community center, emphasizing assistance for home-based elderly care and daily health monitoring. “Several community elderly care service points” penetrate deep into the streets and alleys, getting close to the lives of the elderly with zero distance, providing basic care and spiritual comfort. Community volunteers regularly visit the elderly to chat and do housework; simple medical stations are set up at the service points for the elderly to measure blood pressure and blood sugar conveniently. The three work in coordination, spreading a large, full-cycle, and all-round elderly care service network that accurately covers the whole city, meeting the needs of the elderly of all ages and levels in one stop.

3.2. Smart Elderly Care Service Platform

The smart elderly care service platform built by Wenzhou City with great efforts is like an invisible guardian angel always by the side of the elderly. The emergency call function is specially designed for emergencies. When an elderly person encounters an emergency, they can call for help with one click. The platform quickly locates the position by using advanced positioning technology and immediately dispatches surrounding rescue forces, racing against time to save lives. There was an elderly person who had a sudden heart attack at home. After pressing the emergency call button, the platform quickly located the specific address and notified the nearby community medical staff and the ambulance, which arrived at the scene within just a few minutes, allowing the elderly person to receive timely treatment.

The environmental monitoring module monitors the indoor temperature, humidity, and air quality in real-time, creating a comfortable living environment like spring all year round for the elderly. The behavior sensing function, with the help of high-definition cameras and intelligent sensors, accurately captures the daily activity trajectories of the elderly. Once it detects dangerous signals such as abnormal wandering or staying in bed for a long time, it issues timely warnings and interventions, ensuring the elderly can live at home safely and have professional care within reach.

3.3. “Time Bank” Mutual Elderly Care Service

The “Time Bank” mutual elderly care service pioneered by Wenzhou City is full of neighborly warmth and the spirit of mutual assistance, and can be regarded as a heartwarming innovation in the field of elderly care services. Volunteers, with enthusiasm, provide attentive services such as chatting with the elderly to relieve boredom, delivering meals to their doors, and helping with housework. The service duration is recorded truthfully and stored properly. When they

have needs in the future, they can exchange for services from others on an equal basis, allowing love to circulate among neighbors and forming a virtuous cycle.

Especially in mountainous counties with relatively weak economic foundations, a "low-cost" home-based elderly care model has been developed according to local conditions, fully revitalizing the local idle labor force and cleverly alleviating financial pressure. In mountainous villages, neighbors have close relationships. Young people use their spare time to help the elderly and accumulate service hours; when their own elderly family members need care in the future, they can get help from others. In this way, elderly care services take root and grow among neighborly assistance, building a new rural elderly care fashion of mutual help and love.

4. Discussion

Under the powerful empowerment of new-quality productive forces, Wenzhou's elderly care model has successfully transformed, and diversified and personalized services are blooming like flowers. Smart elderly care technology has exponentially increased service efficiency. The elderly no longer need to rush around for medical treatment and consultations. They can handle everything with a light tap of their fingertips. Personalized care plans meet the physical and mental needs of the elderly, making their later years more comfortable and carefree.

However, the road ahead is by no means a smooth one. Thorns and challenges follow one after another. A considerable number of elderly people are intimidated by smart technologies and are confused about operations, becoming "digital refugees". Many elderly people have not even mastered the basic operations of smartphones, let alone using complex health management apps and telemedicine platforms. Behind this, there are not only subjective factors such as the weaker ability of the elderly to accept new knowledge but also the reasons that the interface design of smart devices is not friendly enough and there is a lack of operation tutorials. To solve this problem, elderly care service institutions, communities, and technology enterprises need to work together to develop simple operation versions specifically for the elderly, hold practical training lectures, and arrange for volunteers to provide one-on-one guidance to help the elderly cross the digital threshold.

Data security and privacy protection are like the "Sword of Damocles" hanging over our heads. Massive health data is related to the lives and fortunes of the elderly. Once leaked, the consequences would be unimaginable. Potential risks such as cyber hacker attacks, poor data management, and illegal operations by internal personnel may all lead to the exposure of the elderly's privacy and the abuse of medical information. It is extremely urgent to build a strict data protection network in all aspects. Efforts need to be made from multiple dimensions such as technical encryption, institutional norms, and personnel supervision to strictly adhere to the bottom line of data security.

In addition, the promotion cost of new-quality productive forces in Wenzhou's elderly care is also a major constraint. The purchase cost of cutting-edge smart devices is not cheap, and the operation and maintenance cost of professional systems is high. Small elderly care institutions and economically underdeveloped areas often find it difficult to bear. This requires the government to increase financial subsidies, introduce tax preferential policies, and guide social capital investment to reduce the cost for elderly care institutions to introduce new technologies and new equipment. At the same time, encourage scientific research institutions to develop elderly care technology products with higher cost performance to ensure that advanced technologies can benefit the elderly on a larger scale. Only by facing up to and properly solving these challenges can the innovative achievements of Wenzhou's elderly care model be maintained for a long time, and the empowering advantages of new-quality productive forces can be fully demonstrated.

5. Conclusion

There is no doubt that new productive forces are the key “catalyst” for the magnificent transformation of the elderly care model in Wenzhou. Through a series of bold innovative practices such as integrated care, intelligent platforms, and “time banks”, the prototype of an efficient, convenient, and personalized elderly care system has emerged and has already achieved many remarkable results. It has not only significantly alleviated the sharp contradiction between the supply and demand of elderly care services but also reshaped the elderly care service ecosystem in Wenzhou, enabling the elderly to truly feel the benefits brought by scientific and technological progress and model innovation. Many elderly people can enjoy their twilight years in peace, and the caregiving pressure on their children has been reduced accordingly. From a social perspective, it has also lightened the burden of elderly care and freed up human resources for development in other key areas.

Looking ahead, the exploration must never stop. On the one hand, we should tap the potential of new productive forces and introduce cutting-edge technological applications such as virtual reality rehabilitation training to improve rehabilitation effects and intelligent companion robots to comfort the elderly spiritually in a timely manner, further refining the granularity of elderly care services to accurately meet the diverse needs of the elderly in rehabilitation physiotherapy, psychological comfort, and other aspects. On the other hand, we should focus on the problem of the “digital divide” among the elderly, jointly carry out special training with communities, universities for the elderly, and public welfare organizations, create customized courses, and improve the digital literacy of the elderly so that they can keep up with the times. It is also crucial to strengthen the data security line. We need to invest special funds, introduce top-notch encryption technologies, and formulate strict usage regulations and supervision systems to comprehensively address potential challenges and boost elderly care services in Wenzhou to a new height, thus presenting a satisfactory answer to an aging society. Only by continuous innovation and overcoming difficulties can the elderly care cause in Wenzhou progress steadily driven by new productive forces, effectively guarantee the well-being of every elderly person in their later years, and also provide valuable reference for the innovation of elderly care models in other domestic regions, leading elderly care services to a more quality and warm development stage.

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