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Study on the Economic Effects of Family Elderly Care and Medical Burden and Long-Term Care Insurance Policy under Population Aging

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Abstract. With the ongoing deepening of population aging in China, the size of the disabled and semi-disabled elderly population continues to expand, resulting in a significant rise in household expenditure pressure for eldercare and long-term care, and the medical burden associated with aging has become a focal issue in the field of health economics. Long-term care insurance, as a pilot social security policy, is intended to share the care costs for disabled elderly families and alleviate the risks of catastrophic household medical expenses. This paper, from a health economics perspective and based on the Seventh National Population Census, statistical yearbooks, and publicly available long-term care insurance pilot policy documents, reviews the current state of aging in China, the characteristics of elder household medical and care expenditures, and the progress of long-term care insurance pilots. The research finds that long-term care insurance pilot policies can to some extent reduce the out-of-pocket care expenditures of disabled households, but there is a marked divide in policy effectiveness between urban and rural areas. In rural regions, constraints such as insufficient supply of care institutions and shortages of professional caregivers weaken the relief effect compared to urban areas. At the same time, low-income households with severely disabled members still face a significant shortfall in coverage for care expenses, and issues such as policy fragmentation and a single financing mechanism constrain the sustainable development of long-term care insurance.

Keywords: population aging, long-term care insurance, eldercare and medical expenditure, health economics, health equity

1. Introduction

China has entered a stage of deep population aging, with 264 million people aged 60 or above, accounting for 18.70% of the total population. The demand for long-term care is growing rigidly, while the capacity of families to provide care is weakening. Both domestic and international research have addressed the supply and demand of the silver economy, industry development, and the burden-reducing effects of long-term care insurance, but there remains insufficient exploration of urban-rural policy heterogeneity, the care expense gap among low-income, severely disabled households, and constraints of local institutions [1].

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This research focuses on examining the impacts of long-term care insurance on family care burdens and institutional optimization within the silver health and elderly care economy. Specifically, it addresses the characteristics and group differences in the burden of family care spending for the elderly, the heterogeneous burden-mitigating effects of long-term care insurance across urban-rural areas and different disability levels, and existing institutional dilemmas together with their root causes. The study uses multi-source data for cross-validation. By estimating the care expense gaps for families under long-term care insurance and identifying policy heterogeneity, this research provides a basis to improve the long-term care insurance system, optimize the provision of elderly care services, and reduce the burdens of families with disabled members.

2. Definition of health economics concepts related to aging

2.1. Connotation and scope of the silver health and elderly care economy

2.1.1. Connotation analysis

The silver health and elderly care economy centers on the health and elderly care needs of the elderly population and is grounded in health economics and elderly care service theory. It constitutes an economic form built around health maintenance, disease diagnosis and treatment, long-term care, rehabilitation and health preservation, and elderly living services for older adults. Its core essence is to maintain the health capital of the elderly, reduce household health risks, and balance elderly wellbeing with the economic value of the elderly care industry through products, services, and social security systems. The value orientation considers both equity and efficiency: on the one hand, reducing the care burden on disadvantaged groups and achieving health equity through social security, on the other hand, meeting multi-level elderly care needs through market-based provision and promoting the development of the elderly care industry.

2.1.2. Scope definition

The silver health and elderly care economy covers the entire chain of elderly health and elderly care needs. In terms of products and services, it includes medical diagnosis and treatment services, long-term life care, rehabilitation therapy, elderly health products, and home adaptation for the elderly, in terms of business models, it includes home-based care, community-based care, institutional care, and integrated medical and elderly care institutions, in terms of market actors, it comprises public medical institutions, private elderly care institutions, community service centers, and commercial insurance institutions. The research boundary of this paper focuses on related security systems and household medical care expenditures for long-term care, and does not include non-health elderly sectors such as elderly tourism and elderly consumption [2].

2.2. The concept and institutional positioning of long-term care insurance

2.2.1. Conceptual explanation

Long-term care insurance is an insurance scheme that compensates disabled and semi-disabled individuals for the costs of care services arising from the inability to perform activities of daily living. By nature, it is divided into commercial long-term care insurance and social policy-based long-term care insurance. Commercial long-term care insurance is operated by insurance companies on a market-driven basis and targets people with the ability to pay who participate voluntarily. The

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subject of this study is the policy-based long-term care insurance piloted in China, which is part of the social security system, financed through multi-channel funding, focused on covering the basic daily living and medical care expenses of severely disabled individuals, and does not pursue profit.

2.2.2. Institutional positioning analysis

Within the social security system, long-term care insurance is a separate segment of protection independent of basic medical insurance and pension insurance, specifically designed to fill the gap in long-term care protection. It complements critical illness insurance and medical assistance, helping to prevent the financial risks that disability imposes on families. From the perspective of the silver economy and elderly care industry, long-term care insurance pays care service expenses through insurance funds, stabilizes the income of elderly care service institutions, stimulates demand for elderly care services, and guides the standardized development of the elderly care industry. It serves as a key institutional support for the silver economy in health and eldercare [3].

2.3. Statistical definition of elderly healthcare expenditures

2.3.1. Definition of statistical scope

Elderly healthcare expenditure refers to the total cash outlays incurred by elderly households over a certain period for the health and care of older individuals. The scope in this paper includes outpatient consultation fees, inpatient medical costs, medication expenses, professional care service fees, home care labor costs, and rehabilitation consumables, it excludes daily living expenses such as food and housing rent. The determination of catastrophic healthcare expenditure follows the standard commonly used in China: out-of-pocket healthcare and care expenditures of a household exceeding a certain proportion of household disposable income.

2.3.2. Basis for scope selection

This definition distinguishes general living consumption from health and care consumption, aligning with common practices in health economics for household health expenditure statistics. At the same time, it is consistent with the CHARLS questionnaire and various local medical insurance statistical scopes, ensuring the consistency and comparability of subsequent research data, and enabling precise measurement of the health economic burden resulting from illness and disability.

3. Current development status

3.1. Current status of elderly care and medical expenditures among the elderly population

Based on an analysis of recent statistical data, the scale of elderly care and medical expenditures among the elderly in both urban and rural areas has continued to rise, with a growth rate exceeding that of per capita household income. Per capita medical and nursing expenditures for urban seniors are generally higher than those for rural seniors, however, in terms of the proportion of household income spent on these expenses, rural households bear a heavier medical burden. High-income households have higher absolute expenditure amounts, while low-income households, although their total expenditure is not large, have a very high proportion of expenditure relative to household disposable income and thus have weak resilience to financial risks. Disability status is the most

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critical factor driving expenditure disparities, annual caregiving expenditures for households with severely disabled older adults far exceed those for households with healthy older adults.

This paper uses the proportion of out-of-pocket expenditures on elderly care and medical care relative to household disposable income as an indicator for assessing the burden. The results show that for households with severely disabled elderly members, out-of-pocket expenditures on medical care as a percentage of household income are significantly higher than the average, for some low-income households, this ratio exceeds 30%, placing them in the high medical burden category. The high-burden group is concentrated among rural, low-income, and elderly households with severely disabled members. Such households are highly susceptible to catastrophic medical expenses, once an elderly family member becomes chronically disabled, household savings are rapidly depleted, constraining household consumption and the development of their children.

3.2. Overview of the implementation of long-term care insurance pilots in China

3.2.1. Situation in pilot regions

Since 2016, China has launched its first batch of long-term care insurance pilots, which have been gradually expanded. Pilot cities are distributed across the eastern, central, and western regions of the country. There are notable differences in policy models across regions: funding channels include a combination of transfers from medical insurance funds, joint contributions from employers and individuals, and fiscal subsidies, the scope of coverage ranges from institutional care only to coverage that includes home-based care as well, standards for disability assessment, reimbursement rates, and annual payment limits vary across regions. Economically developed cities in the east have higher funding levels and better benefits, pilot cities in the central and western regions have smaller fund pools and offer limited coverage [4].

3.2.2. Evaluation of implementation outcomes

In terms of enrollment, coverage in pilot regions has continued to expand, with the number of elderly individuals with disabilities receiving long-term care insurance benefits increasing year by year, and a large number of families receiving reimbursement for care expenses. In terms of fund operations, revenue and expenditure have remained generally stable in most pilot cities. The pilot program has achieved notable results: the financial burden on families with disabled members has decreased, driving growth in demand for both home-based and institutional care services. At the same time, significant shortcomings remain: disparities in coverage between urban and rural areas persist, reimbursement limits for home-based care are relatively low, disability assessment procedures are cumbersome in some regions, and the supply of care services has not kept pace with the growing demand for coverage [3].

4. Chapter 4: challenges in implementing the long-term care insurance policy and their underlying causes

4.1. Disparities in policy outcomes between urban and rural areas

4.1.1. Insufficient supply of rural long-term care facilities

For long-term care insurance to effectively alleviate the financial burden, accessible care resources are a prerequisite. A comparison of data on urban and rural care facilities reveals that rural areas

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suffer from an insufficient total number of beds, a scattered distribution of facilities, and a wide service radius, many remote villages lack professional care facilities. Rural elderly care facilities have rudimentary infrastructure, insufficient age-friendly renovations, and meager operational subsidies, leading to low participation among private providers. Even though the Long-Term Care Insurance program covers care costs, rural families with disabled members struggle to access professional institutional care nearby and are forced to opt for home-based care. However, reimbursement limits for home-based care are low, significantly diminishing the policy's intended burden-relief effect [5].

4.1.2. Shortage of professional caregivers

There is a significant nationwide shortage of caregivers, and the talent shortage is even more severe in rural areas. In terms of workforce composition, caregivers are generally older, the proportion of certified professional caregivers is low, salary levels are low, professional identity is weak, and staff turnover is extremely high. In rural areas, where salaries are even lower and training opportunities are scarce, it is difficult to attract young nursing talent. The shortage of nursing personnel directly limits the scale of elderly care service provision, even if insurance funds are in place, there are insufficient staff to provide care services, thereby constraining the effectiveness of the long-term care insurance program [5].

4.2. Analysis of the underlying causes of the policy dilemmas in long-term care insurance

4.2.1. Deficiencies in institutional design

Currently, long-term care insurance remains in a fragmented pilot phase, and a unified national system has yet to be established. Coverage varies by region, and there are no uniform standards for funding mechanisms, some areas rely excessively on transfers from medical insurance funds, raising doubts about long-term sustainability. There are significant regional disparities in disability assessment criteria, benefit lists, and reimbursement rules, making it difficult to ensure seamless coordination of care across different regions. This fragmented pilot system raises equity issues, as there are marked disparities in benefits for elderly individuals with the same level of disability across different cities, which hinders the nationwide rollout of the system.

4.2.2. External constraints

In addition to the system itself, multiple external factors constrain policy implementation. Fiscal resources are insufficiently allocated, with inadequate investment in supporting public elderly care services in rural areas, the market-driven development of the elderly care industry is uneven, with ample supply in urban areas but slow development in rural markets, and there is severe disparity in the payment capacity of the elderly population, as low-income seniors—even with reimbursement from long-term care insurance—struggle to afford the remaining out-of-pocket costs. The combination of these multiple external factors exacerbates urban-rural disparities in policy implementation.

4.3. Policy recommendations

First, steadily advance the nationwide coordination of long-term care insurance, unify disability assessment standards, improve diversified financing mechanisms, reduce reliance on medical

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insurance funds, and ensure the long-term sustainability of the fund. Second, increase public investment in elderly care services in rural areas, build and renovate township care facilities, expand the number of affordable care beds, and narrow the urban-rural gap in care infrastructure. Third, improve the care workforce training system, raise salaries and benefits for care positions, provide free vocational skills training, increase the number of certified caregivers, and enhance the attractiveness of these positions. Fourth, establish a safety-net protection mechanism by providing special care subsidies on top of long-term care insurance for low-income families with severely disabled members, thereby narrowing the gap in out-of-pocket expenses [4]. Promote a diversified supply in the senior care industry, support the coordinated development of various care models—including home-based, community-based, and institutional care—and deepen the integration of medical, elderly care, and wellness services. Encourage the development of commercial long-term care insurance to supplement government-sponsored long-term care insurance and meet the demand for higher-quality care among middle- and high-income groups. Actively guide the elderly toward healthy consumption habits, promote the development of preventive health services, reduce the incidence of severe disability through chronic disease management, minimize the need for long-term care at its source, and unlock the economic growth potential of the senior health and elderly care sector [6].

5. Conclusion

This paper systematically examines the economic concepts related to senior health and elderly care, as well as the statistical criteria for elderly care and medical expenditures. Drawing on macroeconomic statistics, it describes the current state of the financial burden of elderly care and medical expenses on families in the context of China's aging population, evaluates the effectiveness of the long-term care insurance pilot program, and identifies practical challenges in policy implementation. This paper addresses the research questions posed at the outset: the burden of elder care on elderly households shows significant disparities across urban and rural areas, income levels, and disability severity, long-term care insurance can alleviate care expenses for families with disabled members, but its effectiveness is constrained by the supply of care services, and institutional fragmentation, urban-rural imbalances in care resources, and a shortage of care professionals are the current core obstacles.

As China enters a stage of deep aging, the demand for long-term care among the elderly continues to grow, and expenses for elderly care and medical treatment have become a heavy burden for many families. The pilot long-term care insurance system offers significant value in reducing this burden and can mitigate the risk of catastrophic medical expenses for families with disabled members. However, the policy benefits show marked urban-rural disparities: urban families benefit more, while rural areas face limitations due to shortages in care facilities and care personnel, thereby restricting the policy's effectiveness. Low-income families with severely disabled members still face a significant gap in out-of-pocket care expenses that cannot be ignored. The current long-term care insurance system has shortcomings in funding rules, coverage scope, and supporting services, and external factors—including fiscal conditions, industry development, and public services—collectively constrain the system's effectiveness.

This study has certain limitations: the microdata sample has geographical limitations, the limited duration of the long-term care insurance pilot program makes it difficult to conduct ultra-long-term tracking analyses, and the analysis of adapting international experiences to the local context could be further deepened. Consequently, the conclusions of this paper have their limitations and do not fully account for certain specific regions or niche elderly care models.

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Future research could explore the impact of smart elderly care technologies on care costs, estimate the long-term fiscal pressures following the nationwide coordination of long-term care insurance, and examine the relationship between preventive health care for the elderly and the risk of disability. As long-term care insurance is rolled out nationwide, it will be possible to obtain panel data covering longer time periods and use more refined econometric models to further evaluate the long-term policy effects.

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