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Research on the Legal Dilemma and Countermeasures of Urban Pension Service in the Era of Artificial Intelligence

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ABSTRACT

In the era of artificial intelligence deeply empowering urban elderly care services, the smart elderly care model faces multiple legal dilemmas. This study analyzes the current situation of urban old-age care services in the era of artificial intelligence, covering the intelligent coverage of the whole scene of old-age care services, the ' home-community-institution ' integrated old-age care service model, and the large-scale development of the old-age care service industry promoted by multi-sector collaboration. At the same time, it elaborates on the difficulties faced by urban smart old-age care, such as the lack of special legislation for urban smart old-age care, the increase of security risks of excessive data collection, the ambiguity of the division of powers and responsibilities of multiple subjects, and the ethical risks caused by the lack of humanistic care. Furthermore, it proposes to construct a three-in-one governance framework of " special legislation ^ + technical standards ^ + ethical review " : to formulate " smart pension service regulations " to clarify the boundaries of rights and responsibilities ; establish a data classification and classification protection system to strengthen data security ; establish a detailed system of joint and several liability of multiple subjects to regulate the behavior of all parties ; improve the ethical risk review mechanism of smart pension and pay attention to humanistic care. Through the rule of law, we will balance the innovation of artificial intelligence technology and the protection of rights and interests, and promote the high-quality development of urban smart pension services.

Index Terms: artificial intelligence • city • pension services • legal dilemmas • countermeasures

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Keywords: *artificial intelligence, city, pension services, legal dilemmas, countermeasures*

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1 The Status Quo of Urban Elderly Care Services in the Era of Artificial Intelligence

At present, artificial intelligence technology has been deeply integrated into all aspects of social life. The process of urban aging is continuing to accelerate, and the ' 14th Five-Year Plan ' period has entered a ' moderately aging ' society. According to the seventh national census data, the elderly population aged 60 and above in China has reached 297 million, accounting for 21.1 % of the total population. It is expected to exceed 400 million by 2035 and enter the stage of severe aging (see Fig. 1). According to the World Health Organization, it is estimated that the number of people over 60 years old will reach 2.1 billion in 2050, including 426 million people over 80 years old. The traditional old-age care model has been unable to adapt to the needs of smart old-age care in the new era due to the shortage of human resources, low service efficiency, and difficulty in meeting individual needs. With the advent of the ' digital intelligence era ', artificial intelligence technology has profoundly impacted and reshaped the field of urban elderly care services with its powerful data processing capabilities, intelligent decision-making systems, and all-weather service characteristics, effectively improving the utilization efficiency and service quality of elderly care services. However, in the process of empowering intelligent elderly care services, there is an imbalance between artificial intelligence technology and legal regulation, which leads to multiple legal dilemmas in intelligent elderly care services. How to use the rule of law to balance the innovation of artificial intelligence technology and the protection of rights and interests, and build a safe, credible and sustainable intelligent pension ecology has become an urgent proposition to be solved.

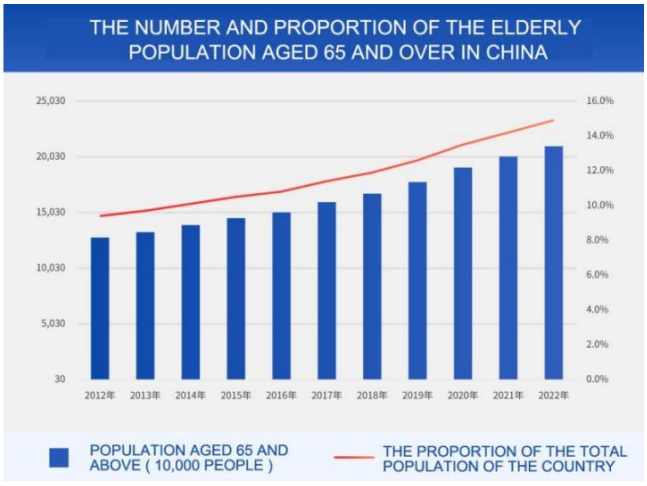

Figure 1. The number and proportion of people over 65 years old in China.

Source: China's Ministry of Civil Affairs' 2022 National Development Communiqué on Aging.

1.1 Promote Full-Scene Intelligent Coverage of Elderly Care Services

First, the deep integration of artificial intelligence, Internet of Things, big data and other technologies promotes the transformation of pension services from ' passive response ' to ' active prevention '. Taking Shanghai intelligent nursing home as an example, the real-time acquisition and risk warning of vital signs and activity trajectories of the elderly are realized by deploying intelligent mattresses, millimeter wave radar fall monitoring, one-click call and other equipment. At the same time, it integrates a variety of professional intelligent terminals, covering functions such as home fire, water, electricity, and fall prevention monitoring. It also supports emergency contact assistance calls and other assistance responses, and is committed to providing 24-hour, 24-hour, multi-level, and personalized safety monitoring and care services for the elderly. Artificial intelligence is embedded in pension services, and multi-scene intelligent equipment enhances the autonomy of elderly care. To a certain extent, it can reduce the dependence on labor, play a role in partially replacing children in terms of function and emotion, effectively alleviate the care pressure of children, realize the technical replenishment of daily care for the elderly, and make the family support function continue[1]. Second, in the field of health management, AI algorithm builds a health risk model based on historical data, which can warn potential problems such as cardiovascular disease and cognitive impairment in advance. For example, in Nanning Guanglv Community Leling Center, AI facial diagnosis and treatment instrument is used to scan the face, hand, mouth and tongue of the elderly, and a report including physical identification, health risk assessment and personalized health advice can be generated in 5 minutes. Combined with the concept of' preventive treatment of disease ' in traditional Chinese medicine, the health management threshold is moved forward, so that nursing staff can understand the physical condition of the elderly more comprehensively and adjust the nursing plan in time. Third, the application of exoskeleton robots, intelligent medicine boxes and other equipment has significantly reduced the labor cost of caring for the elderly. Fourth, artificial intelligence technology creates a happy and relaxed living and entertainment environment for the elderly with the help of smart home, smart health bracelet and other equipment, and at the same time helps the elderly to improve their cognitive training and language training. Artificial intelligence technology can establish an emotional connection between the elderly and the machine for the elderly through voice interaction, chatting, storytelling and other functions. In the field of elderly care services, artificial intelligence fully demonstrates its important potential in enriching service content, improving service quality and efficiency, optimizing service experience, and empowering service personnel[2].

1.2 To Achieve "Home-Community-Institution Integration of Pension Services

First, urban old-age care services are breaking through the boundaries of traditional institutions and building a quarter-hour old-age care model of ' walkable, functional integration, and intelligent response '. Panlong District of Kunming City combines its own resource advantages to create a good-neighborly living room based on the first floor of the comprehensive building of No.1 TV Factory attached to No.46 People 's Lane. This space subverts the administrative office scene, transforms the old building of the TV factory into a composite space integrating meals, health care and entertainment, forming a' bowl of soup distance ' pension service circle, so that the elderly can enjoy a happy life at home. At the same time, it integrates online consultation, meal appointment, emergency call and other functions to form a ' fingertip ecosystem ' for elderly care services, covering high-frequency needs such as medical registration, hydropower and coal payment. This model not only solves the problem of the separation of traditional old-age service space, but also realizes the quality service of " good old-age care " at the urban community level.Secondly, the embedded pension institutions in urban communities integrate civil affairs, medical and social security data to realize the digitization of the whole process of ' portrait of the elderly-service matching-quality supervision '. Guangzhou coordinates the construction of community old-age care service institutions with comprehensive functions such as full-time care, day care, on-site service, and downward guidance, expands the functions of full-time care, day care, meals, housekeeping + old-age care, family old-age care beds, medical care, and auxiliary equipment leasing, increases the supply of embedded, comprehensive, multi-functional, and inclusive high-quality old-age care services in the central urban area, improves the full-coverage, multi-level, multi-support, and multi-agent social old-age care service system, and builds a " big city big old-age care " model with Guangzhou characteristics and is at the forefront of the country. In addition, Seoul, South Korea uses the Internet of Things (IoT) technology to provide real-time security monitoring and emergency intervention for elderly people living alone and at high risk. Through the deployment of a variety of sensors, real-time monitoring of activities and environmental data of elderly people living alone and at high risk. When the pension service system identifies an abnormality, it will automatically alarm, and the staff will intervene after verifying the situation, which effectively reduces the accidental risk of the elderly living alone and

improves their quality of life (see Fig.2).

Figure 2. Intelligent technology empowers urban elderly care services.

1.3 Construction of Multi-Sectoral Coordination of the Pension Service Industry Scale

First, the continuous optimization of urban policies provides an institutional guarantee for smart elderly care services. At the national level, the smart pension is placed at the core of the strategy of actively responding to the aging population, and a three-level policy system of ' national strategy + local pilot + industry standard ' is constructed. For example, the Ministry of Civil Affairs and other eight departments jointly issued ' Several Measures on Cultivating the Main Body of Pension Service to Promote the Development of Silver-haired Economy ', clearly put forward to encourage the development of pension service robot industry, and support the pilot trial of intelligent equipment development enterprises embedded in pension institutions. Beijing, Shanghai and other places guide the participation of social capital through financial subsidies. The utilization rate of smart elderly care community equipment in the Yangtze River Delta and the Pearl River Delta has broken through key indicators, forming a coordinated development model of " central coordination + local innovation "Secondly, the ecological environment of urban smart pension industry

is accelerating to upgrade in the direction of' scene integration '. In 2021, the Ministry of Industry and Information Technology, the Ministry of Civil Affairs, and the National Health Commission jointly issued the " Smart Health Pension Industry Development Action Plan (2021-2025). " The state incorporates smart old-age care into the' 15th Five-Year Plan ' and clarifies support directions such as technology research and development, scene application, and data security. Driven by this, the scientific and technological support capacity of the smart health pension industry has been significantly enhanced, and the supply capacity of products and services has been significantly improved. The industrial ecology has been continuously optimized and improved, the ' digital divide ' of the elderly has gradually narrowed, and the people 's happiness, sense of gain and sense of security in health and old-age care have been steadily improved. Third, the city 's comprehensive smart health care platform has mushroomed. All localities actively promote the construction of a comprehensive information system platform for regional smart health care services, rely on regional old-age service centers, promote the informatization of old-age subsidies, old-age services, and industry supervision, and realize the dynamic management of elderly information (see Fig. 3). For example, Zhishen Technology Qicaixi Digital Healthcare Platform integrates health monitoring, safety protection, medical resources and other functions with its innovative technical architecture and full-scene service model, forming an integrated chain of' R & D-production-service '. At the same time, cross-industry collaboration is increasingly close. Insurance companies develop health management insurance products, cultural and tourism enterprises deploy intelligent navigation facilities, and financial institutions provide aging credit support to jointly promote the high-quality development of smart pension services.

Figure 3. Doctors guide the elderly to carry out physical examination.

2 The Legal Dilemma of Urban Elderly Care Service in the Era of Artificial Intelligence

In the context of the deep penetration of artificial intelligence technology into the field of old-age care services, urban smart old-age care services are facing multiple legal dilemmas, and their core contradictions focus on the imbalance between technical empowerment and legal regulation.

2.1 Lack of Special Legislation on Urban Smart Pension

The current " Law on the Protection of the Rights and Interests of the Elderly, " " Network Security Law " and " Personal Information Protection Law " have made principled provisions on privacy protection, data security and other aspects, but for the smart pension scenario, there is a lack of specific and operational implementation rules. First, the field of urban smart pension presents a typical pattern of ' hot policy and cold law '. At the national level, there is no special' smart pension service law ' or relevant administrative regulations, which makes the legal system in the field of smart pension fragmented. For example, the " Law on the Protection of the Rights and Interests of the Elderly " is based on the logic of the industrial era. It is difficult to fully cover the new right object of intelligent pension services, and it cannot provide accurate and effective legal guidance for intelligent pension services.Secondly, the operability of the existing legal provisions in the field of pension is not strong. Most of the laws on old-age care remain at the level of principle and lack the necessary implementation rules. The urban intelligent old-age care machine has strong concealment and uncontrollability, and cannot control the whole process of its operation, which makes it difficult to investigate the facts when the infringement occurs. This situation has further caused the dilemma of difficult to follow the law and there is a lack of clear standards in practice to guide specific operations. Third, the lack of regulatory standards for urban pension services. The lack of clear and unified standards for the quality of old-age care services has led to uneven quality of service in the market, and the basic rights of the elderly are difficult to be effectively guaranteed. At the same time, there is a lack of effective coordination and cooperation mechanism between different government departments, which further hinders the effective development and implementation of pension service supervision.

2.2 Increased Risk of Over-Collected Data Security

Smart elderly care services rely on a large number of highly sensitive data such as biometrics and behavioral trajectories, but the data security protection mechanism is still not perfect. First, in the smart old-age care service, there is a large-scale, indiscriminate collection of various information data such as the biological characteristics, family conditions, and health status of the elderly. The current privacy protection laws are mostly general provisions, and there is a lack of specific and targeted arrangements for privacy protection in smart pension scenarios. When the elderly receive smart old-age care services, their rights and interests such as the right to know and the right to consent for data collection and use are difficult to be effectively guaranteed. The current law does not clearly stipulate how to ensure that the elderly truly understand and independently make informed consent, which makes the protection of privacy rights and interests of the elderly in the smart pension service ineffective. Second, the abuse of pension service data and illegal transactions. In the process of data collection, preservation and application, due to technical defects or management negligence, security risks may be hidden, resulting in illegal acquisition or abuse of data[3]. Although the " Network Security Law " and the " Personal Information Protection Law of the People 's Republic of China " have made relevant provisions on data security, these provisions fail to fully consider the special scenarios of smart old-age care and the weak position of the elderly. Specifically, the lack of specific operating standards and security technical requirements for the collection, storage, processing and transmission of smart pension data makes the data lack effective norms and constraints in the use process, and data abuse and illegal transactions occur from time to time.Third, the defense capability of data security technology is weak. The smart pension platform has a serious shortage of investment in data security technology defense, and does not pay enough attention to basic security measures such as encryption, access control and intrusion detection. As an important carrier of intelligent old-age care services, Internet of things equipment has become an easy target to be attacked because of its limited security performance, and system vulnerabilities are widespread. The personal information and privacy of the elderly are exposed to extremely high risks, and they are vulnerable to identity theft, property damage and physical injury. Fourth, the attribution of data security supervision responsibility is ambiguous. In the urban intelligent old-age care service, there is a phenomenon of replacing the law with urban policies,

which leads to unclear responsibilities among the old-age care service institutions. The data security supervision has a vacuum zone, and each department shirks responsibility from each other, resulting in the situation of " responsibility shuffling. " The lack of clear legal standards and accountability mechanisms makes it difficult to hold data security accountable and allows criminals to go unpunished.

2.3 The Division of Rights and Responsibilities of Multiple Subjects is Vague

Smart pension services involve platform operators, equipment manufacturers, service providers, medical institutions and other parties. However, at present, relevant laws and policies and regulations have not yet formed a unified standard, and the definition of the rights and obligations of each subject is not clear enough, which makes it difficult to clarify the division of responsibilities.

First, the boundary between government supervision and market operation is not clear enough. The government is supposed to be the rule-maker and supervisor, but in practice, it often becomes the direct provider of services in pension institutions, leading to confusion of roles. For example, the government has built a smart pension platform, but subsequent operations are outsourced to market players. When there is a service problem, it is easy for the parties to shift responsibilities to each other.Second, there is a disconnection between intelligent technology and pension services. The technology development company has built a pension service infrastructure, but it does not assume the responsibility of actually caring for the elderly. When the intelligent mattress fails to detect the fall of the elderly, it is difficult to judge whether it is a hardware failure or a software vulnerability. At the same time, if the nursing staff does not respond in time, the main body of responsibility is difficult to lock, resulting in difficulty in accountability. There is still a lack of clear explanation in the law on the regulation of problems in the after-sales and use of software and hardware of artificial intelligence products [4]. Third, the boundary between medical institutions and pension services is blurred. Smart old-age care often involves services such as chronic disease management and telemedicine. However, the responsibility boundary between the smart old-age care platform and the remote doctor is blurred, making the division of responsibilities more complicated. Intelligent products have independent decision-making power, and it is difficult to clarify which behaviors are in the normal performance of their duties[5] .Fourth, the lack of unified laws and regulations and service standard system. In the smart elderly care service, there is no uniform industry standard for data processing, privacy protection, security management, and service quality. Different service providers follow different standards, resulting in uneven service quality. This not only makes it difficult to achieve unity and standardization in the protection of the legitimate rights and interests of the elderly, but also easily leads to disputes and legal risks in the service process. Moreover, smart old-age care involves many legal fields such as civil law, network security, data protection, and consumer rights protection. There are intersections and conflicts in the scope of application between laws, resulting in uncertainty in the process of law application.

2.4 Lack of Humanistic Care Leads to Ethical Risks

The ' instrumental rationality ' of artificial intelligence may squeeze the ' value rationality ', leading to the neglect of the emotional needs of the elderly in the intelligent pension service. First, human-computer interaction inadvertently blurs the boundary of human subjectivity. In the smart old-age care service, intelligent algorithms have gradually replaced human companionship, and preset service responses have also replaced real empathy. Due to the decline in the judgment of the elderly, when they encounter privacy infringement, they are easy to fall into the trap of self-certification, and their legitimate rights and interests are difficult to be effectively guaranteed. Lonely old man can only talk to the machine, and the machine so-called' care ', but a string of temperature-free digital code. This' digital divide ' is not only reflected in the accessibility of intelligent technology, but also in the fracture of emotional connection and understanding.Second, the excessive application of intelligent algorithms erodes family warmth and shakes people 's traditional concept of filial piety to the elderly. Filial piety and respect for the elderly are the traditional virtues of the Chinese nation. Pension institutions use remote monitoring to replace the care and companionship of family children. This is not only a matter of convenience, but also involves the transfer of moral responsibility. By projecting a large number of emotions onto the machine and paying too much attention to the feedback they give, you may suffer from pathological emotional attachment[6]. Third, in the face of the powerful dominance of intelligent algorithms, the elderly often lack the right to choose. In the intelligent pension service institutions, the elderly are closely monitored by predictive algorithms. Intelligent algorithms not only determine their living needs, but also limit their many choices, and even predetermine their healthy future, so that the elderly lose the space to control their lives independently. Fourth, the reserve training of intelligent pension service personnel is weak. At present, the training programs of pension service related courses in most colleges and universities are still based on the cultivation of traditional nursing skills, and lack of courses closely related to home care in smart communities, such as intelligent equipment operation and maintenance management and big data analysis, resulting in the disconnection between talent training and industry demand, which further aggravates the dilemma of talent shortage [7].

3 Legal Countermeasures for Urban Pension Services in the Era of Artificial Intelligence

Under the background of comprehensively governing the country according to law, in order to protect the rights and interests of the elderly according to law, standardize the supply of smart pension services, and promote the steady development of the smart pension industry, we must adhere to the rule of law thinking, practice the rule of law, and form a multi-governance pattern under technological empowerment [8]

3.1 Filling the Legislative Gap in the Special Field of Urban Smart Pension

Accelerate the formulation and promotion of unified standards and norms for smart elderly care services, covering the use of smart devices, data security management, privacy protection, service content and quality, etc., to achieve standardization and standardization of smart elderly care services [9]. First, formulate special legislation on urban smart pension. Accelerate the introduction of the " Urban Smart Pension Service Regulations, " clarify the rights and obligations of service providers, platform operators, equipment manufacturers and other entities, and reasonably define the boundaries of data collection, storage and use. In terms of the division of legal responsibilities, detailed provisions should be adopted to ensure that the responsibilities of all parties are clear, avoid mutual prevarication, and effectively protect the legitimate rights and interests of the elderly. For example, it is clearly stipulated that health monitoring equipment can only collect physiological indicators directly related to services, and it is prohibited to collect irrelevant data such as consumption habits and social relationships. The second is to refine the existing personal privacy protection laws. In the " Personal Information Protection Law, " a special chapter on smart old-age care is added to clarify the " special protection status " of the elderly in data authorization. Service agencies are required to adopt mechanisms such as layered

notification and dynamic withdrawal of authorization to avoid the " passive tick " consent of the elderly. The government needs to vigorously prevent illegal access to information for the elderly, severely punish the sale of personal privacy information, and curb the illegal information industry from the source[10].The third is to strengthen the legislation of urban smart pension technology standards. Through the revision of the " Network Security Law, " the smart pension platform is required to adopt technical means such as data encryption and hierarchical authorization management, and establish a data security emergency response mechanism. Add technical requirements and data security management measures for smart pension platforms and equipment to ensure that information security protection is implemented. In addition, the national standardization management agency should take the lead in formulating and issuing relevant industry standards to ensure the consistency and operability of the implementation of smart old-age care services in urban areas. Fourth, strengthen the international docking of smart pension laws and regulations. In the face of the common challenges of global aging, through the introduction and absorption of foreign advanced wisdom pension legal experience, combined with the actual situation of China 's urban pension, to build a smart pension legal system with Chinese characteristics, to enhance the adaptability and effectiveness of the law to this emerging industry.

3.2 Build a Full-Chain Smart Pension Data Security Mechanism

To speed up the construction of a unified national pension service information platform, formulate data sharing standards, open up data interfaces for civil affairs, health care, medical insurance and other departments, and expand the coverage of " one network office " services for pension services [11]. First, clear data classification and classification management. According to the ' Data Security Law ', the pension data are scientifically classified. Pension data can be divided into different categories, such as core data of genetic information, important data of health records, general data of service evaluation, etc., and different intensity protection measures can be implemented respectively. Relevant organizations formulate and promote industry standards and norms for data security of smart elderly care, guide smart elderly care institutions to consciously abide by data security laws and regulations, and ensure that they meet industry standards in data security technology, management and responsibility implementation. The second is to enforce the compliance requirements of intelligent pension equipment. Strictly stipulate that smart elderly care equipment must pass national certification. For example, smart bracelets need to have data desensitization function to ensure the security of user data during transmission and use ; the emotional companion robot needs to have a built-in algorithm ethics review module to ensure that its decision-making and behavior conform to ethical and moral norms. The civil affairs system of Zhejiang Province has carried out active practice in this regard. By building a " Zhejiang Liyang " intelligent pension service platform, all access devices are required to pass the ISO 27001 information security management system certification. Taking digitization as a breakthrough, the province has effectively solved the problems of insufficient development of pension services and unsmooth docking of supply and demand, and effectively improved the level of wisdom of pension services in the province.The third is to clarify the responsibilities and obligations of each subject in data security protection. The law should clearly require smart elderly care service providers and platform operators to adopt advanced technical means to ensure data security, such as data encryption, hierarchical authorization management, multi-factor identity authentication and other technologies to ensure data confidentiality, integrity and availability. At the same time, clear legal liability and punishment measures should be set up for data security accidents, and strict civil compensation, administrative punishment and criminal responsibility investigation mechanism should be stipulated for data leakage or abuse caused by failure to fulfill data security obligations. Giving the elderly the right not to accept the automatic decision-making of the algorithm means that the elderly have the right to reject the various autonomous decision-making behaviors made by the artificial intelligence pension machine based on the algorithm model[12]. Fourth, establish an inter-departmental pension supervision mechanism. Led by the civil affairs department, the joint network information, public security, market supervision and other departments set up a joint working group on intelligent pension data security, which is responsible for the regular evaluation and review of the qualification, service level, technical security and data protection of service providers. For those who do not meet the standards, corresponding punishment measures should be stipulated, such as administrative fines, suspension of business, revocation of licenses, etc., to ensure the overall quality and safety of smart old-age care services. Fifth, improve the personal information protection regulations and promote the aging transformation. Relevant departments should promulgate the " Interim Provisions on the Protection and Management of Personal Information of Mobile Internet Applications " as soon as possible, strengthen the construction of technical means, and strengthen the protection of personal information of the elderly. At the same time, we will continue to implement the aging transformation of Internet applications to help the elderly enjoy intelligent services more quickly and safely.

3.3 Establish a Detailed System of Joint and Several Liability of Multiple Subjects

Smart pension services involve multiple subjects and multiple scenarios. Smart pension products are special. Only by accurately defining the rights and responsibilities of all parties and building an appropriate responsibility identification and disposal system can disputes be effectively resolved [13]. One is to clarify the responsibility boundary of multiple subjects. In the special legislation, the scope of responsibility of each participant should be clearly defined. Equipment manufacturers are responsible for hardware quality, platform operators are responsible for data security vulnerabilities, and service agencies are responsible for service quality issues. For example, due to the design defects of intelligent medicine boxes, manufacturers need to bear the main responsibility ; due to the failure of the service personnel to remind the elderly in time, the institution shall bear the supplementary responsibility. In view of the complex situation of multi-party infringement in smart elderly care services, a clear principle of responsibility distribution and imputation is established to ensure that the subject of responsibility can be accurately determined when a dispute occurs.The second is to introduce a third-party evaluation mechanism for smart elderly care services. Before the smart pension service is launched, it must be evaluated by the safety and compliance of third-party institutions. At present, Chinese enterprises have made continuous breakthroughs in technological innovation, product application and market promotion in the field of smart old-age care, and have launched toilet robots, exoskeleton robots, feeding robots, cooking robots and other products. For all elderly care robots, they should be required to meet international standards (IEC 63310 ' Performance guidelines for active assisted living robots used in interconnected home environments '), and those who do not pass must not be put into use. Through the third-party evaluation mechanism, the quality and safety of smart old-age care services can be guaranteed from the source and potential risks can be reduced. The

third is to improve the smart pension insurance system. Encourage insurance companies to develop exclusive liability insurance for smart old-age care, and include risks that may cause losses to the elderly, such as data leakage, algorithm discrimination, and equipment failure. Appropriately increasing the data leakage compensation limit of the insured institutions, such as increasing the compensation limit to 5 million yuan, is conducive to effectively dispersing the operational risks of the intelligent pension service institutions and enhancing their ability to cope with risks.

3.4 Strengthen the Ethical Risk Review Mechanism of Smart Old-Age Care

In order to standardize the intelligent old-age care service mode of human-machine integration, we should uphold the people-oriented development concept and clarify the limits and boundaries of the integration of intelligent technology into healthy old-age care. The first is to establish an intelligent algorithm ethics review committee. It is clearly required that the intelligent pension platform be established by a review committee composed of experts in law, ethics and technology to evaluate the transparency, fairness and interpretability of the pension algorithm. The algorithm involving intelligent pension health assessment needs to disclose its decision-making logic and accept public supervision. The elderly have the right to ask a specific subject to explain the automatic decision-making process of the algorithm. When receiving intelligent pension machine services, they can ask the service provider to provide a readable explanation report [14]. The second is to strengthen the standard of humanistic care for smart elderly care. When formulating technical standards, it can be made clear that smart elderly care equipment needs to have ' emotional interaction function '. For example, smart bracelets need to support voice chat, automatic contact with family members in case of an emergency call, etc. At the same time, the' Smart Aging Equipment Design Guide ' was issued, requiring that the font of all equipment operation interfaces should not be less than 18, and the button spacing should not be less than 2 centimeters. In addition, it is necessary to give full play to the positive role of artificial intelligence in the emotional services of the elderly and play a leading demonstration effect. Holographic images and anthropomorphic models can be used to help solve the problems of loneliness and family companionship of the elderly.The third is to carry out digital technology literacy education for the elderly. Through a variety of ways such as community universities and online courses, the cognitive ability of the elderly to smart devices is improved. Taking the " Yinfa AI Classroom " project in Xuhui District of Shanghai as an example, the instructor combined with the on-site demonstration, focused on the analysis of the current high incidence of AI fraud typical techniques and prevention points, and was committed to improving the cognitive level and safety awareness of elderly friends on emerging technologies of artificial intelligence. Help the elderly in urban communities to understand AI dynamics and enjoy the convenience of science and technology. Fourth, strengthen the construction of talent team of smart pension industry. Support colleges and universities to independently set up and dynamically optimize the professional layout according to relevant education policies, and focus on cultivating multi-level and compound talents needed for the smart pension industry[15]. At the same time, we will set up multi-level professional and technical posts, improve the incentive and incentive system, attract professional and technical personnel in the fields of medical and health care, artificial intelligence and other fields to transfer to the smart pension industry, and comprehensively improve the quality of urban smart pension services.

3 Conclusion

In the process of artificial intelligence reshaping the pattern of urban pension services, legal regulation must act as a ' ballast stone ' for technological goodness. At present, there are legal dilemmas such as loopholes in data security, unclear division of responsibilities, and uncontrolled ethical risks. In essence, there is a deep conflict between technical rationality and legal value and humanistic care. To solve these problems, the key is to build a closed-loop system of " preventive legislation-dynamic supervision-inclusive relief. " Through special legislation, the boundary of rights and responsibilities is clarified, technical standards are used to enforce compliance, and ethical review is used to balance efficiency and fairness. Finally, a smart pension legal ecology covering the whole life cycle is formed. Only in this way can we effectively protect the dignity and rights of the elderly and promote the sustainable development of ' technology-enabled pension ' in the wave of urban aging and artificial intelligence digitization.

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