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Application of Digital Platform in The Field of Elderly Care

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Abstract: As an innovative solution to the challenges of global aging, the smart elderly care digital platform is gradually changing the face of elderly care services. This paper aims to discuss the development status, common technical solutions and future prospects of the smart elderly care digital platform, and provide useful experience for the development of the smart elderly care industry.

Keywords: Smart Elderly Care, Smart City, Digitalization

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1 Introduction

Smart elderly care is a field that has attracted much attention. As the global aging trend intensifies, how to better meet the needs of the elderly has become an urgent issue. As an innovative solution, digital platforms are gradually changing the face of elderly care services. This paper aims to explore the development status and common technical solutions of smart elderly care digital platforms.

We will review the development history of smart elderly care, analyze the current status of digital platforms, and explore the applications and challenges of digital platforms in the field of elderly care. Secondly, common technical solutions for smart elderly care will be introduced, including artificial intelligence, the Internet of Things, big data, etc., emphasizing how these technologies can improve elderly care services and management. In this article, we will delve into the key technologies required for digital platforms, such as data privacy protection, user interface design, smart sensors, etc., and analyze the effects and limitations of these technologies in practical applications.

Through case studies, we will select several actual cases of smart elderly care digital platforms, describe their design, implementation and effects in detail, and compare the similarities and differences between different platforms. Finally, we will look into the future development trends of smart elderly care digital platforms and put forward relevant policy recommendations to promote the sustainable development of digital platforms.

This paper aims to provide useful reference for researchers, practitioners and policymakers in the field of smart elderly care to promote the further development of digital elderly care.

2 Current Status of Smart Elderly Care Development

Smart elderly care is a field that has attracted much attention. As the global aging trend intensifies, how to better meet the needs of the elderly has become an urgent issue. As an innovative solution, digital platforms are gradually changing the face of elderly care services.

The following are some key points of the current development status of smart elderly care:

2.1 Policy Support and Planning

The Chinese government has formulated the "Smart Healthy and Elderly Care Industry Development Action Plan (2021-2025)"1. This plan aims to further promote the development of the smart health care industry and promote the sustainable development of digital platforms.

2.2 Technology Application

The smart senior care digital platform creates a smart senior care service model of "system + service + elderly + terminal" by using information technologies such as the Internet of Things, the Internet, mobile Internet technology, smart calling, cloud technology, and GPS positioning technology. This model not only helps elderly care institutions improve management efficiency, but also covers various forms of elderly care, such as institutional care, home care, community day care, etc., allowing the elderly to enjoy professional and intelligent services at home2.

2.3 Market Size and Investment and Financing

China’s aging trend is obvious, and the demand for elderly care will continue to increase. The market size of the smart elderly care industry continues to expand. According to data, the market size of my country's smart elderly care industry will be approximately 8.2 trillion yuan in 2022, and is expected to reach 10.5 trillion yuan in 20233.

2.4 Diversified Evelopment

At present, smart elderly care service technology is mainly based on health information monitoring related technologies, but the industrial structure and technology types require more diversified and diverse scientific and technological support. It is recommended to increase support for basic research and applied research, and improve the integrated industry-university-research innovation mechanism with enterprises as the main body. 4

At present, the smart elderly care digital platform has broad development prospects, which will provide better elderly care services for the elderly while easing the pressure on social elderly care.

3 Overview of Smart Elderly Care Technology Solutions

The technical solutions of the smart elderly care digital platform cover multiple key areas to provide a full range of health management, security and life assistance services. The following are some common smart elderly care technology solutions:

Home mobile monitoring: Through various hardware devices, the physical signs and behavioral data of the elderly throughout the house are collected. Notify family members or caregivers promptly when abnormalities are discovered. Long-term data tracking provides elderly health data analysis trend reports to help effectively grasp physical health trends.

Smart maintenance: Provide a whole-house smart platform to provide high-quality options for the elderly to care for themselves at home. Including smart switches, smart temperature and humidity control, voice calling and other services to improve the convenience and efficiency of home care.

Intelligent drug management: Use AI platform capabilities and intelligent hardware ecology to customize smart medicine cabinets, smart medicine boxes and other products. Provides a simple, smart and flexible elderly care experience for the elderly who are semi-autonomous.

Intelligent health data management: Through the Internet of Things platform foundation and health data center, health data are collected and collected to form health files. Let the health care of the elderly no longer rely on their own judgment and protect their health and longevity.

Indoor elderly care system: An indoor elderly care system that provides an intelligent system is the first choice for elderly care institutions. Including smart devices, data collection, health file management and other functions to provide comprehensive services for the elderly.

Intelligent hardware empowerment: Based on the AIoT platform and rich hardware ecological library, it provides an integrated software and hardware elderly care service experience. Including security services, medical services, health services, living assistance, etc.

These technical solutions will provide better elderly care services for the elderly while promoting the sustainable development of the smart elderly care industry.

4 Key Technologies of Digital Platform

Digital platforms play a vital role in the field of smart elderly care. Here are some key technologies for digital platforms:

Data privacy protection: Elderly care data involves personal privacy, so digital platforms require strict data privacy protection mechanisms. Technologies such as encryption, permission control, and data desensitization help protect the privacy of the elderly.

User Interface Design: Design an easy-to-use and user-friendly user interface so that older adults can easily use digital platforms. Consider the special needs of the elderly, such as large fonts, concise operating procedures, etc.

Smart sensor technology: Sensors can collect physiological data, activity trajectories and other information of the elderly. Heart rate sensors, body temperature sensors, motion sensors, etc. help monitor the health status of the elderly in real time.

Cloud computing and big data analysis: Cloud computing provides storage and computing resources to support the expansion and flexibility of digital platforms. Big data analysis can explore the health trends and behavioral patterns of the elderly and provide decision-making basis for elderly care services.

Artificial intelligence technology: Machine learning, natural language processing and other technologies can be used in intelligent health monitoring, intelligent question and answer, etc. Intelligent algorithms can predict the health risks of the elderly and take intervention measures in advance.

Telemedicine technology: Video calls, remote diagnosis and other technologies allow the elderly to receive medical services at home. Telemedicine platforms require stable network connections and high-quality video transmission.

These key technologies together form a digital platform that provides more comprehensive and intelligent services for smart elderly care.

5 Future Outlook and Policy Recommendations

With the continuous development of smart elderly care digital platforms, we can foresee the following future trends and policy recommendations:

Technological innovation and application expansion, with the continuous advancement of artificial intelligence, big data, Internet of Things and other technologies, the smart elderly care digital platform will become more intelligent and personalized. The government should encourage technological innovation and support the research, development and application of smart elderly care technology.

Cross-border cooperation and industry integration, the digital platform for smart elderly care needs to span multiple fields such as medical care, health, and social security to achieve a full range of services. The government should promote cooperation between different departments, promote industrial integration, and create a more complete elderly care service system.

Data sharing and privacy protection: Data sharing will become the key to smart elderly care, but at the same time, the privacy of the elderly needs to be protected. Establish data sharing norms, clarify data usage rights, and protect the privacy rights of the elderly.

Talent cultivation for smart elderly care: The field of smart elderly care requires professional talents, including technicians, medical staff, social workers, etc. Strengthen talent training and attract more talents to join the smart elderly care industry.

Financial support and policy incentives: The digital platform for smart elderly care requires financial support, including venture capital, government subsidies, etc. Establish a smart senior care industry fund to encourage enterprise innovation and promote the development of digital platforms.

The future development of the smart elderly care digital platform requires the joint efforts of governments, enterprises, scientific research institutions and other parties. We should strengthen technological innovation, cross-border cooperation, data privacy protection, talent training and other aspects to provide better elderly care services for the elderly and make smart elderly care a reality.

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Conflict of interest

The authors declare that the research was conducted in the absence of any commercial or financial relationships that could be construed as a potential conflict of interest.

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