Perspectives

Aging with Disabilities: Navigating the Dual Challenge of Aging and Disability in a Rapidly Aging Society with a Focus on China

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ABSTRACT

China faces the dual challenge of population aging and rising disability rates, creating an "aging-disability overlap" that places unprecedented pressure on the nation's healthcare system. This paper analyzes the complex mechanisms underlying the intersection of aging and disability, revealing that chronic and degenerative diseases are primary contributors to disability among older adults, with disability rates significantly increasing with age and comorbidities. Despite China's implementation of long-term care insurance pilot programs and community-based elderly care services, multiple challenges persist: insufficient financing sustainability, inconsistent assessment standards, regional development imbalances, professional talent shortages, and social-cultural prejudices. In response, this paper proposes a comprehensive strategy framework aligned with "Healthy China 2030"'s goals of strengthening disability prevention and early intervention mechanisms; enhancing long-term care services with diversified security systems; fostering professional talent development in geriatric and rehabilitation medicine; promoting research and application of intelligent assistive technologies; and creating barrier-free communities within an inclusive social environment. Through these coordinated approaches, we aim to improve the quality of life for older adults with disabilities and facilitate dignified and high-quality healthy aging.

China is experiencing a demographic transition characterized by an unprecedented rate of aging, making it the country with the largest population of older adults globally by 2035 (*1*). Alongside aging, the increasing prevalence of disability, largely driven by chronic conditions and degenerative diseases, adds a layer of complexity to the public health landscape. By 2050, it is estimated that more than 30% of China's population will be over 65 years old, with a substantial proportion living with disabilities (*2*). This "double challenge" of aging and disability presents unique challenges to China's healthcare, social services, and broader public health system. While the Chinese government has prioritized "healthy aging" through initiatives like the "Healthy China 2030" plan, the intersection of aging and disability remains underexplored in policy and practice (*3*). This paper aims to highlight the specific challenges associated with aging and disability in China, analyze current policies and regional disparities, and suggest evidence-based strategies to better address this dual challenge within the framework of "Healthy China 2030".

UNDERSTANDING THE INTERSECTION OF AGING AND DISABILITY

As aging progresses, the likelihood of disability increases significantly, particularly in the context of multiple comorbidities and chronic diseases (*4*). In China, recent research indicates that 43.2% of older adults with chronic conditions experience disability, with a higher prevalence among women (36.6%) compared to men (33.9%) (*5*). Age substantially influences disability prevalence, rising from 24.2% among those aged 60–69 to 47.7% in those aged 80 and above. The nature of chronic conditions also significantly impacts disability rates, with Dementia/Parkinson's disease (56.3%), mental illness (53.9%), and cerebrovascular diseases (49.2%) associated with the highest prevalence. Furthermore, multimorbidity elevates risk progressively, from 33.1% if presented with one chronic condition to 49.7% with three or more conditions (*5*).

Conditions such as cardiovascular diseases, diabetes, and osteoarthritis are leading causes of disability, contributing to functional impairments that severely

impact quality of life (*6*). The growing number of disabled older adults places immense pressure on families and the healthcare system. While Chinese culture traditionally emphasizes familial caregiving, increased urbanization and smaller family sizes resulting from the one-child policy have diminished families' capacity to provide care. This evolving social structure has created a widening gap between the demand for long-term care and the ability to provide it, highlighting the need for systemic reforms (*7*).

Furthermore, disability among older adults extends beyond physical limitations to encompass social dimensions. Older adults with disabilities face significant barriers to social participation, contributing to isolation, loneliness, and mental health challenges. Research indicates that social isolation is a major risk factor for cognitive decline, depression, and premature mortality among older adults (*8*). In a society where older adults have traditionally been integrated into family and community life, the increasing detachment of disabled older adults from their social networks represents a growing concern.

UNDERSTANDING THE POLICY LANDSCAPE

China has made substantial progress in addressing the dual challenge of aging and disability through various policy interventions. The introduction of the "long-term care insurance (LTCI) pilot programs" in 2016 represents a pivotal reform aimed at providing financial support for long-term care needs (*9*). Since its launch, the LTCI pilot has expanded to nearly 50 cities across China, with varying coverage rates and implementation models. For instance, the Qingdao model employs a combination of social pooling and individual accounts for financing, achieving a coverage rate exceeding 95%; the Shanghai model emphasizes "community priority," directing 80% of long-term care services to community and home environments; while the Chengdu model innovatively incorporates commercial insurance participation, forming a multi-tiered protection system.

However, LTCI faces significant challenges, including financing sustainability, inconsistent care needs assessment standards and inadequate service quality monitoring mechanisms. To ensure the long-term sustainable development of the LTCI system, it is necessary to establish scientific actuarial systems, improve diversified financing channels, standardize disability assessment criteria, and build service quality evaluation systems (*9*).

Simultaneously, the "development of home-based and community-based elderly care services" represents a key aspect of China's response to the care needs of disabled older adults. By shifting the focus from institutional care to community services, China aims to reduce the burden on healthcare facilities while promoting a more inclusive and supportive environment for older adults. Local governments have implemented "Internet+ Nursing" programs, creating digital platforms that connect disabled older adults with healthcare providers for home-based nursing, rehabilitation, and personalized care services (*10*).

Despite These Efforts, Several Challenges Persist

Regional disparities Significant differences exist in the availability and quality of care services between urban and rural areas, as well as among eastern, central, and western regions of China. Eastern regions like Beijing and Shanghai, have implemented more comprehensive LTCI and elderly care services. Quantitative analysis reveals that eastern developed areas have approximately 40 nursing beds per thousand elderly people, compared to only about 15 beds in less developed western regions. The disparity in professional care personnel is even more pronounced, with eastern regions having approximately 8 professional caregivers per hundred disabled elderly people, compared to fewer than 3 in western regions.

Innovative practices across different regions provide valuable models for addressing these disparities. For example, Hangzhou City in Zhejiang Province has implemented an "Internet+ Home Care" model that connects community health service centers with elderly homes through smart terminals, increasing accessibility to professional medical services for home-bound disabled elderly by 35%. Weihai City in Shandong Province has established an integrated "medical-nursing-rehabilitation-care" service model, providing a seamless connection of medical, elderly care, rehabilitation, and nursing services, offering a replicable model for other regions.

Workforce shortages and training gaps China faces a critical shortage of healthcare professionals specialized in geriatric and disability care. There are fewer than 20,000 specialists in geriatric medicine nationwide, averaging only 1.2 geriatric medicine specialists per 10,000 elderly people, far below the level of 3–5 in

developed countries. Regarding nursing personnel, the current number of professional elderly care nurses can only meet approximately 30% of the care needs of disabled elderly people.

The educational and training system for geriatric medicine remains underdeveloped. Only about 25% of medical schools in China have established independent geriatric medicine courses, and only about 40% of graduates from elderly nursing programs continue working in the elderly care sector. The main challenges faced by the profession include low social recognition, unclear career development prospects, and high work intensity coupled with relatively low compensation.

Some regions have begun exploring innovative models to address these workforce challenges. Shanghai has implemented an "Elderly Care Talent Training Project" that provides vocational training subsidies, establishes career advancement channels, and improves performance incentive mechanisms, significantly increasing the retention rate of elderly care professionals. Sichuan Province has established "Medical-Nursing Integration Demonstration Bases" that encourage specialists from tertiary hospitals to regularly provide geriatric medical services to communities, effectively enhancing the capacity of primary-level geriatric medical services.

Limited accessibility to assistive technologies and rehabilitation Despite their essential role in enhancing independence for disabled older adults, assistive devices and rehabilitation services remain largely inaccessible in remote and under-resourced areas. Currently, smart walking aids, smart beds and chairs, and other assistive devices have only reached approximately 25% of urban elderly populations and only 7% in rural areas. Major barriers include prohibitive costs (with basic assistive equipment consuming about 30% of annual income for rural elderly households), inadequate adaptation services, and insufficient training in device utilization.

Telemedicine applications for elderly rehabilitation services are developing rapidly across China. As of 2022, 23 provincial-level administrative divisions (PLADs) have implemented remote rehabilitation services for the elderly, though coverage rates and effectiveness vary considerably. Sichuan Province's "Internet+ Rehabilitation" project represents a successful implementation, increasing treatment adherence among elderly stroke patients in remote areas by 45% through video guidance and smart device monitoring. However, remote rehabilitation services face significant challenges, including limited digital literacy among older adults, poor compatibility between medical information systems, and a lack of a standardized quality metric for remote services.

Artificial intelligence (AI) technology demonstrates significant potential in disability prevention and management. AI-assisted diagnostic tools are already being utilized in some tertiary hospitals to identify high-risk elderly individuals early, while intelligent monitoring systems can provide 24–48 hours of advance warning of fall risks. To achieve this, the government should increase support for age-appropriate technology development, establish standards for elderly assistive technology, and enhance affordability through government subsidies and medical insurance coverage.

Social and cultural stigma In Chinese society, disability is often associated with dependence and diminished value, resulting in stigma and reduced opportunities for disabled older adults to engage in community life. This marginalization not only impacts their mental health but also limits their access to supportive social networks (*11*). Public health campaigns must address these cultural perceptions and promote an inclusive approach that recognizes the potential contributions of older adults with disabilities.

ADDRESSING THE DUAL CHALLENGE: POLICY RECOMMENDATIONS ALIGNED WITH "HEALTHY CHINA 2030"

Given the scale and complexity of the dual challenge of aging and disability, an integrated approach aligned with the "Healthy China 2030" strategic framework is required. Based on current progress and gaps, the following recommendations are proposed:

Strengthening Preventive Health Services for Disability Prevention and Delay

Establishing early identification and intervention mechanisms for chronic disease risks in older adults is essential, with special attention given to high-risk elderly populations with multiple comorbidities. A community-based "three-level prevention" model should be implemented to integrate rehabilitation training and functional maintenance into basic public health services, making preventive care more accessible. Additionally, targeted health promotion programs should be developed to improve health literacy and

self-management capabilities among older adults, empowering them to take an active role in maintaining their health and preventing disability.

Enhancing the Long-term Care Service and Security System

Accelerating the national coordination of LTCI is crucial to establishing a risk-sharing, multi-channel financing mechanism that ensures sustainable funding for long-term care needs. China should build a comprehensive long-term care service network centered on communities, complemented by institutions, and allowing most older adults to age in place through the provision of specialized institutional care for those with severe disabilities. To ensure quality of care, it is essential to implement standardized care needs assessment criteria and develop robust service quality monitoring systems that can evaluate and enhance the effectiveness of care services.

Strengthening Professional Workforce Development

Incorporating geriatric medicine and rehabilitation medicine into core medical education curricula is fundamental to developing a qualified workforce equipped to address the complex needs of disabled older adults. Clear career development pathways and competitive compensation incentive mechanisms should be established for elderly care professionals to enhance the field's attractiveness and improve retention rates. The implementation of a nationwide "Elderly Care Talent Training Project" would strategically expand the supply of professional talent, particularly in underserved regions where shortages are most acute (*12*).

Promoting Technology Innovation and Application

Supporting research, development, and commercialization of intelligent assistive technologies is essential to reduce costs and improve accessibility of assistive devices for older adults with disabilities. China should develop telemedicine and rehabilitation service models specifically tailored to older adults, accounting for their digital literacy levels and unique healthcare needs. The development of comprehensive elderly health data platforms should be prioritized to enable precision health management, facilitating data-driven decision-making in both elderly care services and policy development.

Building an Inclusive Social Environment

Promoting the development of "barrier-free communities" and "age-friendly cities" creates physical environments that support independence and social participation among older adults with disabilities. Public education campaigns should be enhanced to eliminate discrimination and prejudice, fostering a culture of respect and inclusion. Supporting elderly volunteer services and mutual assistance activities increases social participation opportunities for disabled older adults, enabling them to continue contributing to society while maintaining meaningful social connections that combat isolation and loneliness.

CONCLUSION

China faces a critical juncture in addressing the dual challenge of aging and disability. Recent meta-analyses reveals that 43.2% of older adults with chronic conditions experience disability, with rates increasing significantly with age and the number of chronic conditions. While substantial progress has been made through policies such as long-term care insurance and community-based services, significant regional disparities and workforce shortages persist.

The growing population of disabled older adults requires a holistic approach that prioritizes preventive health services, enhances accessibility to assistive technologies and rehabilitation, promotes equitable resource distribution, expands professional workforce training, and builds an inclusive social environment. By implementing these strategies within the framework of "Healthy China 2030," China can ensure that its aging population, particularly those with disabilities, can lead dignified, fulfilling, and independent lives in the years to come.

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