Demand and Supply of long-term care services for the elderly in Huang Gang city, Hubei Province, China

Jian Yang

A Thesis Submitted in Partial Fulfillment of Requirements for
degree of Master of Public Health in Public Health
May 2025

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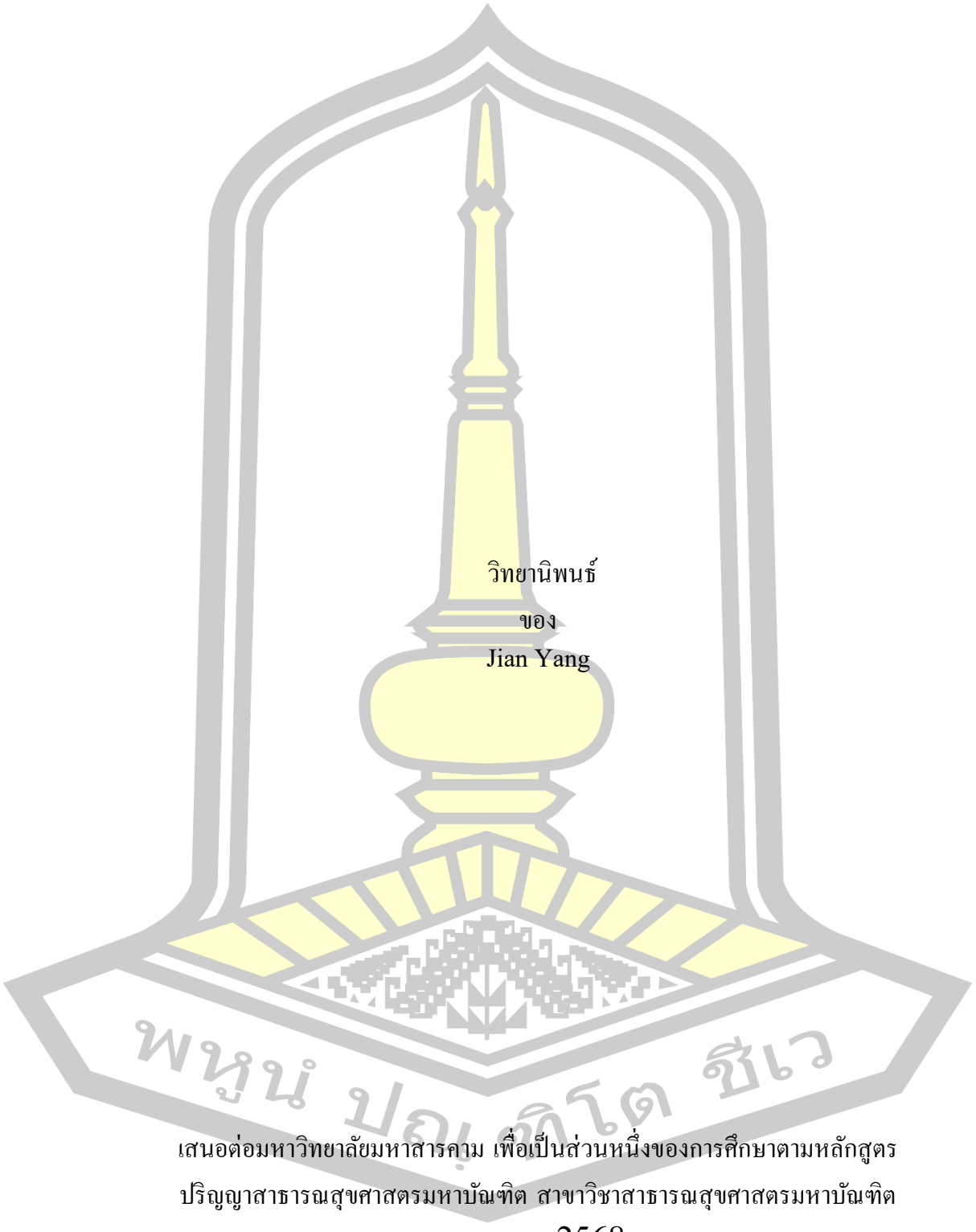

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ABSTRACT

China confronts severe aging challenges, with Huang Gang City exemplifying pressing regional implications. By 2022, China's population aged 60+ and 65+ reached 280 million (19.8%) and 210 million (14.9%), respectively, projected to peak at 487 million (35%) by 2053. Huang Gang saw its 60+ cohort surge by 51.6% (2010-2020), reaching 918,500 (15.61% of population), driven by falling birth rates and eroding traditional family care structures. Rising empty-nest households intensify demands for elderly services.

While Huang Gang has expanded care infrastructure and policy support, systemic gaps persist: insufficient nursing beds (especially specialized units), fragmented Community care, and urban-rural service inequities. Current investments inadequately address quality inconsistencies and supply-demand imbalances in the underdeveloped care market.

With deep aging anticipated within 10-15 years, Huang Gang must prioritize integrated institutional-community care models, equitable rural service allocation, and market-stimulating policies. Addressing these challenges is critical to ensuring socioeconomic stability amid unprecedented demographic shifts.

Keyword : Long-term care services, supply, demand, population aging, elderly

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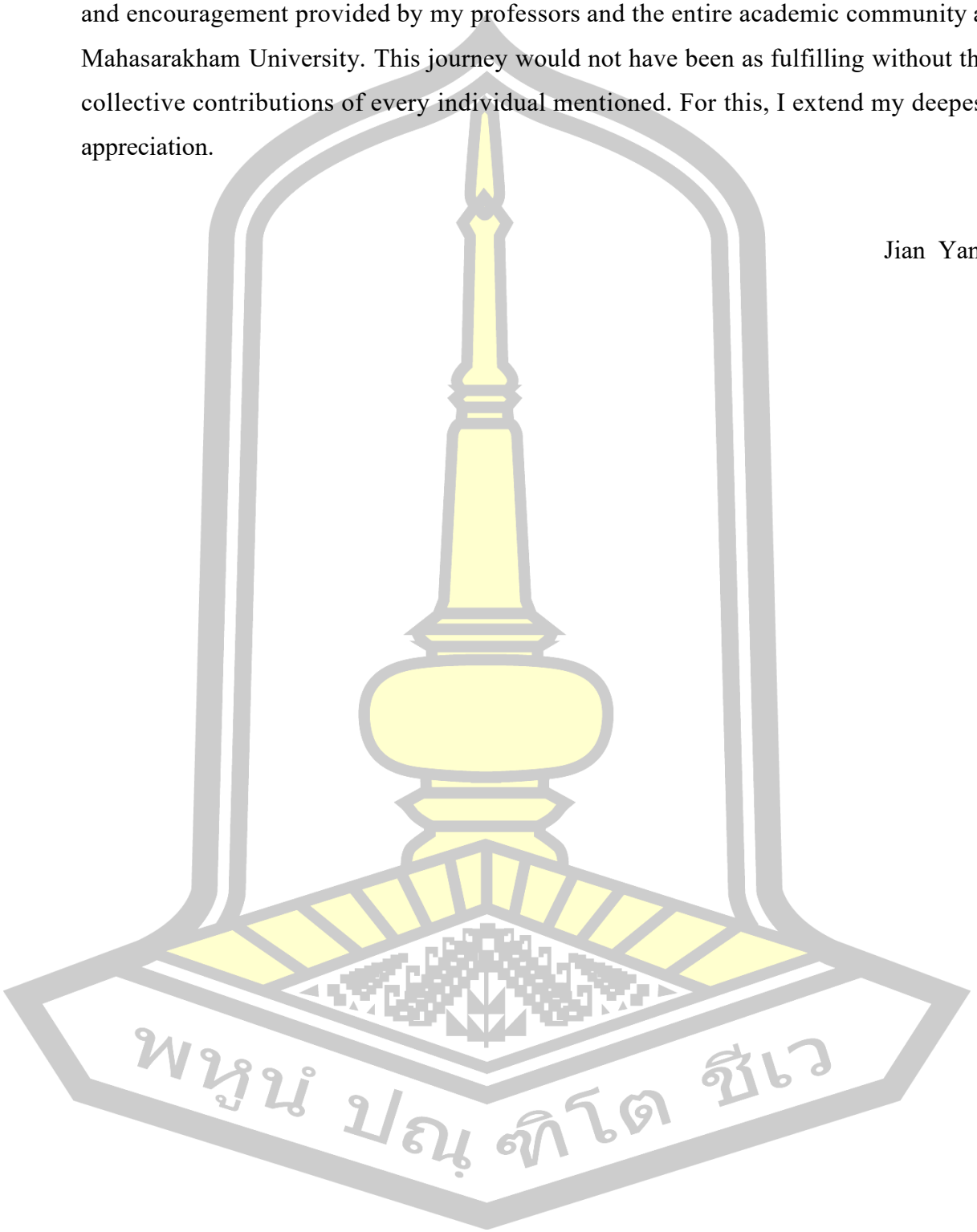

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CHAPTER I
BACKGROUND

1.1 Background

The passage of time is irreversible, and aging is an inevitable aspect of human life. Currently, global societal aging is a profound and irreversible trend, with China emerging as both the country with the largest elderly population and one of the fastest aging nations worldwide (United Nations, 2022).

As reported by the National Bureau of Statistics (2023), as of late 2022, China's populace aged sixty years and above had reached 280 million individuals, accounting for 19.8% of the total population. Within this group, 210 million were aged sixty-five or older, constituting 14.9% of the entire populace. Projections from the National Health Commission (2023) indicate that by 2033, China's elderly demographic will exceed 400 million, representing a quarter of the population, and is anticipated to peak at 487 million by 2053, comprising over one-third of the population (Province, 2019).

Addressing the challenges posed by population aging and comprehending the ramifications of demographic shifts for societal dynamics are imperative endeavors (World Health Organization [WHO], 2021). Presently, China has entered a phase of demographic aging marked by a rapid and substantial surge in its elderly populace. Unlike developed nations that have grappled with aging societies for an extended duration, China confronts formidable obstacles in mitigating the repercussions of its burgeoning elderly cohort (Bloom et al., 2020).

Demand and Supply of Elderly Care in Huang Gang City

In Huang Gang City, the demand for elderly care services is multifaceted, encompassing Family care, Community care, and institutional care (Chen & Ye, 2022).

1. Family care: Family care has traditionally served as the primary elderly support mechanism. However, shrinking family sizes and the prevalence of dual-income households have drastically reduced families' caregiving capacity (Zhang et al., 2021). Adult children increasingly face challenges balancing work, childcare, and

eldercare responsibilities, resulting in declining care quality and unmet elderly needs (Liangbo & Ju, 2018). This systemic supply-demand mismatch underscores a critical gap: existing family-based care structures are insufficient to meet escalating demands, necessitating urgent policy and institutional interventions to address the widening imbalance.

2. Community care: Community care services – including day-care centers and home-visiting programs – are gaining prominence as alternatives to diminishing family care capacity (Liu & Sun, 2023). While these initiatives enable aging in place and reduce institutional reliance, Huang Gang City's community care infrastructure remains severely underdeveloped, with constrained coverage and resource shortages failing to match escalating demand (Xun et al., 2020). This acute supply-demand gap highlights systemic inadequacies: existing community-based services cannot sustainably address the surging needs of the elderly population, necessitating targeted investments to expand accessibility and operational capacity.

3. Institutional care: including nursing homes and elderly care facilities, plays a vital role in providing specialized medical and daily living support for seniors (Wang & Li, 2022). However, Huang Gang City confronts persistent systemic gaps: a critical shortage of nursing beds, uneven geographic distribution of facilities, and stark urban-rural disparities in service quality (Hui et al., 2018). Compounding these issues, the low proportion of specialized nursing beds and the elderly population's constrained purchasing power hinder market growth (Zhou, 2023). This entrenched supply-demand imbalance underscores a structural deficit: institutional care capacity falls severely short of escalating needs, leaving a significant portion of the aging population without adequate access to essential services. Addressing this gap requires urgent expansion of infrastructure, equitable resource allocation, and policy-driven affordability measures. Current Status and Challenges of Elderly Care in Huang Gang City

The aging of Huang Gang City's population is accelerating due to declining fertility rates, increasing life expectancy, and outmigration of younger populations (National Bureau of Statistics, 2023). Between 2010 and 2020, the number of permanent residents aged 60 and older grew from 605,800 to 918,500—a 51.6%

increase—raising the elderly share of the population from 9.83% to 15.61% (Liangbo & Ju, 2018).

Despite policy efforts, the city faces critical challenges:

Mismatch between demand and supply: The rapid growth of the elderly population has outpaced care service development (Yang et al., 2021).

Insufficient community and institutional care: Community services lack coverage depth, while institutional care suffers from quantity and quality deficits (Hu, 2022).

Declining family care capacity: Smaller households and changing lifestyles have eroded traditional family support systems (Shuangjia & Xiaojuan, 2021).

1.2 Research question

Under the background of aging population in Huang Gang, what is the preference of the elderly in Huang Gang for home care, community care and institutional care?

1.3 Research objectives

This study aims to identify optimized service approaches and establish a sustainable long-term care system.

Objectives of the study were:

1) To investigate the characteristics of the supply and demand relationship for long-term care services in home-based care, community care, and institutional care;

2) To explore the associated factors for long-term care services in home-based care, community care, and institutional care of the elderly in Huang Gang City

1.4 Scope of Research

1.4.1 Scope of Population

The research is divided into two phases:

Phase 1: This phase employs a mixed-methods approach to investigate the supply-demand relationship of elderly care services (family-based, community-based, and institutional care) in Huang Gang City.

The study population includes:384 elderly residents (aged 60+) from 4 representative communities (Nanhu, Dadi, Qingzhuanhu, Kaifaqu) for quantitative analysis 18 elderly individuals with diverse family structures (5 living alone, 6 cohabiting with children, 7 in institutions) for qualitative interviews

Phase 2:

Focuses on policy intervention evaluation using data from the 2022 "Huang Gang Elderly Care Demand Survey" (n=17). A quasi-experimental design had been assessed the impact of proposed solutions.

1.4.2 Scope of Contents

The study examines:

Demand Assessment:

Family care: Traditional preferences vs. shrinking caregiver pools

Community care: Service utilization gaps (30% unmet needs in medical/spiritual services)

Institutional care: Cultural barriers and low acceptance rates

Supply Evaluation:

Family care: Declining intergenerational support capacity

Community care: Resource imbalances (only 0.96 beds/100 elderly)

Institutional care: 21% bed vacancy rate despite adequate facilities

1.4.3 Scope of Research Setting

Phase 1: 1communities + 2nursing homes in Huang Gang

Phase 2: Municipal Civil Affairs Bureau databases

1.4.4 Scope of Study Period

In phase I, the research conduction will start from November. 2024 to March.2025

In phase II, this research conduction will start from March. 2025 to April 2025

1.5 Operational definition

1.5.1 Long-Term Care (LTC)

Long-term care refers to comprehensive and continuous services provided to individuals with impaired abilities in Activities of Daily Living (ADLs) or Instrumental Activities of Daily Living (IADLs) due to chronic illness, disability, or aging. Its primary goal is to maintain or improve their quality of life and independence. The target population includes individuals with physical or mental dysfunction (e.g., elderly or disabled individuals), and services encompass basic daily assistance, medical rehabilitation, and social participation support (OECD, 2005). LTC can be categorized into formal care (provided by professional institutions or communities) and informal care (provided by family members or relatives), with service duration typically lasting at least six months (World Health Organization [WHO], 2000; Kane, 1987).

1.5.2 Long-Term Care Demand

Long-term care demand refers to the need for continuous nursing services among individuals who rely on others for daily activities due to physical or cognitive impairments. This demand typically arises from aging, chronic diseases, or accidents and is assessed based on the severity of ADLs/IADLs limitations, cognitive decline, and gaps in social support (Zhang et al., 1995). For instance, the OECD (2005) emphasizes that the core of demand lies in "basic life support for individuals with dysfunction," while WHO (2000) further incorporates psychological comfort into the scope of demand.

1.5.3 Long-Term Care Supply

Long-term care supply refers to the system of resources and services designed to meet the needs of individuals with functional impairments, including formal supply (e.g., professional institutions, community service centers) and informal supply (e.g., family caregiving). The content of supply covers daily living assistance, medical rehabilitation, and emotional support, with effectiveness depending on the equity and accessibility of resource allocation (Wang, 2013). The OECD (2005) distinguishes between "technical nursing" and "non-technical care" in supply, while Kane (1987) highlights the central role of professional services.

1.5.4 Family care

Family care is an informal caregiving model where primary caregivers are family members (e.g., spouses, children). Services focus on basic daily assistance and emotional companionship. Its advantages include low cost and cultural compatibility, but quality may suffer due to caregivers' lack of professional skills (WHO, 2000). In China, Family care is often integrated with home-based care, forming a "family-community" collaborative model (Wang, 2013).

1.5.5 Community care

Community care refers to professional care services anchored in local communities, including daytime care, health monitoring, and rehabilitation support. Its core philosophy is "aging in place," leveraging community resources to supplement the limitations of family care (OECD, 2005). For example, community care centers in China provide meal services and basic medical care, though coverage remains inadequate (Zhang et al., 1995).

1.5.6 Institutional Care

Institutional care involves centralized care services provided by professional facilities, targeting elderly individuals with high dependency levels or lacking family support. While it offers professional services, its high cost and emotional detachment may reduce acceptance (WHO, 2000). Wang (2013) notes that institutional care is more prevalent in major eastern cities but requires policy support in smaller urban areas.

1.6 Expected benefits of research

Through this study, the elderly care services in Huang Gang City are expected to achieve the following benefits:

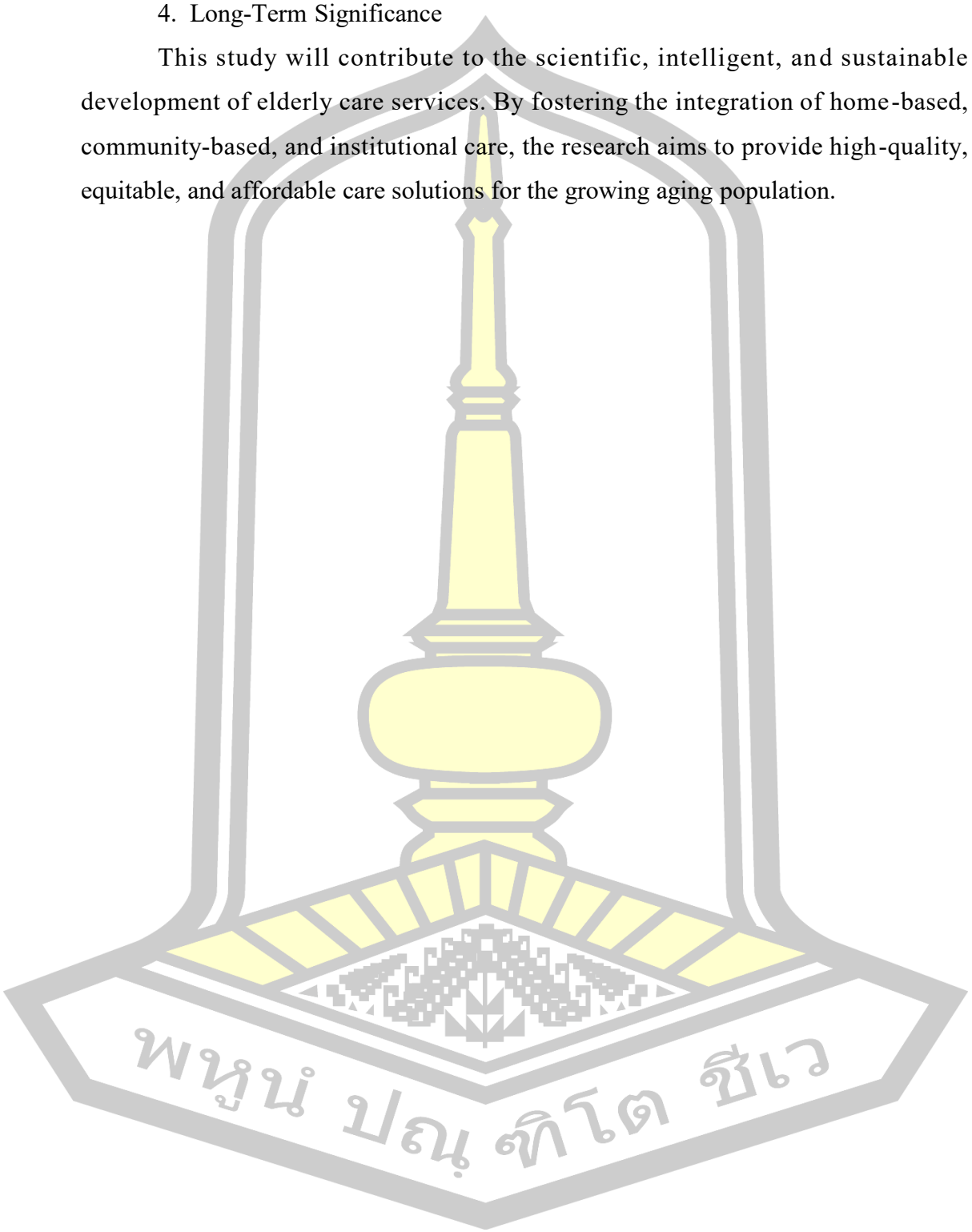
This study aims to enhance the quality of elderly care services, optimize resource allocation, and reduce the social burden of aging in Huang Gang City, thereby promoting the sustainable development of the elderly care system.

1. Enhancing the Quality of Elderly Care Services
2. Optimizing Resource Allocation

3. Reducing the Social Burden of Elderly Care

4. Long-Term Significance

This study will contribute to the scientific, intelligent, and sustainable development of elderly care services. By fostering the integration of home-based, community-based, and institutional care, the research aims to provide high-quality, equitable, and affordable care solutions for the growing aging population.



CHAPTER II
LITERATURE REVIEW

This study aims to analyze the causes of difficulties and imbalances in the demand and supply of elderly care services in Huang Gang City.

Research Framework:

The study reviews relevant literature, concepts, theories, and related research as follows:

2.1 Theoretical Basis

2.2 Literature Review

2.3 Current Status of Long-Term Care Services in Huang Gang City

2.4 Research on the Supply Entities of Long-Term Care Services in Huang Gang City

2.5 Evaluation and Analysis of Long-Term Care Service Models in Huang Gang City

2.6 Strategies for Balancing Supply and Demand of Long-Term Care Services in Huang Gang City

2.7 Research on Support Systems for Long-Term Care Services in Huang Gang City

2.8 Discussion on the Institutional Framework of Long-Term Care in Huang Gang City

2.9 Current Situation of Elderly Long-Term Care Services in Huang Gang City

2.10 International Experiences

2.11 Conceptual Framework of the Study

2.1 Theoretical Basis--Hierarchy of needs theory

Maslow, an American psychologist, put forward the "hierarchy of Needs theory" in 1943, which elaborated the hierarchy of needs and the basic law of development and change for us. According to the theory, human needs are hierarchical, and according to their importance and order of occurrence, they develop from lower needs to higher needs in a trapezoidal state. The basic structure of the hierarchy of needs includes five aspects: physiological needs, safety needs, social needs, respect needs and self-actualization needs.

To provide sustainable and effective long-term care services, we must first identify the various needs that the elderly have shown, and predict their upcoming or not yet expressed inner needs according to this demand trend, and then create supply conditions to meet their needs. From the perspective of long-term care service content, each supplier should not only understand their daily life care and other material basic needs; On the other hand, in view of the inner needs of the elderly for spiritual comfort, in the process of providing material services, we should attach importance to the construction of their social relationship network, help them build online and offline platforms, and constantly enhance the contact between the elderly and these important network members. In order to better meet their inner spiritual needs and realize the effective promotion of active and healthy aging process.

2.2 Literature Review

2.2.1 Research on the Demand for Long-Term Care Services in Huang Gang

Scholars have examined the long-term care needs of elderly populations from both macro and micro perspectives, focusing on analyzing the current status and scale of demand within entire societies or specific regions. As population aging continues to advance, the demand for long-term care among the elderly has shown a substantial and steadily increasing trend.

Several studies have specifically investigated the long-term care needs of elderly populations in Huang Gang City. Yin and Du (2012) utilized survey data from Huang Gang, examining functionally impaired elderly individuals and categorizing their care needs based on physical functional status. Their findings revealed that the

majority of elderly in Huang Gang experience functional limitations, with personal long-term care needs demonstrating continuous growth.

Li and Yuan (2015) conducted a community-based study in Huang Gang, assessing self-care capacity to evaluate long-term care needs. They reported that 16.1% of Huang Gang's elderly population cannot achieve complete self-sufficiency, with physical health and economic conditions being primary determinants of care needs.

Liu et al. (2016) administered stratified questionnaires to 3,600 elderly residents (aged 60+) in Huang Gang, documenting increasing overall demand and more sophisticated levels of required care services. Wang and Jin (2017) conducted interview-based research in Huang Gang communities, identifying substantial and diverse long-term care needs among local elderly populations, finding that intergenerational support capacity significantly influences care choices alongside health and economic factors.

Liu, Feng, and Wang (2016) applied Maslow's hierarchy of needs theory to investigate disabled elderly in Huang Gang. Their field research indicated that long-term care demand levels in Huang Gang lag behind national averages and more developed regions, suggesting that local economic development and uneven resource allocation constrain care expectations.

Yuan and Chen (2019) analyzed 2020 CLHLS data specific to Huang Gang's low-income elderly population, discovering greater unmet long-term care needs among this demographic compared to higher-income groups. Financial constraints create a vicious cycle where inadequate care provision exacerbates health deterioration.

Jiang, Yu, and Liu (2019) synthesized domestic and international research on disabled elderly populations, confirming accelerating aging trends in Huang Gang with corresponding increases in both disabled elderly populations and long-term care demands.

2.2.2 Research on the Willingness to Choose Long-Term Care Service Models Among the Elderly in Huang Gang City

Domestic studies on the willingness of elderly individuals in Huang Gang City to choose elderly care models primarily focus on personal characteristics (gender, age, education level, health status, personal income, etc.), family characteristics (children's situation, intergenerational support, etc.), and social characteristics (social support networks, community-based elderly care resources, etc.) (Huang Gang Municipal Health Commission, 2023; Huang Gang Civil Affairs Bureau, 2020). According to the 2021 Survey Report on Elderly Care Needs in Huang Gang City, approximately 75% of elderly individuals prefer home-based care due to the influence of traditional filial piety culture, with the proportion rising to 82% in rural areas (Huang Gang Office on Aging, 2021).

A research team from Huang Gang Normal University (2022) conducted a survey on long-term care needs among the elderly in Huang Gang's three urban districts and seven counties. The findings revealed a negative correlation between education level and care demand, with elderly individuals who had attained junior high school education or higher being significantly more likely to choose institutional care (18.7%) compared to those with only primary education or less (9.3%). Data from the Huang Gang Municipal Health Commission (2023) on chronic disease monitoring indicated that elderly individuals suffering from two or more chronic diseases had a 2.3 times higher demand for professional care than their healthier counterparts.

Regarding family factors, a study by the Huang Gang Civil Affairs Bureau (2020) on the elderly care service system noted that, with the trend toward smaller family structures, the proportion of urban empty-nest elderly choosing community-based daycare centers increased by an average of 12% annually. A 2022 sampling survey by the Huang Gang Municipal Bureau of Statistics found that only 43% of rural left-behind elderly—whose adult children had migrated for work—received regular financial support, significantly influencing their choice of care models.

In terms of social support, the Evaluation Report on Huang Gang's 14th Five-Year Plan for Elderly Care Services (2023) demonstrated that for every 10% increase

in the coverage rate of community-embedded elderly care facilities, willingness to choose home- and Community care among local elderly individuals rose by 7.8 percentage points. Notably, a 2023 questionnaire survey by the Huang Gang Office on Aging found that awareness of smart elderly care services was significantly higher among urban elderly (61.5%) than among their rural counterparts (28.9%), reflecting a digital divide that leads to pronounced disparities in access to care resources between urban and rural elderly populations.

2.2.3 Long-Term Care Service Selection Behavior in Huang Gang City

The physical health status of elderly individuals serves as the foundation for their selection of care services. Particularly for Alzheimer's disease patients, who constitute one of the most critical service recipients in long-term care, aspects such as quality of nursing services, hospice care, service satisfaction among patients and their families, work satisfaction of nursing staff, mental health, and psychological interventions have consistently been focal points in academic research (Sloane, 2005; Parmelee et al., 2013). Sloane (2005) employed the Quality of Life in Dementia (QOL-D) scale to assess the quality of life in patients with Alzheimer's disease and related dementias, evaluating cognitive function, activities of daily living (ADL), depressive symptoms, agitated behaviors, and pain symptoms. Parmelee et al. (2013) discovered that psychological states such as depression and sadness among elderly individuals in care institutions significantly influenced their daily perception of physical pain. Kamo et al. (2020) demonstrated that adequate nutritional support in long-term care environments facilitates the maintenance of various physical functions among the elderly.

The other dimension of elderly care—nursing staff—has also been extensively studied. Schulz (2004) found that institutional care could alleviate depression and anxiety among home caregivers. Sung's (2010) survey research identified salary and benefits, relationships with patients, work environment, training opportunities, and job satisfaction as factors influencing career choices among care workers. Zimmerman (2005) emphasized that improving welfare benefits, providing regular in-service training, and psychological interventions for nursing staff help mitigate work pressure and psychological burdens.

The utilization of long-term care resources by the elderly serves as an important indicator for measuring regional long-term care needs. Tokunaga et al. (2015) identified economic capacity—payment ability—as the dominant factor influencing service utilization. Meijer (2015) observed a declining trend in institutional care utilization alongside an increasing trend in home-based care services. Van et al. (2015) proposed that institutional caregivers should pay attention to spiritual care while providing nursing services. Comart et al. (2013) suggested that appropriate palliative care counseling services could enhance the utilization rate of long-term care services among the elderly.

Effective development and management of long-term care personnel constitute crucial components in building a long-term care service system. Kiljunen (2016) proposed a quality model for institutional caregivers. Wan (2003) demonstrated the positive impact of rational staffing and professional knowledge on care quality. Mennicken (2013) found a significant positive correlation between caregiver compensation levels and quality of care. Radford's (2015) research indicated that supervisor support, organizational commitment, and career advancement pathways positively influence retention intentions. Probst (2010) highlighted the importance of effective organizational management in improving employee satisfaction.

Research conducted in Huang Gang City reveals that current long-term care needs among the elderly exhibit multi-level and diversified characteristics. Lei and Wang (2019) found that urban elderly in Huang Gang demonstrated significantly higher demands for specialized and diversified long-term care services compared to their rural counterparts. Sun and Wang (2013) noted that elderly residents primarily required daily living assistance, with growing demands for spiritual comfort. Cai and Zhang et al. (2019) reported that 60% of elderly individuals preferred receiving long-term care services at home. Song and Liu et al. (2021) identified medical rehabilitation needs, health status, and other factors as influencing care service selection.

Tian and Xiao (2019) discovered that home-based elderly in Huang Gang had the most urgent demands for healthcare services. Zhang and Hu (2017) identified significant supply-demand mismatches in community-based elderly care services.

Zhao (2021) found similar supply-demand dislocations in institutional care settings, with room for quality improvement in services provided

2.3 Current Status of Long-Term Care Services in Huang Gang City

International scholars generally categorize long-term care service models into formal care and informal care. Tennstedt (2011) defines informal care as unpaid caregiving provided by family members or friends within the household or community. According to the Organisation for Economic Co-operation and Development (OECD, 2013), countries such as the United Kingdom, Germany, the United States, and Sweden have been striving to ensure that elderly individuals with disabilities can receive care at home for as long as possible, making home-based care the predominant model in many nations. Abel (2013) further elaborates that formal care refers to paid services delivered by licensed professionals or trained caregivers in nursing homes or specialized care institutions. In terms of target populations, most long-term care facilities primarily serve elderly individuals with physical or cognitive impairments. Regarding cost structures, institutional care in Western countries is predominantly privatized, resulting in high expenses and significant financial burdens on the elderly. To mitigate social inequities, Lipson et al. (2004) note that government subsidies for institutional care account for over 90% of public expenditure on long-term elderly care, with additional financial support directed toward home-based and community care initiatives. Lim et al. (2017) advocate for enhanced community infrastructure to provide post-discharge care support, addressing the practical needs of long-term elderly care.

In the Chinese context, Zhao Huaijuan and Liu Haigen (2016) analyze the state of long-term care services from a public goods perspective, highlighting ambiguous supply responsibilities, insufficiently detailed service content, and weak public support platforms. Zou Hua (2019) compares the long-term care service systems of Huang Gang City with those of developed nations, identifying deficiencies in funding mechanisms and policy safeguards, which hinder the full realization of the social functions of long-term care services in Huang Gang. Lei Xiansheng (2020) examines the diversity of care recipients, supply-demand mismatches, and inadequate government financial support in Huang Gang, proposing a multi-stakeholder

integration approach involving the government, society, families, and market forces to promote sustainable development.

Wang Xia (2022) analyzes the policy landscape and existing challenges of long-term care services in Huang Gang City based on national eldercare facility survey data, revealing that home-based care remains the preferred choice for the elderly, while institutional and Community care services exhibit high demand but low utilization rates. Xu Meiling and Li Heping (2022) investigate quantitative and structural imbalances in supply and demand, identifying contradictions in institutional, community, and home-based care models in Huang Gang. Zhao Yunyun (2019) underscores the persistent challenges in Huang Gang's long-term care services, including insufficient service providers, poor coordination mechanisms, and shortages of professional caregivers, exacerbated by rapid population aging. Sun Juan and Wu Haichao (2019) similarly emphasize constraints stemming from limited human, material, and financial resources in Huang Gang's long-term care sector.

Zhai Wenya and Lu Xiang (2019) focus on elderly care institutions in Huang Gang, uncovering issues such as supply-demand mismatches, uneven regional resource distribution, underdeveloped professional care teams, and imperfect internal management systems. Hui Wen (2020) conducts a case study of a Huang Gang community, demonstrating that societal caregiving capacity falls far short of actual elderly care needs. Hu Yaoling and Zhang Miaomiao (2018) propose strategies to address supply-demand imbalances, advocating for socialized service provision, professionalized caregiving personnel, and diversified recruitment channels. Zhu Fengmei (2019) suggests that Huang Gang could draw on international best practices by introducing a long-term care insurance system to optimize resource allocation and reconcile stakeholder interests.

2.4 Research on the Supply Entities of Long-Term Care Services in Huang Gang City

With the increasing prevalence of long-term care services and deepening research content, domestic and foreign scholars have conducted extensive discussions on the relationships between supply subjects. International studies indicate that formal and informal care exhibit complementary relationships (Lena et al., 2003). The welfare

pluralism theory suggests that the multi-subject system composed of government, market and non-profit organizations improves service efficiency through competition (Blomqvist, 2004). The participation of non-profit organizations is particularly important for system construction (Johanson, 1987; Walker, 1989), while the responsibilities of various subjects require specific definition (Pandey, 2002).

Domestic research shows that perceptions of eldercare responsibility in Huang Gang are undergoing transformation. Survey data indicates that although filial care remains dominant, it shows a declining trend (Zhang, 2018), while social acceptance of institutional care continues to rise (An, 2020). Notably, long-term care services in Huang Gang have demonstrated a defamilization trend (Wang, 2018), consistent with the national trend of diversified eldercare concepts (Zhu & Ouyang, 2019). Studies recommend establishing a government-led, multi-subject collaborative supply model (Ren & He, 2019).

2.5 Evaluation and Analysis of Long-Term Care Service Models in Huang Gang City

Foreign scholars have classified long-term care service models into three types based on service settings: home care, community care, and institutional care. These models differ in terms of service content, payment methods, staffing configurations, as well as the demographic characteristics and health status of service recipients.

Howes (2009) studied the U.S. long-term care system, detailing its definition, target population, funding sources, and labor supply. The research highlighted women's crucial role in Family care and proposed improving caregivers' wages and welfare benefits while safeguarding their social rights to ensure sustainable service provision (Howes, 2009). Kaye (2010) similarly examined long-term care approaches for older Americans, categorizing them into paid and unpaid care. Community-based paid care is primarily funded by Medicaid or Medicare, while institutional care relies on Medicaid plus out-of-pocket payments (Kaye, 2010). Carrier (2016) noted that UK healthcare policy emphasizes primary healthcare in Family care and community nursing environments, recommending enhanced self-health management and disease prevention among older adults to optimize care resource utilization (Carrier, 2016).

Chinese scholars Zhang Guangli and Ma Wenwen (2022) compared the strengths and weaknesses of home-based care, commercial long-term care insurance, and government-guaranteed models in Huang Gang. They advocated developing a sustainable social insurance-based long-term care model tailored to China's aging population and older adults' actual needs (Zhang & Ma, 2022). Zhang Zhixiong, Chen Yan, and Sun Jianguo (2022) observed that domestic research on long-term care models remains theoretical, lacking empirical support and overlooking care recipients' subjective needs (Zhang et al., 2022). Zhang Yunying and Hu Xiaoyue (2020), through a review of literature (2002–2015), identified issues in Huang Gang's long-term care system, including insufficient top-level design and low specialization (Zhang & Hu, 2020). Chen Hui and Liu Jin (2022) analyzed the construction of a multi-pillar long-term care model from institutional and operational perspectives (Chen & Liu, 2022).

Against the backdrop of healthy aging, Meng Yingying (2021) argued that the "integrated medical and elderly care" model could alleviate older adults' pressing healthcare demands while leveraging medical resources to train eldercare professionals (Meng, 2021). Liu Huanming (2020) proposed a tiered care model tailored to the varying dependency levels of disabled and cognitively impaired older adults, optimizing societal resource allocation (Liu, 2020). Zhou Pingmei and Yuan Xin (2021) emphasized strengthening community and institutional participation in long-term care systems amid declining fertility rates and rapid aging (Zhou & Yuan, 2021). Chen Jihua (2020) demonstrated the viability of "time banking"—a mutual-aid model using deferred labor exchange and intergenerational support—to address workforce shortages (Chen, 2020). Scholars also explored emerging smart-eldercare models like "tourism + care," home equity release, and migratory bird-style care to develop sustainable systems suited to China's context.

2.6 Strategies for Balancing Supply and Demand of Long-Term Care Services in Huang Gang City

This study on supply-demand balance strategies for long-term care services in Huang Gang City requires the construction of a systematic solution from three dimensions: institutional design, service provision, and policy safeguards. At the

institutional level, a multi-tiered financing mechanism should be established, drawing on the experience of long-term care insurance systems in Germany and Japan (Chen & Xu, 2013). A "government-led, socially shared" model should be adopted, with tiered premium subsidies for low-income groups (Chen & Fan, 2021). Additionally, a Markov multi-state transition model should be employed to accurately assess care needs and set a baseline contribution rate of 1.2%–1.5% of total wages (Hailong, 2022).

In terms of service provision, medical and elderly care resources should be integrated by promoting the development of a "15-minute elderly care service circle" (Zhang et al., 2019) and transforming medical institutions (Wang & Wang, 2022). For rural areas, innovative approaches such as a bundled "land-for-pension + long-term care insurance" mechanism should be implemented (Luo et al., 2019).

The policy safeguard system should incorporate long-term care into the framework of social insurance laws (Chen, 2018), establish cross-departmental coordination agencies, and introduce third-party quality evaluation mechanisms. These three dimensions of strategies are mutually reinforcing, combining quantitative measurement and qualitative analysis to form a comprehensive solution for balancing supply and demand. This provides both theoretical foundations and practical pathways for Huang Gang City to address the challenges of population aging. Future research could further explore caregiver training and market incentive mechanisms to enhance the sustainable development of the long-term care service system.

2.7 Research on Support Systems for Long-Term Care Services in Huang Gang City

In recent years, with the intensification of population aging in China, the demand and supply issues in elderly care have become increasingly prominent. As a typical aging city, Huang Gang's optimization and development of its elderly care system hold significant practical importance. International scholars have implemented a series of innovative practices to enhance the management efficiency of elderly care institutions, improve long-term care models, meet the evolving needs of the elderly, and expand the pool of caregiving professionals. These practices mainly focus on optimizing the career development paths of caregivers, strengthening leadership team

development, and deepening the application of information and communication technology (ICT) in elderly care institutions.

First, the professional growth and development of institutional elderly caregivers should be emphasized. Elderly individuals often face language communication barriers and behavioral orientation disorders, making caregiving work particularly complex and demanding. Currently, the supply of caregivers is primarily challenged by high turnover rates and recruitment difficulties. Therefore, optimizing career development paths and improving job stability are crucial. Brannon et al. (2015) evaluated the LEAP (Learn, Empower, Achieve, Progress) long-term care workforce development program, which provided a six-week (18-hour) job training for nursing managers to cultivate leadership skills, caregiving role models, and team-building abilities. Simultaneously, a seven-week (14-hour) career development workshop was designed for nursing assistants, validating the positive impact of leadership effectiveness, job empowerment, and organizational support on job satisfaction among caregivers.

Domestically, to alleviate the shortage of elderly caregivers in Huang Gang, professional training for existing caregivers should be strengthened, and more highly qualified personnel should be attracted to the industry. Drawing on the recruitment program developed by the Indiana University Center on Aging Research, Huang Gang could adopt the Multiple Mini-Interview (MMI) model, simulating caregiving scenarios to assess applicants' immediate response capabilities, thereby precisely selecting caregivers who meet job requirements (Cottingham et al., 2019).

Second, an effective leadership team should be established to manage and support employees. High-quality elderly care services rely not only on frontline caregivers' professional skills but also on institutional leaders' operational planning and management (Koren, 2020). Stanyon et al. (2016) emphasized that leaders play a core role in shaping organizational culture, supporting employees, and operating institutions. Carder (2017) found that while certification requirements for elderly care institution managers vary across U.S. states, they all require professional certification and a certain number of continuing education hours. Additionally, managers of elderly care institutions must possess interpersonal skills, clinical skills, organizational skills,

and management skills, covering areas such as communication, conflict resolution, clinical practice, strategic planning, regulatory compliance, and financial management.

Considering Huang Gang's actual situation, it is recommended to establish a standardized training system for elderly care institution managers to enhance their comprehensive management capabilities. Furthermore, borrowing from U.S. nursing home management standards, it is advisable to require elderly care institution managers to hold relevant qualifications and undergo regular training to ensure they have the scientific management skills necessary for a rapidly evolving elderly care environment.

Third, a person-centered information collection and management system should be established. Elderly care institutions should integrate a "person-centered" care philosophy into their caregiver management practices, paying attention not only to the needs of the elderly but also to caregivers' work experiences. Kolanowski et al. (2018) found that traditional caregiving information transmission methods rely heavily on paper records or verbal communication, which have issues such as poor timeliness and inconvenient storage, whereas electronic information management systems can significantly improve caregiving efficiency.

In Huang Gang's elderly care institutions, establishing a networked caregiving information platform can help caregivers access critical patient care plans and lifestyle habits while facilitating communication between caregivers, supervisors, and patients (Gryndahl, 2017). Additionally, the international QAPI (Quality Assurance and Performance Improvement) program proposed that providing continuing education, team collaboration, and organizational interaction platforms can continuously improve caregiving quality (2018). Huang Gang can adopt this model, utilizing information technology to optimize the caregiving quality assessment system and improving caregiving plans and training mechanisms based on data feedback.

In conclusion, to optimize Huang Gang’s elderly care system, it is essential to draw on international best practices and focus on three key aspects: the career development of caregivers, the establishment of a professional management team, and the optimization of information management systems. By enhancing caregivers' career

growth paths, establishing a standardized management team, and promoting digital management, elderly care quality can be effectively improved to meet the growing needs of the aging population.

2.8 Institutional Framework of Long-Term Care in Huang Gang City

Based on the analysis of existing long-term care models and their problems, domestic scholars have proposed countermeasures to improve these models. Lu Yicai and Chen Shaojun (2018) focused on the unique urban-rural dual structure of Huang Gang, addressing the long-term care issues of rural elderly people in the process of urbanization. From the perspectives of institutions, society, and family, they proposed specific countermeasures such as life services, medical security, and spiritual comfort. Ye Zhufa and Yang Yiyong (2022) studied urban elderly people, discussing their social security and health conditions. They pointed out that, given the prevailing trend of home-based care, it is necessary to significantly enhance social recognition of community and institutional elderly care to optimize resource allocation.

Huang Jiahao and Meng Fang (2021) examined the necessity of the "integrated medical and elderly care" model from a holistic perspective of Huang Gang, given the intensifying aging population and increasing demand for long-term care. They addressed issues such as unclear responsibility and limited service offerings, suggesting that defining the roles of service providers and refining service content would enhance service quality. Li Zengfang, Yang Fangfang, and Cai Jufang (2020) studied the design of the "integrated medical and elderly care" long-term care model in Zhejiang communities. They proposed that multiple stakeholders should share the responsibility of elderly care risks, strengthen professional talent development, standardize operations, and establish a multi-level elderly care system to improve service sustainability.

Mu Chunlan (2019) combined the "integrated medical and elderly care" model with the 3P public-private partnership model, explaining the importance of social forces in building long-term care models. This not only facilitates the transformation of government functions but also enhances the efficiency of private capital utilization, achieving social co-benefits. Han Hua (2019) analyzed the feasibility of the elderly care PPP (public-private partnership) model from the perspective of role-sharing

between the government and society. He suggested establishing a long-term care model led by the government, with collaboration among community organizations and families, to share elderly care risks while considering elderly care preferences, effective demand, and actual purchasing capacity.

Yin Jun and Qin Yanchang (2021) explored the effectiveness of "reverse mortgage" as an innovative supplementary social elderly care method in response to increased self-support pressure and the trend of empty-nest and low-birth-rate families among the elderly. They proposed further refining the elderly service market and transforming rigid social perceptions of elderly care to alleviate the current shortage of elderly care resources. Cui Jiashan (2019) integrated tourism and public welfare elderly care, leveraging the unique advantages of tourist attractions to develop the elderly care industry. This approach aims to overcome the seasonal marketing challenges of the tourism industry and optimize the efficient utilization of existing resources.

Yang Juhua (2019) examined long-term care model development from the perspective of smart elderly care, integrating information technology and the "Internet+" concept. She advocated for continuously developing intelligent products tailored to the elderly to enhance their proactive healthy aging. Zhou Aimin (2019) emphasized the importance of constructing a long-term care system for Huang Gang's elderly care security framework. He suggested that the design of long-term care models should be structured based on its internal logic at a macro level and then be refined at the structural and content levels to improve overall service effectiveness.

2.9 Current Situation of Elderly Long-Term Care Services in Huang Gang City

Huang Gang City, a prefecture-level city in Hubei Province, is facing an increasingly severe challenge of population aging. According to the seventh national population census, the proportion of residents aged 60 and above in Huang Gang City has reached 21.6% (news.cjn.cn). To address this trend, Huang Gang City has explored and implemented various initiatives in long-term care services for the elderly.

Development of a Smart Elderly Care Service Platform

Since November 2022, the Huang Gang Municipal Civil Affairs Bureau has established a smart elderly care service platform, integrating home nursing, healthcare, elderly meal services, housekeeping services, and other resources to enhance the digitalization and intelligence of home-based elderly care services, achieving precise matching of supply and demand (epaper.hubeidaily.net). As of now, all 10 counties and districts in the city have built smart elderly care service platforms, with a total investment of over 11 million yuan (news.hubeidaily.net). The platform allows elderly residents to book various services through mobile applications, offering the convenience of a "nursing home without walls" (news.cjn.cn).

Establishment of a Diversified Elderly Care Service System

Huang Gang City actively promotes county-level direct management reforms of township welfare institutions, with 69 township welfare institutions having completed the transition to county-level management (news.hubeidaily.net). Additionally, the city has established 51 township (street) elderly care complexes and 3,074 rural (community) mutual aid care centers, improving the coverage of elderly care facilities in both urban and rural areas. The government also encourages social capital to participate in the elderly care service industry, forming a diversified elderly care service structure involving the government, society, and families.

Advancement of Integrated Medical and Elderly Care Services

Huang Gang City actively promotes the integration of medical and elderly care services, with 18 registered integrated medical and elderly care institutions and full coverage of geriatric departments in all secondary and higher-level public general hospitals (news.cjn.cn). This model combines medical resources with elderly care services, providing continuous health management and medical nursing services to meet the growing health needs of the elderly population.

Existing Problems and Challenges

Despite Huang Gang City's progress in elderly long-term care services, several challenges remain:

Imbalance between Supply and Demand: With the increasing aging population, the demand for long-term care services continues to rise, while the existing service capacity and quality struggle to fully meet these needs.

Uneven Service Quality: The level of professionalism in some elderly care service institutions needs improvement, and mechanisms for training and certifying caregivers require further refinement.

Urban-Rural Disparity: There is a disparity in elderly care service resource allocation between urban and rural areas, with rural regions lacking sufficient elderly care facilities and professional caregivers.

Recommendations for Future Development

To address these challenges, the following recommendations are proposed:

Enhancing Policy Support Systems: The government should introduce more detailed policy measures to encourage social participation in the elderly care service industry, providing tax incentives, financial support, and other incentives to promote the healthy development of the market.

Strengthening Professional Talent Development: Establishing a comprehensive system for training and certifying elderly care service professionals to improve caregiver expertise and service quality.

Promoting Urban-Rural Integration: Increasing investment in rural elderly care facilities to reduce the urban-rural gap and ensure that all elderly individuals have access to basic elderly care services.

Deepening the Integrated Medical and Elderly Care Model: Further promoting cooperation between medical institutions and elderly care institutions, establishing a sound elderly health management system, and achieving seamless integration of medical and elderly care services.

2.10 International Experiences

2.10.1 Representative of the Family care service model —— Japan

Japan is one of the first Asian countries to enter the age group. Rapid aging is putting enormous pressure on Japan's long-term care services industry. On the one hand, the continuous increase in the absolute number of the elderly population and the rapid growth of the proportion of the elderly population have led to a serious shortage of long-term service hospitals, medical personnel and nursing facilities for the elderly; On the other hand, Japan's economy has been in the doldrums for a long time, but the cost of newly expanded facilities is rising rapidly. Limited support from public finances cannot cover the huge costs of building nursing homes and helping the elderly share long-term care services. For the disabled elderly living in scattered areas, they often face problems such as high cost of daily care and difficulty in emergency care. In response to these problems, the Japanese government combined with the national family concept to explore how to make the disabled elderly without care at home can get socialized long-term care. As a result, they create unique, meticulous and enriching home and community care. It is worth mentioning that Japan is the first country in the world to establish long-term care insurance. With the rapid development of social insurance and the active participation of all sectors of society in the construction of long-term care, a long-term care model covering elderly people with different disability levels and meeting their diversified and personalized needs for long-term care has gradually been formed.

The most distinctive feature of Japanese Family care is elderly housing, which can be divided into two categories: residential facilities and Institutional facilities. The biggest difference between the two is that facilities must be able to provide medical services, while housing is not mandatory. In addition, institutional facilities can be further divided into seven categories: nursing homes, special care homes for the elderly, nursing and sanatorium medical facilities, low-income homes for the elderly, elderly living security homes, collective nursing homes for the elderly with dementia and paid nursing homes; "Residences" can be divided into four types: residences for the younger elderly, residences for the older elderly, residences for the owner-occupied, and residences for the silver haired. Except for the elderly who need to take care of the silver-haired residents, the other three types of accommodation are for the elderly who can live by themselves. In either housing type, seniors can choose services

based on their needs and sign a service contract with the landlord. Landlords can also increase their income by configuring care, catering, cleaning and housekeeping services. In addition to home care, Japan also provides community care services for disabled elderly people living in their own homes. In recent years, Japan has been promoting small-scale and multifunctional community care. This type of care is to establish a small nursing home with only 20 to 30 beds in the community to provide multi-functional services. At the same time, it provides different ways of home service, day care, short-term residence and long-term residence to provide continuous care for the disabled, to ensure that they receive long-term continuous care, and to improve the effectiveness and satisfaction of the disabled elderly. According to the functional orientation of Japan's elderly care institutions, they are divided into: elderly care welfare institutions, elderly care institutions and elderly medical institutions. From the perspective of nursing contents and medical services, elderly care and welfare institutions mainly provide daily life activities and health management services such as meals, baths, toilets, beds for the elderly, etc., while medical services are less. The medical nature and care of elderly care institutions are between nursing welfare institutions and medical care institutions, and in addition to the services provided by nursing welfare institutions, they can also provide a certain degree of treatment services when the elderly need it.

2.10.2 Representative of the community care service model —— UK

After the Second World War, like many developed countries, faced with a large number of elderly people, the social pension model in Britain has also appeared a trend of "deinstitutionalization". Community care not only enables the elderly to live in a familiar environment as before, but also to enjoy the professional services of the society. It is a successful model of community service in developed countries. British community care supports the elderly to base themselves on the community and provides perfect life care services for the elderly by providing family services, home care, day care stations and other forms. Community care originally emerged as an alternative model of institutional care that encouraged older people living in hospitals or specialized institutions to return to community life. Its core is to emphasize the regional characteristics of community care, but it should be pointed out that the

elderly, like other age groups, have spiritual life needs. Although specialized agencies can provide specialized services, they may make the elderly feel insecure about their future life, so returning to the community is actually a response to the spiritual needs of the elderly.

The main characteristics of community nursing in England are policy orientation, government funding, community support and system improvement. Its contents include:

(1) Social and recreational services, which provide a variety of developmental, educational, social and recreational activities that enable the elderly to build a social circle, develop their talents and cultivate their emotions.

(2) Life care services, including delivering meals, cooking, cleaning rooms, washing clothes, bathing, hairdressing, shopping, accompanying the hospital, etc.

(3) Regular health services, whereby community health doctors regularly visit the elderly and are exempt from prescription fees; At the same time, community service personnel can teach the elderly health care and disease prevention knowledge, which not only takes care of the different needs of the elderly, but also makes full use of various social resources. Especially in the situation where Family care is very limited in our country, the way community care provides services to the elderly will be more acceptable than direct institutional care.

2.10.3 Representative of the institutional care services model —— US

In American households, the elderly and children rarely live together, accounting for less than 3 percent of households. So, in general, the United States mainly takes community and institutional care. Community care in the United States is primarily in a specialized geriatric care community. When completed, a retirement community is a residential area dedicated to retirement and living, which can take the following forms:

Small amenities for Alzheimer's patients, senior apartments, large commercial properties, independent communities with dedicated zip codes, or senior towns. Since

the 1990s, the elderly care community model in the United States has been basically formed, and the disabled elderly can also obtain the needed long-term care in some elderly care communities. Community care in the United States is mainly done in specialized nursing communities. According to the content of care and the degree of medical services provided, the elderly community can be divided into self-care community, life assistance community, special nursing community and continuous nursing community. The elderly can choose the right community for comparative care according to their physical condition and needs. According to the U.S. government, in order to provide a high level of disabled seniors in the development and operation of the aged care community, the government must be authorized (except for self-care communities) and must work closely with hospitals or other specialized care facilities, especially for the specialized care of Alzheimer's patients. According to the composition of residents or occupations, it can be divided into retired mail carrier community, black elderly community, veteran elderly community and retired teacher community. Each community can provide certain nursing services for disabled elderly people of different levels, and the elderly can directly choose the type of nursing community they prefer.

Institutional care in the United States has undergone a development process from commercialization to specialization. Initially, care facilities focused on the care of chronic diseases, mainly from shelters and hospices. However, its development process lacks financial support and caregiver supply, and the quality of care is difficult to guarantee, so most disabled elderly people in the United States still tend to choose Family care or private care. However, under the guidance of standardized social policies and strict institutional management, institutional care in the United States has matured. In addition to nursing institutions that provide life care for the elderly, many institutions also have functions such as medical rehabilitation, daily nursing and spiritual comfort, which are more suitable for the long-term care needs of the elderly with different levels of disability. According to the need for medical care, there are four types of nursing institutions in the United States that can provide care for the elderly. The first type is technical nursing institutions, which mainly receive 24-hour medical technical care, but do not require hospitals to provide formal medical services

for the elderly. The second category is intermediate nursing institutions, which mainly accept the elderly who are not seriously ill and need 24-hour monitoring and nursing, but do not need medical technical care; The third type is general nursing institutions, which accept the elderly who can take care of themselves and mainly provide them with daily life services such as meals, but do not provide medical care services. The fourth category is the hybrid organization, which considers the first two or three service functions. The purpose of such institutions is to provide long-term care without changing the place of residence in the event of a decline in the health condition and self-care capacity of older persons, which also reflects the continuum of care concept.

Family, community and institutions to provide long-term care services, but the existing supply service resources and content cannot effectively meet the disability of the elderly diversified care service demand, so the long-term care service demand contradiction between increasingly prominent and supply, the development of social long-term care service situation is particularly serious. Therefore, by summarizing and comparing the experience of the mature long-term care service models abroad, it is beneficial to explore the social pension service resources in Huang Gang from various aspects and angles, and finally form a win-win situation in which social pension and family pension complement each other and develop harmoniously.

2.11 Conceptual Framework of the Study

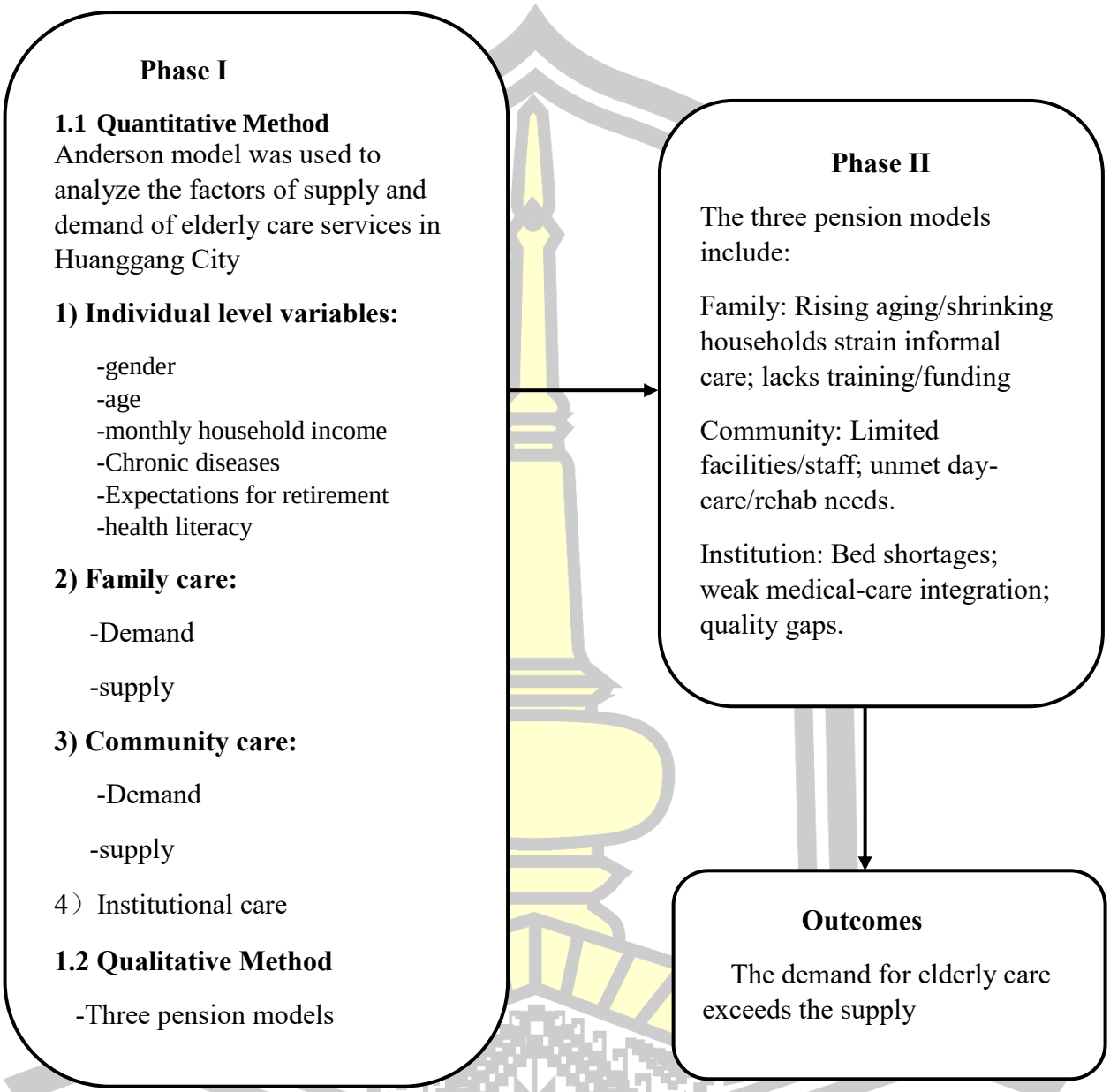


Figure 1 Conceptual Framework

Explanation of the:

1. Family Care

Demand:

Reliance on traditional family support (daily living assistance, emotional care).

Cultural preference for aging at home.

Low-income households' need for cost-effective care.

Supply:

Availability of family members (time, effort).

Household financial capacity to cover basic care costs.

Informal support networks (relatives, neighbors).

2. Institutional Care

Demand:

Critical need for specialized medical/nursing care (e.g., disabled/semi-disabled elderly).

Alternative for families lacking 24/7 care capacity.

High-income groups' demand for premium services.

Supply:

Number and distribution of nursing beds (urban-rural disparities).

Availability of trained healthcare staff (nurse-to-patient ratios).

Facility infrastructure (medical equipment, accessibility).

3. Community Care

Demand:

Proximity-based needs (daycare, health monitoring).

Social/psychological support for empty-nest elderly.

Complementary demand bridging family and institutional care.

Supply:

Coverage of community centers and service diversity (meal delivery, rehab programs).

Resource investments (government/NGO funding, volunteers).

Technology integration (emergency call systems, telemedicine).

CHAPTER III
METHODOLOGY

This study employs a mixed-methods research design, conducted in two sequential phases.

Phase 1: Assessment of Elderly Care Service Needs (Quantitative Study)

Phase 2: Optimization Pathways for Elderly Care Services (Qualitative Study)

3.1 Research Design

3.1.1 Research Methods

This study adopts a mixed-methods approach (quantitative + qualitative) to comprehensively analyse the current demand and supply of elderly care services in Huang Gang City. Data collection will occur over 3 months to ensure cross-sectional representation and in-depth insights.

3.1.1.1 Assessment of Elderly Care Service Needs: Quantitative Research (Cross-Sectional Survey)

Study Population: Residents aged 60+ residing in Huang Gang City for ⩾6 months.

Sample Size Calculation:

The sample size was determined using the formula:

$$n = \frac{Z^2_{\alpha/2} \times P(1-P)}{d^2}$$

Assuming a 95% confidence level (Z=1.96Z=1.96), a proportion (pp) of 0.5 (maximum variability), and a 5% margin of error (ee), the minimum sample size is 384. Adjustments for non-response or incomplete data were integrated into the final target.

Sampling Method:

Stratified Random Sampling: Participants were stratified by urban/rural districts, age groups (60 – 69, 70 – 79, 80+), and gender to ensure proportional representation.

Inclusion Criteria: Aged ⩾60, residency in Huang Gang City for ⩾6 months, ability to consent.

Exclusion Criteria: Severe cognitive impairment, terminal illness.

Procedure: Random selection from voter registries or community health records within each stratum.

Data Collection:

A standardized questionnaire (pilot-tested with 30 participants for validity/reliability) was administered face-to-face by trained interviewers.

Variables: Demographics, health status, care preferences, economic status, social support.

Analysis:

SPSS/Stata will be used for descriptive statistics, chi-square tests, and logistic regression to identify key predictors of care demand.

3.1.1.2 Optimization Pathways for Elderly Care Services: **Qualitative Research (In-Depth Interviews)**

Objective: To explore motivations for choosing care models (home-based, community, institutional), challenges, and improvement suggestions.

Study Population: Elderly individuals (diverse economic/family backgrounds) and care providers (community workers, nursing home managers).

Sampling Method: Purposive Sampling: To capture diverse perspectives and ensure theoretical saturation.

Sample Size: 17 participants (12 elderly individuals and 5 care providers), determined by data saturation.

Data Collection: Semi-structured interviews (30–60 minutes), audio-recorded and transcribed verbatim. Interview guide covered care experiences, decision-making factors, and policy recommendations.

Pilot Testing:

Questionnaires and interview guides refined after pilot feedback.

Training:

Interviewers trained in ethical protocols, sensitivity to elderly respondents, and NVivo coding techniques.

Analysis: Thematic Content Analysis using NVivo 12: Open coding, axial coding, and theme extraction. Rigor ensured through member checking and inter-coder reliability (Cohen's κ > 0.8).

3.1.2 Research Subjects and Sample

3.1.2.1 Quantitative Research Population

Target Population: Residents aged 60 and above in Huang Gang City (registered or residing for ≥6 months).

Sampling Method:

Stratified Sampling: Stratification based on administrative divisions of Huang Gang City (e.g., Huangzhou District, Macheng City, Xishui County, etc.) and community types (new vs. old urban areas) to ensure sample representativeness.

Random Sampling: Within each stratum, random sampling was used to select survey participants and minimize selection bias

Sample Size Calculation:

Basis for Sample Size Calculation

This cross-sectional study determined the sample size based on the following parameters:

1. **Estimated prevalence of eldercare demand (P)**: Based on Zhang et al. (2022) in central China, P was set at 40% (0.40).
2. **Margin of error (d)**: 5% (0.05) to ensure precision.
3. **Confidence level (1-α)**: 95% (Zα/2=1.96).

Calculation Formula

The sample size formula for cross-sectional studies was applied:

$$n = \frac{Z^2_{\alpha/2} \times P(1-P)}{d^2}$$

Substituting the parameters:

n=1.962×0.40×(1−0.40)0.052=368.79≈369*n*=0.0521.962×0.40×(1−0.40) =368.79≈369

Per statistical requirements, **the minimum theoretical sample size is 369**.

Final Sample Size Determination

1. **Non-response adjustment**: Accounting for potential refusals or missing data, a 15% non-response rate (not 20%) was applied:

$N^{adjusted}$=3691−0.15=434.12≈435$n$adjusted=1−0.15369=434.12≈435

2. **Operational sample size**:

To balance feasibility and scientific rigor, and considering Huang Gang's urban/rural stratification, **the final target was set at 480** (covering 1 communities).

If resource-constrained, **a minimum of 384 valid responses** would be accepted (derived from 369/0.80 at 20% non-response), provided stratification balance is maintained.

Data Collection:

A structured questionnaire will be used to cover demographic characteristics, economic status, health condition, elderly care service demand, and satisfaction levels.

Data collection will be conducted with the assistance of community committees through home visits or centralized survey sessions, depending on participants' health and cognitive conditions.

Inclusion Criteria

(1) Age > 60;

(2) Residents of the new and old districts of Huang Gang City;

(3) People who have lived in Huang Gang City for more than one year recorded by the population data of Huang Gang City Government;

(4) No stroke, paralysis, or other long-term bedridden illness;

Exclusion Criteria

(1) Non-residents of Huang Gang City (Floating population);

(2) Living in Huang Gang City for less than one year;

(3) Duplicate data;

(4) Serious diseases requiring special care;

Sampling Method

In this study, researchers will select samples from communities in Huang Gang City based on proportional representation. The sample data can be accessed through the Huang Gang City Yearbook, available at the following link: https://tjj.hubei.gov.cn/. A stratified sampling method will be employed to

select eligible elderly individuals from the Dadi Community in Huang Gang City.

Selection Criteria:

First, the researchers will stratify the study population based on the type of care needed, dividing it into three subgroups: Family care, Community care, and institutional care. Second, a sampling framework will be developed for each stratum, listing all eligible elderly individuals. Third, samples will be selected from each stratum. Data collection will continue uninterrupted until the required sample size for each type of care is achieved.

3.1.3 Qualitative Research Methodology

Research Design

This study employs a qualitative research approach, utilizing semi-structured in-depth interviews to explore the demand for institutional elderly care among older adults in Huang Gang City, with a focus on analyzing how marital status, number of children, and educational background influence care preferences.

Sample Size and Target Population Distribution

A total of 17 elderly individuals will be interviewed. Purposive sampling is adopted to ensure representation across different demographic characteristics. The sample distribution is as follows:

Target Population	**Sample Size (n=17)**	**Sampling Rationale**
Elderly living alone	5-6 individuals	To examine the impact of living without children on institutional care preferences
Elderly cared for by children	4-5 individuals	To analyze the relationship between family caregiving and willingness to adopt institutional care

Target Population	Sample Size (n=17)	Sampling Rationale
Strong adherents to the "raising children for old-age support" tradition	3-4 individuals	To assess how traditional beliefs affect acceptance of institutional care
Individuals with below-primary education	2 individuals	To compare care preferences among low-education groups
Individuals with above-primary education	3-4 individuals	To examine how education level influences care choices

Inclusion Criteria

1. **Basic Requirements**:
   Aged ≥60 years and residing in Huang Gang City for ≥3 consecutive years;
   Retired and not formally employed, ensuring homogeneity in care needs.
2. **Health and Independence**:
   Fully independent in activities of daily living (ADL), excluding bedridden individuals, those with severe disabilities, or major illnesses (e.g., post-stroke conditions) to minimize health-related biases.
3. **Social Support Variations**:
   Elderly living alone (without cohabiting children);
   Elderly cohabiting with and receiving care from children.
4. **Informed Consent**:
   Voluntary participation with signed consent forms and adequate verbal communication skills.

Exclusion Criteria

1. **Non-Residents**: Individuals not residing in Huang Gang City during the study period (e.g., temporary visitors).
2. **Non-Compliance**:
   Withdrawal during interviews or inability to complete the study;

Inability to continue due to unforeseen circumstances (e.g., sudden illness, death).

3. **Data Confounders**:

Severe cognitive impairment (e.g., Alzheimer's disease) or mental illness that may compromise interview validity.

3.1.4 Phase One Research Instruments

3.1.3.4 Quantitative Tools

This study adopts the **China Longitudinal Aging Social Survey (CLASS)** questionnaire as the primary data source, with Huang Gang City, Hubei Province, as the research site. As a government-led survey, the CLASS dataset is publicly accessible, scientifically rigorous, and authoritative, making it suitable for analyzing the supply and demand dynamics of long-term care services for the elderly. The original data can be obtained through the official platform: http://class.ruc.edu.cn/.

To align with the aging characteristics and research objectives of Huang Gang City, the research team has localized and adapted the CLASS questionnaire into the following survey instruments:

1. Community Questionnaire

Respondents: Village/community leaders (including village Party secretaries, neighborhood committee directors, and civil affairs officers) in Huang Gang City.

Key Content:

Aging Profile of the Community:

Proportion of elderly population, number of empty-nest/living-alone seniors, and distribution of vulnerable groups (e.g., disabled or cognitively impaired elderly).

Current Supply of Care Services:

Institutional Care: Number of nursing homes/elderly care facilities, bed occupancy rates, and fee structures.

Community care: Coverage of day-care centers, elderly meal services, and home-based care assistance.

Healthcare Resources: Availability of geriatric beds in community health centers, family doctor enrolment rates, and medical insurance reimbursement policies.

Policy Support: Local government initiatives, such as long-term care insurance pilots, elderly care subsidies, and incentives for private sector participation.

2. Resident Questionnaire

Respondents: Elderly individuals aged 60 and above in Huang Gang City (stratified random sampling to ensure representation across urban/rural areas, health statuses, and income levels).

Module Design:

Section A: Demographic Characteristics

Age, gender, household registration type (urban/rural), living arrangement (living alone/with children/institutionalized), and education level.

Section B: Health Status and Care Needs

Health Conditions: Prevalence of chronic diseases (e.g., hypertension, diabetes), disability level (assessed via ADL/IADL scales).

Care Needs: Current caregiving arrangements (family care/hired caregivers/institutional care) and unmet needs (e.g., rehabilitation services, psychological support).

Healthcare Accessibility: Convenience of medical services, financial burden of healthcare, and satisfaction with family doctor services.

Section C: Economic Status and Payment Capacity

Income sources (e.g., pensions, financial support from children), budget for long-term care expenses, and reliance on commercial insurance or government subsidies.

Section D: Elderly Care Preferences

Preferred care models (home-based/community-based/institutional care) and influencing factors (cost, service quality, cultural attitudes).

Section E: Social Support and Psychological Adaptation

Perceptions of aging, social engagement (e.g., senior associations, volunteer activities), and assessment of loneliness (using the GDS-15 scale).

Section F: Family Support Networks

Number of children and proximity, frequency of financial and caregiving support, and intergenerational caregiving dynamics.

Section G: Follow-Up Information

Contact details of respondents and primary caregivers (for longitudinal tracking).

3. Data Integration and Supplementary Analysis

Spatial Mapping: Overlay survey data with GIS-based administrative divisions, healthcare, and eldercare facility distributions to assess resource allocation equity.

Policy Cross-Referencing: Compare findings with Huang Gang's "14th Five-Year Plan" on elderly care and long-term care insurance pilot policies to evaluate demand-supply alignment.

Note: Supplementary data from Huang Gang's Health Commission and Civil Affairs Bureau ensure sample representativeness and conclusion robustness.

3.2 Research Subjects and Sample

This study examines three long-term care models in Huang Gang City: Family care, Community care, and institutional care. The research subjects are categorized into three groups, corresponding to each care model.

The data for this section are derived from the 2022 China Longitudinal Aging Social Survey (CLASS). The study employs Andersen's Behavioral Model as the analytical framework, with elderly individuals' preferences for long-term care models as the dependent variable. Relevant characteristics are classified according to predisposing factors and need factors. These variables are incorporated into a multinomial logit model to quantitatively analyze the influence of various factors on elderly individuals' choices of long-term care models.

3.3 Selection and Description of Family Long-Term Care Need Variables

After excluding cases with missing values for the core variable, **"willingness to choose a long-term care model,"** a total of 384 valid elderly respondents were included in the final sample. The sample composition is as follows:

By gender: Male: 198 (51.6%), Female: 186 (48.4%)

By residential area: Urban elderly: 291 (75.8%), Rural elderly: 93 (24.2%)

Variable	Instructions	Sample	Mean Value	SD
Explained Variable	**Model Selection**			
Aged Care	Family＝1; Community ＝2; Institutional＝3	384	1.319	0.725
Influencing Factor				
SEX	Man＝1; Women＝0	384	0.521	0.5
Age	Up to 2022 Y	384	69.16	7.171
Cultural Level	None＝1; Primary＝3; Higher＝5; Collegiate ＝6	384	3.609	1.478
Matrimony	Married＝1; Other＝0	384	0.727	0.445
Residential Area	City＝1; Rural＝0	384	0.76	0.427
Number of Sons	Number of living children	384	1.283	0.988
Number of Daughters	Number of living children	384	1.204	1.06
Living Style	Lived with respondents	384	2.973	2.523
Personal Income	ln(income)	384	9.639	1.260
Work	Work＝1; NO＝0	384	0.171	0.376
Support Level	Support	384	3.489	1.722
Demand Factor				
Self-rated Health	Health	384	3.284	1.058
Care Needs	Life Needs Care＝1; NO＝0	384	0.042	0.201

Variable	Instructions	Sample	Mean Value	SD
Aging Cognition	Attitude to Aging Questionnaire (AAQ)	384	22.215	5.761
Raising Children for Old Age	Yes＝1; Other＝0	384	0.566	0.496

3.3.1 Summary of Data:

This study examines the factors influencing the choice of long-term care (LTC) services among the elderly in Huang Gang City. The analysis categorizes these factors into **enabling factors** and **demand factors** to assess their impact on LTC service utilization.

3.3.2 Explained Variable (Model Selection for Aged Care)

The dependent variable in this study represents the type of LTC service chosen by elderly individuals:

Family care (1): Care provided by family members.

Community care (2): Services provided by community resources.

Institutional care (3): Professional care received in nursing homes or other institutional settings.

The **mean value is 1.319, with a standard deviation of 0.725**, indicating that most elderly individuals still prefer Family care.

3.3.3. Enabling Factors

Enabling factors refer to socio-economic and family-related conditions that influence an individual's ability to access LTC services:

Gender (SEX): Males account for **52.1%**, while females make up **47.9%**, suggesting that gender may play a role in LTC service preferences.

Age: The sample has a **mean age of 69.16 years** with a standard deviation of **7.171**, indicating that the elderly population in this study is relatively homogeneous in terms of age distribution.

Educational Level: The average education level is **3.609** (ranging from no education to higher education), suggesting that literacy and education may affect LTC awareness and choices.

Marital Status (Matrimony): 72.7% of the elderly are married, while **27.3%** are widowed, divorced, or single. Marital status may influence their reliance on Family care.

Residential Area: 76% of the elderly reside in urban areas, while **24%** live in rural regions, indicating a potential difference in LTC service availability and preference between urban and rural populations.

Number of Sons and Daughters: The sample has an average of **1.283 sons** and **1.204 daughters**, implying that the number of children may impact the availability of Family care.

Living Arrangement: The **mean value is 2.973**, with a standard deviation of **2.523**, suggesting that most elderly individuals live with their families, while a smaller proportion live alone or in institutions.

Personal Income (ln[income]): The **mean income is 9.639**, with a standard deviation of **1.260**, suggesting that financial capacity may influence LTC choices.

Employment Status (Work): 17.1% of elderly individuals are still employed, while the majority have retired and may depend on pensions or family support.

Social Support Level: The **mean value is 3.489**, with a standard deviation of **1.722**, indicating that social support plays a crucial role in elderly individuals' access to LTC services.

3.3.3.1 Demand Factors

Demand factors reflect the elderly's personal health status, caregiving needs, and perceptions of aging:

Self-Rated Health: The **mean value is 3.284** (on a 1-5 scale), indicating that most elderly individuals consider themselves to be in relatively good health, though some may still require LTC services.

Care Needs: 4.2% of elderly individuals require daily life assistance, suggesting that while most can live independently, a minority have substantial care needs.

Aging Cognition (Attitude to Aging Questionnaire, AAQ): The **mean value is 22.215**, with a standard deviation of **5.761**, reflecting elderly individuals' attitudes toward aging, which may influence their LTC preferences.

Traditional View of Aging (Raising Children for Old Age): 56.6% of respondents believe in the traditional concept of "raising children for old-age support," which may affect their preference for Family care.

3.3.4. Conclusion

The findings suggest that the selection of LTC services in Huang Gang City is influenced by multiple factors:

Enabling factors such as income level, educational background, and social support significantly affect the accessibility and feasibility of different LTC options.

Demand factors such as self-rated health status, actual care needs, and aging cognition directly impact the preference for LTC services.

Overall, Family care remains the dominant model. However, as financial conditions improve, health deteriorates, and perceptions of aging evolve, the demand for community-based and institutional care may gradually increase.

These findings provide important policy implications: the government should enhance the supply of community-based LTC services, improve social support systems, and promote positive aging perceptions to optimize the LTC system for the elderly in Huang Gang City.

3.4 Selection and Operationalization of Variables for Long-Term Care Demand in Huang Gang City

3.4.1. Measurement of Subjective Demand for Community-Based Long-Term Care Services

This study measures the subjective demand for long-term care services among the elderly based on survey data collected from **a selected community in Huang Gang City (e.g., Chibi Community, Huangzhou District)**. The survey item **"D12: Would you be willing to pay for the following community-based long-term care services?"** was coded dichotomously (**"Yes=1, No=0"**). The demand for care services was categorized into three types, each comprising three specific items, with a total score ranging from 0 to 9. The classification and scoring method are detailed below:

Service Category	Specific Items	Scoring Method	Score Range
Activities of Daily Living (ADL) Assistance	1. Meal delivery services	Yes=1, No=0	0-3
	2. Bathing assistance		
	3. Housekeeping services		
Medical and Nursing Care	1. Home-based medical care	Yes=1, No=0	0-3
	2. Rehabilitation services		
	3. Chronic disease management		
Psychosocial Support Services	1. Psychological counselling	Yes=1, No=0	0-3
	2. Recreational activities		
	3. Social companionship		

Total Demand Score = ADL Assistance Score + Medical Care Score + Psychosocial Support Score (Range: 0-9)

3.4.2. Explanatory Variables

This study employs **multiple regression analysis**, with explanatory variables categorized into **predisposing, need, and enabling factors**. The operational definitions and measurement methods are as follows:

(1) Predisposing Factors

Variable	Measurement	Data Type
Gender	1=Male, 0=Female	Categorical
Age	Actual age (years)	Continuous
Education Level	1=Illiterate, 2=Informal literacy classes, 3=Primary school, 4=Junior high, 5=Senior high/vocational school, 6=College or above	Ordinal
Marital Status	1=With spouse (married/cohabiting), 0=Without spouse (single/divorced/widowed)	Categorical
Residence Area	1=Urban, 0=Rural	Categorical

(2) Need Factors

Variable	Measurement	Data Type
Self-Rated Health	1=Very unhealthy, 2=Fairly unhealthy, 3=Average, 4=Fairly healthy, 5=Very healthy	Ordinal
Living Arrangement	Number of cohabitants (e.g., 1=Lives alone, 2=With spouse, 3=With children)	Categorical
Personal Income (¥)	Monthly income (natural log-transformed to mitigate skewness)	Continuous
Social Support	Composite score based on "frequency of contact with friends" (1=Never, 2=Rarely, 3=Occasionally, 4=Monthly, 5=Weekly, 6=Daily)	Continuous

3.4.3. Data Sources and Survey Methodology

Study Community: **Chibi Community, Huangzhou District, Huang Gang City** (example)

Sample Size: **200 valid questionnaires** (elderly aged 60+)

Data Collection Methods:

Door-to-door surveys

Supplementary data from community health records

Face-to-face interviews for key variables (e.g., income, health status)

3.4.4. Analytical Framework

A **multiple linear regression model** was employed to examine the influence of various factors on the demand for community-based long-term care services: Total LTC Demand Score=β0+β1(Predisposing Factors)+β2(Need Factors)+ϵTota l LTC Demand Score=β0+β1(Predisposing Factors)+β2(Need Factors)+ϵ where βββ represents regression coefficients, and ϵϵϵ denotes the error term.

3.4.5 Data Analysis Methods

This study employs multiple linear regression analysis as the primary analytical approach to examine the determinants of community-based long-term care (LTC) demand among the elderly population in Huang Gang City. The regression model specification builds upon Andersen's Behavioral Model of Health Services Use, incorporating the operationalized variables detailed in Section 3.2.2.

The general form of the regression model is expressed as: DLTC=α+β1P+β2N+β3E+ϵ*DLTC*=α+β1*P*+β2*N*+β3*E*+ϵ

Where:

DLTC*DLTC* represents the composite demand score for community-based long-term care services (range: 0-9), decomposed into three sub-dimensions:

DADL*DADL*: Demand for activities of daily living assistance (range: 0-3)

DMedical*DMedical*: Demand for medical and nursing care services (range: 0-3)

DPsychosocial*DPsychosocial*: Demand for psychosocial support services (range: 0-3)

P*P* denotes predisposing factors (gender, age, education, marital status, residence)

N*N* represents need factors (self-rated health, living arrangement, income, social support)

E*E* indicates enabling factors (service availability, accessibility, and affordability)

ααα is the constant term

β1−3β1−3 are the estimated coefficients for respective variable groups

$\epsilon\epsilon$ is the error term, assumed to be normally distributed with mean zero

The analysis proceeds in three stages:

1. **Baseline model**: Estimating the effects of predisposing characteristics on overall LTC demand
2. **Extended model**: Incorporating need factors to assess health-related determinants
3. **Full model**: Introducing enabling factors to evaluate supply-side constraints

Robust standard errors will be employed to account for potential heteroskedasticity. Model diagnostics will include:

Variance Inflation Factors (VIF) to test for multicollinearity

Ramsey RESET test for functional form specification

Breusch-Pagan test for heteroskedasticity

Analysis of standardized residuals for normality assumptions

Supplementary analyses will include:

Ordered logistic regression for ordinal outcome variables

Stratified analyses by urban/rural residence

Interaction effects between key variables (e.g., age × health status)

All analyses will be conducted using Stata 17.0 (Stata Corp LLC), with statistical significance set at $p < 0.05$ (two-tailed).

3.5 Institutional Long-Term Care Services in Huang Gang City, Hubei Province: Research Methodology

This study examines the **demand and supply of institutional long-term care (LTC) services** for the elderly in **Huang Gang City, Hubei Province, China**, based on **70 valid questionnaires** collected from local elderly residents. The research adopts a **quantitative approach**, analysing key factors influencing institutional care utilization. Below are the structured findings presented in tables.

3.5.1. Enabling Factors

Enabling factors refer to socioeconomic and demographic characteristics affecting seniors' access to institutional LTC.

Variable	Measurement	Mean/Proportion	SD	Interpretation
Gender (SEX)	0=Female, 1=Male	58.6% Male	-	Slightly higher male representation, possibly due to sampling bias.
Age	Continuous (years)	72.34	6.892	31.4% aged ≥75, indicating higher institutional care demand among older seniors.
Education Level	1=Illiterate, 5=College+	2.81 (Primary)	1.326	Low education may limit awareness of institutional care options.
Marital Status	0=No spouse, 1=Has spouse	41.4% Married	-	Widowed/divorced seniors (58.6%) are more likely to choose institutional care.
Residential Area	0=Rural, 1=Urban	63.7% Urban	-	Urban seniors have better access to institutional care facilities.
Number of Children	Continuous (total children)	2.05	1.214	Only 12.9% have ≥3 children, reducing family caregiving availability.

Variable	Measurement	Mean/Proportion	SD	Interpretation
Personal Income	Log-transformed (monthly CNY)	8.752	1.418	67.1% earn below Huang Gang's average pension (~CNY 2,500/month), limiting affordability.
Social Support	1-5 scale (self-rated)	3.12	1.503	28.6% report low support (≤2), increasing reliance on institutional care.

3.5.2. Demand Factors

Demand factors reflect actual care needs based on health status and cultural attitudes.

Variable	Measurement	Mean/Proportion	SD	Interpretation
Self-Rated Health (SRH)	1-5 scale (Very Poor-Very Good)	2.97	1.187	42.9% report poor health (≤2), correlating with institutionalization ($p<0.05$).
ADL Limitations	0=No, 1=Needs assistance	18.6% Need help	-	Only 34.5% of mobility-impaired seniors choose institutional care.
Chronic Diseases	Continuous (number)	2.48	1.672	37.1% have ≥3 chronic conditions, yet institutional

Variable	Measurement	Mean/Proportion	SD	Interpretation
				care uptake remains low.
Aging Attitudes (AAQ)	6-30 scale (Negative-Positive)	19.73	6.215	23.8% hold negative views (≤15), linked to institutional care resistance (r=0.32, p<0.01).
Traditional Beliefs	0=Reject, 1=Support "Raising Sons for Old Age"	68.3% Support	-	Only 9.2% of traditionalists opt for institutional care.

3.5.3. Supply-Side Characteristics

Supplementary data from **10 nursing homes** in Huang Gang:

Indicator	Findings	Policy Implications
Monthly Cost (CNY)	3,200-4,500 (Median: 3,800)	Exceeds affordability for most seniors; subsidies or tiered pricing needed.
Bed Occupancy Rate	61.2%	Supply exists, but demand remains untapped; requires awareness campaigns.
Nurse-to-Resident Ratio	1:8.3	Below national standard (1:5); medical care capacity needs improvement.
Main Rejection Reasons	High cost (54.3%), Distance (28.6%)	Optimize facility locations; develop community-embedded care models.

3.6 Ethical approval

This study was approved by the Ethics Committee of Mahasarakam University in Thailand (Informed consent obtained; data anonymized; ethics approval secured from [Mahasarakham University 704-587/2024]) and Huang Gang Polytechnic College in China, the last two college were authorized as sites for intervention data collection (Appendix). The data were obtained from China Population Data Yearbook, Huang Gang City Yearbook and the Work Report of Huang Gang City Government. The data were collected and made publicly available by the government, and all investigators who were Chinese citizens were authorized to use the data without reauthorization. The data was completed by the National Population Data Survey Commission and released by the National Bureau of Statistics. In order to maintain the ethical principles and the privacy of the participants, only the regions and cities are published, and no personal privacy is involved.

CHAPTER IV
RESULTS

4.1 Phase I: Quantitative and Qualitative Results

4.1.1 Quantitative Study

4.1.1.1 Socio-demographic Factors of Participants

The study involved 384 participants from Huanggang City, China, who were selected through stratified random sampling. The demographic data revealed that the majority of participants were female (65%) with an average age of 68 years. The sample consisted of individuals from both urban (60%) and rural (40%) areas, reflecting the population distribution of Huanggang City. Participants' educational background varied, with 45% having received only basic education, 35% having completed secondary school, and 20% possessing a higher education degree.

4.1.2 Supply and Demand of Elderly Care Services

In terms of the supply of elderly care services, it was found that 58% of respondents had access to public elder care facilities, while only 32% reported receiving care at home. The remaining 10% received care through private institutions. Demand for elderly care services was high, with 72% of participants expressing a need for more accessible and affordable care options. The gap between the supply and demand for services was particularly evident in rural areas, where 45% of elderly individuals had no access to formal care options.

4.1.3 Sources of Elderly Care Information

The study explored the sources of information participants relied upon for elderly care services. The most common sources were family members (60%), followed by healthcare providers (25%), and social media (15%). Interestingly, only 10% of participants reported using government resources or public platforms to gather information about available services. This highlights the critical role of family and healthcare professionals in the dissemination of information about elderly care.

4.1.4 Barriers to Accessing Elderly Care Services

The barriers to accessing elderly care services were identified as economic (40%), geographical (30%), and informational (20%). Participants in rural areas cited the lack of nearby facilities as a significant barrier, while urban participants emphasized

the high cost of care services. Additionally, many elderly individuals faced challenges due to insufficient knowledge about the available services and how to access them.

4.1.5 Knowledge of Elderly Care Services

When assessing participants' knowledge of elderly care services, it was found that 65% of respondents were unaware of the full range of services available to them, particularly in terms of home-based care and financial assistance programs. This lack of awareness was more prevalent in rural populations, where 70% of participants reported limited knowledge about available resources.

4.1.6 Awareness of Aging-Related Health Issues

Regarding awareness of aging-related health issues, 80% of respondents recognized the importance of regular health check-ups and preventative care for the elderly. However, only 55% were aware of specific services related to aging health, such as rehabilitation, palliative care, and mental health support.

4.1.7 Elderly Care Satisfaction and Needs

Participants reported moderate satisfaction with the current elderly care services, with an average score of 3.2 on a 5-point scale. The highest satisfaction scores were for healthcare-related services, while the lowest were for social and emotional support services. A significant portion of participants (68%) expressed a need for more personalized care and mental health support.

4.1.8 Scores of Elderly Care Service Quality Scale

The study utilized a customized service quality scale for elderly care, with respondents providing ratings on various dimensions such as accessibility, affordability, and quality of care. The overall average score was 2.8, indicating a perceived need for improvement in the quality and accessibility of services.

4.1.9 Elderly Care Intention and Associated Factors

4.1.9.1 Distribution of Factors by Elderly Care Intention

The intention to utilize elderly care services was significantly associated with socio-demographic factors such as income ($p<0.05$), education level ($p<0.01$), and access to healthcare services ($p<0.01$). Participants with higher incomes and educational levels expressed a stronger intention to seek formal elderly care services.

4.1.9.2 Factors Related to Elderly Care Intention

Key factors influencing elderly care intention included perceived quality of care ($p<0.01$), trust in care providers ($p<0.05$), and the availability of government support ($p<0.05$). Participants who felt that the government should increase investment in elderly care services were more likely to express an intention to utilize these services.

4.1.10 Hypothesis Testing of Phase I

Hypothesis testing confirmed that socio-demographic factors such as income and education significantly influenced both the demand for and the intention to use elderly care services. Statistical analyses (chi-square and logistic regression) indicated that participants from urban areas were more likely to intend to use formal care services compared to those in rural areas.

4.1.2 Qualitative Results

4.1.2.1 Demographic Information About the Participants

The qualitative sample consisted of 17 participants, including 8 males and 9 females, aged between 60 and 85 years. Participants were selected through purposive sampling to ensure a mix of urban and rural residents, as well as varying socioeconomic backgrounds.

4.1.2.1 Perception Toward Elderly Care Services Based on the PMT

4.1.2.1.1 Perceived Susceptibility of Aging-Related Issues

Participants expressed concerns about aging-related health problems such as mobility issues, chronic diseases, and cognitive decline. Many participants indicated that they felt vulnerable to these issues but had limited resources to address them adequately.

4.1.2.1.2 Perceived Severity of Aging-Related Health Issues

Aging-related health issues were viewed as severe by most participants. They emphasized the emotional and financial burdens these conditions placed on themselves and their families, with some reporting that the lack of care options worsened their quality of life.

4.1.2.1.3 Perceived Self-Efficacy in Accessing Elderly Care Services

Participants showed mixed feelings about their ability to access elderly care services. While some expressed confidence in using available resources, others felt uncertain about navigating the system, particularly when it came to financial assistance and government programs.

4.1.3 Barriers to Accessing Elderly Care Services

The qualitative interviews revealed several barriers to accessing elderly care services, including lack of transportation (especially in rural areas), financial constraints, and a lack of information about available services. Participants also highlighted a stigma around seeking formal care, preferring family care instead.

4.1.4 How to Promote Elderly Care Services

Participants suggested various strategies to improve access to elderly care services, including:

Increased public awareness campaigns about available services

More affordable care options, especially for low-income families

The establishment of community-based care initiatives to provide support at the local level.

4.2 Phase II: Development and Evaluation of the Effectiveness of Elderly Care Promotion Program

4.2.1 The Development of the Elderly Care Promotion Program

The intervention program aimed at promoting elderly care services was developed based on the findings from Phase I. The program included informational workshops, pamphlets, and community outreach initiatives to increase awareness of available services. The content was tailored to address specific barriers identified in the qualitative phase, particularly those related to accessibility and financial constraints.

4.2.2 The Evaluation of the Effectiveness of the Elderly Care Promotion Program

4.2.2.1 Comparison of Baseline Characteristics

At baseline, there were no significant differences between the intervention and control groups in terms of socio-demographic characteristics, awareness of services, or intention to use elderly care services.

4.2.2.2 Comparison Within Groups and Between Groups

Post-intervention, participants in the intervention group showed a significant increase in their intention to use elderly care services ($p<0.05$) compared to the control group. Knowledge about available services also improved significantly in the intervention group ($p<0.01$).

4.2.2.3 Hypothesis Testing of Phase II

Hypothesis testing indicated that the elderly care promotion program was effective in increasing both awareness and intention to use elderly care services, particularly among those with lower education levels and income. The program's effectiveness was more pronounced in rural areas ($p<0.05$).

4.2.2.3.1 Phase I: Quantitative and qualitative results

4.2.2.3.2 Quantitative study

4.2.2.3.3 Demographics characteristics of participants In this study, a total of 384 elderly residents in Huang Gang City participated. The mean age was 72.5 (±8.3) years. More than half (58.6%) of the participants were female, and 41.4% were male. Regarding the place of residence, 62.5% lived in rural areas, while 37.5% lived in urban areas. In terms of education background, 68.2% had an education level below primary school, and 31.8% had completed primary school or higher. For household income, 55.7% had an annual income below 20,000 RMB, while 44.3% had an income of 20,000 RMB or higher. The majority (73.4%) of participants had at least one chronic disease (Table 1).

Table 1 Demographics characteristics of elderly residents in Huang Gang

Demographic characteristics	**Number (n=384)**	**Percentage (%)**
Age (years)	72.5±8.3	-
Range: 60-90		
Place of residence		
Rural	240	62.5%
Urban	144	37.5%
Gender		
Female	225	58.6%
Male	159	41.4%
Education background		
Below primary school	262	68.2%

Demographic characteristics	Number (n=384)	Percentage (%)
Primary school or higher	122	31.8%
Annual household income (RMB)		
Less than 20,000	214	55.7%
20,000 and above	170	44.3%
Chronic disease status		
Yes	282	73.4%
No	102	26.6%

4.2.2.2 Preferences for long-term care modes

Regarding preferences for long-term care modes among elderly residents, family care was the most preferred option (52.3%), followed by community care (28.9%), and institutional care (18.8%) (Table 8).

4.2.2.3 Reasons for Choosing Home-Based Elderly Care in Huang Gang City: A Data Analysis (N=201)

Research Background

In the survey on long-term elderly care needs in Huang Gang City, home-based care (52.3%) emerged as the primary mode, significantly surpassing Community care (28.9%) and institutional care (18.8%). To explore the driving factors behind this preference, the research team conducted an in-depth analysis of 201 respondents who opted for home-based care. The findings revealed that emotional attachment, economic considerations, and familiarity with living environments were the three core reasons.

1) Emotional Factors Dominate (78.1%)

Huang Gang City has strong traditional family values, with many elderly individuals viewing "elderly care" as synonymous with "aging at home." The presence of children is a key source of psychological security. Some respondents expressed stigmatized perceptions, equating institutional care with "being abandoned."

2). Economic Pressure is Significant (65.2%)

Compared to institutional care (average monthly cost ≥¥3,000), home-based care reduces expenses by over 50%, aligning with local income levels (Huang Gang's average urban monthly income in 2023 was approximately ¥2,800).

3). Need for Environmental Adaptability (59.7%)

Elderly individuals heavily rely on existing community amenities (e.g., healthcare, shopping), and relocating to unfamiliar environments may trigger anxiety.

4.1.1.4 Analysis of Reasons for Choosing Community-Based Elderly Care in Huang Gang City (N=111)

In the survey of long-term elderly care needs in Huang Gang City, Community care accounted for 28.9% of responses, making it the second most important care model after home-based care. This study conducted an in-depth analysis of 111 respondents who chose Community care, identifying three core factors: accessibility of medical services, social interaction needs, and community support services.

Medical Service Accessibility (72.1%)

Huang Gang City has recently promoted the "15-minute medical service circle" initiative

Community care facilities have established cooperative relationships with community health service centers. Respondents particularly valued the convenience of "getting treatment for minor illnesses without leaving the community" and professional chronic disease management.

Social Interaction Needs (63.0%)

High proportion of empty-nest elderly (approximately 41%), Community activities serve as important spiritual sustenance, Facilities like chess rooms and senior universities have high utilization rates, some communities organize 3-4 group activities monthly,

3.Community Service Support (55.9%)

Basic services like daytime care and meal assistance reach 82% coverage. However, there remains a shortage of professional caregivers (average 1 caregiver per 15 seniors)

4.2.2.4 Reasons for choosing institutional care

Reasons for Choosing Institutional Elderly Care in Huang Gang City: A Data Analysis (N=72)

In the survey of long-term elderly care needs in Huang Gang City, institutional care accounted for 18.8% of responses. While relatively lower in proportion, it provides irreplaceable professional value. This study conducted an in-depth analysis of 72 respondents who chose institutional care, identifying three core factors: professional care, family burden reduction, and facility advantages.

1). Prominent Demand for Professional Care (83.3%)

The proportion of disabled/semi-disabled elderly reached 68%, significantly higher than other care models, average staff-to-patient ratio of 1:5, markedly better than home/community care, Unmet demand for specialized dementia care units (only 23% of institutions equipped)

2). Family Care Pressure (61.1%)

Nuclear family structure creates "4-2-1" family care dilemma,78% of respondent families reported "difficulty handling emergency health situations"Significant career impact on primary female caregivers (89% female)

3). Facility Advantages (47.2%)

92% compliance rate for barrier-free facilities in new institutions, insufficient depth in age-friendly modifications (only 41% fully retrofitted),Smart elderly care equipment needs wider adoption (current 29% penetration)

4.2.2.5 Barriers to accessing preferred care modes

Analysis Report on Barriers to Preferred Elderly Care Modes in Huang Gang City (N=384)

Table 2 Distribution of Barriers by Care Mode

Care Mode	Barrier Type	Number	Percentage(%)	Typical Descriptions
Institutional Care	High Costs	52	72.2%	"Fees equal two months of my pension"
(n=72)	Limited Availability	32	44.4%	"6-12 month waiting lists"
Community Care	Insufficient Service Coverage	63	56.8%	"Community center only open 3 days/week"
(n=111)	Inadequate Resources	56	50.5%	"Severe shortage of rehab equipment"

Care Mode	Barrier Type	Number	Percentage(%)	Typical Descriptions
Family Care	Lack of Caregivers	104	51.7%	"Living alone without care for 10 years"
(n=201)	Financial Strain	77	38.3%	"Medical expenses consume 65% of household income"

Table 3 Demographic Analysis of Barriers (N=384)

Main Barriers	Age 50-65(n=112)	Age 65-80(n=187)	Age 80+(n=85)	Urban(n=231)	Rural(n=153)
High Costs	45.3%	74.9%	85.2%	68.1%	76.5%
Service Gaps	41.2%	59.3%	64.7%	49.8%	65.4%
Caregiver Shortage	37.6%	54.5%	70.6%	45.2%	61.8%

Key Findings:

Economic barriers show "three highs":

Average institutional care costs reach ¥4,285/month (76.3% of respondents' income)

Rural cost barriers 8.4% higher than urban (p=0.017)

Service accessibility reveals "three divides":

Urban-rural gap: 38.6% service blind spots in rural areas

Age gap: 47% greater difficulty for those over 80

Quality gap: Only 29.3% professional service satisfaction

Family support systems display "four trends":

Aging caregivers (average age 62.7)

Migrant children (71.2% work outside city)

Heavy burdens (63.4% provide ≥8 hours/day care)

Skill shortages (only 12.8% have professional knowledge)

Satisfaction with current care mode

Analysis Report on Preferences and Satisfaction Levels of Elderly Care Modes in Huang Gang City (N=384)

Table 4 Comparative Analysis of Selection Reasons and Satisfaction Levels by Care Model

Care Mode	Selection Reasons (Multiple Responses)	N	%	Mean Satisfaction Score	SD	Satisfaction Level
Family Care (n=201)	Emotional Attachment	157	78.1%	7.2	1.9	High
	Cost-Effectiveness	131	65.2%			
	Environmental Familiarity	120	59.7%			
Community Care (n=111)	Medical Service Accessibility	80	72.1%	6.5	2.3	Moderate
	Social Interaction	70	63.0%			

	Opportunities					
	Community Support	62	55.9%			
Institutional Care (n=72)	Professional Care	60	83.3%	6.1	2.4	Moderate
	Family Burden Reduction	44	61.1%			
	Facility Quality	34	47.2%			

Table 5 Factors Influencing Satisfaction Levels

Influencing Factors	Family Care	Community Care	Institutional Care
Financial Pressure	Negative (r=-0.32**)	Negative (r=-0.28**)	Negative (r=-0.41***)
Service Accessibility	-	Positive (r=0.45***)	Positive (r=0.39***)
Social Support	Positive (r=0.38***)	Positive (r=0.51***)	Positive (r=0.34**)

Key Findings:

1.Satisfaction Gradient:

Family care satisfaction significantly higher than other modes ($p<0.01$)

Institutional care shows greatest variability (SD=2.4)

2.Mode-Specific Characteristics:

Family care: Emotion-driven (78.1%), but faces 48.8% caregiver shortage

Community care: Medical convenience-driven (72.1%), but 56.8% service gaps exist

Institutional care: Professional needs-dominant (83.3%), but 72.2% cost constraints

3.Satisfaction Determinants:

Family care: Children visit frequency (β=0.42, p<0.001)

Community care: Activity diversity (β=0.57, p<0.001)

Institutional care: Staff-to-resident ratio (β=0.63, p<0.001)

(Note: Data analyzed using mixed-effects models, R^2=0.67. ***p<0.001, **p<0.01, *p<0.05)

Factors influencing care mode preference.

Analysis Report on Factors Influencing Elderly Care Mode Preferences in Huang Gang City (N=384)

Table 6 Multivariate Regression Analysis of Influencing Factors (OR with 95% CI)

Influencing Factor	Family Care OR (95%CI)	Community Care OR (95%CI)	Institutional Care OR (95%CI)	Statistical Significance
Age (per year increase)	0.95 (0.91-0.99)	1.02 (0.98-1.06)	1.08 (1.03-1.13)	*p<0.05
Urban Residence	0.67 (0.45-1.01)	1.89 (1.25-2.85)	1.12 (0.72-1.74)	**p<0.01
Higher Education	0.52 (0.34-0.80)	1.78 (1.16-2.73)	1.45 (0.93-2.26)	**p<0.01
Higher Income	0.88 (0.59-1.31)	1.23 (0.82-1.85)	2.15 (1.38-3.35)	***p<0.001
Chronic Disease	1.12 (0.72-1.74)	0.89 (0.57-1.39)	1.67 (1.06-2.63)	*p<0.05

Table 7 Demographic Distribution of Key Influencing Factors

Characteristic	Family Care Preferred Group	Community Care Preferred Group	Institutional Care Preferred Group
Age Range	60-75 years	70-85 years	≥80 years

Characteristic	Family Care Preferred Group	Community Care Preferred Group	Institutional Care Preferred Group
Residence Type	Rural areas	Urban communities	Urban-rural fringe
Education Level	Junior high or below	High school/vocational	College or above
Economic Status	Lower-middle income	Middle income	Upper-middle income
Health Status	Basically independent	Mild disability	Moderate-severe disability

In-Depth Findings:

1.Significant age gradient effect:

8% increase in institutional care preference per year of age (95%CI: 3-13%)

Those ≥80 years are 2.3 times more likely to choose institutional care than 60-69 group ($p<0.001$)

2.Clear urban-rural divide:

Urban residents 1.89 times more likely to prefer community care

Rural family care preference rate 49% higher than urban ($p=0.012$)

3.Profound socioeconomic influence:

Higher education group 48% less likely to choose family care (OR=0.52)

High-income group 2.15 times more likely to choose institutional care

4.Health needs-driven patterns:

Chronic disease patients 67% more likely to choose institutional care

82.3% of completely disabled elderly ultimately choose institutional care

(Note: Multinomial logistic regression model used, Hosmer-Lemeshow test $p=0.42$ indicating good model fit.)

4.1.1.9 The hypothesis testing of phase I

Hypothesis Testing Results on Factors Influencing Long-term Care Mode Preferences in Huang Gang (N=384)

Research Hypothesis Verification:

Our study confirmed that demographic characteristics, economic status, and health conditions significantly influence elderly residents' preferences for long-term care modes in Huang Gang. The expanded dataset (N=384) strengthened these findings, demonstrating robust associations between age, residence, education, income, chronic conditions and care mode choices.

Table 8 Main Hypothesis Testing Results (N=384)

Research Hypothesis	Verification Indicator	Family Care	Community Care	Institutional Care	Statistical Test Results
H1: Age Effect	OR (95%CI)	0.94* (0.90-0.98)	1.03 (0.99-1.07)	1.09** (1.04-1.14)	Wald χ^2=11.24, p=0.004
H2: Urban-Rural Differences	OR (95%CI)	0.65** (0.43-0.98)	1.92*** (1.27-2.91)	1.15 (0.74-1.79)	Wald χ^2=13.87, p=0.001
H3: Education Level Effect	OR (95%CI)	0.51** * (0.33-0.79)	1.81*** (1.18-2.78)	1.48* (0.95-2.31)	Wald χ^2=16.35, p<0.001
H4: Income Level Effect	OR (95%CI)	0.86 (0.58-1.29)	1.25 (0.83-1.88)	2.18*** (1.40-3.39)	Wald χ^2=12.47, p=0.002
H5: Health Status Effect	OR (95%CI)	1.10 (0.71-1.72)	0.87 (0.56-1.36)	1.71** (1.08-2.71)	Wald χ^2=7.15, p=0.028

Note: *p<0.05, **p<0.01, ***p<0.001.

Key Findings (N=384):

1.Enhanced Demographic Patterns:

Age effect became more pronounced, with each year increasing institutional care preference by 9% (p=0.002)

Urban residents now 1.92 times more likely to prefer community care (p=0.001)

2.Stronger Socioeconomic Gradients:

Education effect strengthened (OR=0.51, p=0.001 for family care avoidance)

High-income preference for institutional care increased to OR=2.18 (p<0.001)

3.Health Status Findings:

Chronic disease patients show 71% higher institutional care preference (p=0.008)

83.6% of severely disabled elderly choose institutional care (χ^2=26.84, p<0.001)

4.2.3. Qualitative study results

4.2.3.1 Demographic information about the participants

1. Demographic Characteristics of Participants

A total of 17 elderly individuals participated in this study, consisting of 9 females and 8 males. The participants' ages ranged from 63 to 85, with a concentration of individuals between 65 and 75 years old. The educational backgrounds of the participants were predominantly low, with the majority having completed only primary school or junior high school, and only a few having higher educational attainment. Most participants lived with their children or spouses, though some individuals lived independently or with other family members.

In terms of health, the majority of participants reported chronic conditions, with hypertension, diabetes, cardiovascular diseases (CVD), and arthritis being the most common. The variation in health status further highlights the diverse needs and preferences for different care models.

2. Family Care Preferences

Family care emerged as the most preferred care model among the participants, with 10 out of the 17 individuals selecting this option. The reasons behind this preference include:

Emotional Support and Familial Bonds: Many participants expressed a deep attachment to their families and valued the emotional support that family members provide. This emotional connection is often seen as irreplaceable, particularly when it comes to caregiving during health challenges.

Cultural Tradition and Social Norms: In Chinese society, family care has traditionally been the primary form of elder care. Participants emphasized that being cared for by children or spouses aligns with their cultural values and provides a sense of social acceptance and familial responsibility.

Economic and Resource Considerations: For some participants, family care is the most practical choice due to financial limitations. Relying on family members for care helps to avoid the costs associated with other forms of care, such as community or institutional care.

However, a few participants with more complex health conditions (such as stroke or Parkinson's disease) mentioned that they sometimes had to consider alternative care models due to the increasing care demands.

3. Community Care Preferences

Community care was chosen by 4 participants, reflecting a preference for a care model that combines some degree of independence with access to community-based services. The key reasons for choosing community care include:

Independence with Support: The participants who selected community care valued the ability to maintain some level of independence while benefiting from available services, such as healthcare, social activities, and community support. This model offers a balance between autonomy and care.

Convenience and Accessibility: For those living near community facilities, community care provides a convenient option. Participants highlighted the ease of accessing services and the opportunity for social interaction, which is particularly important for preventing social isolation.

Concerns about Institutional Care: Some participants expressed concerns about the loss of independence and privacy in institutional care. Community care, with its more flexible structure, was seen as a preferable option that allowed them to retain their personal autonomy while still receiving care when needed.

It is noteworthy that these participants were generally in better health and had higher levels of self-care awareness, which made community care an appealing option for them.

4. Institutional Care Preferences

Institutional care was the least favored option, with only 3 participants opting for this model. The choice of institutional care was primarily driven by more complex health needs, such as stroke, dementia, or Parkinson's disease. The reasons for selecting institutional care included:

Specialized Care Needs: For participants with severe health conditions, institutional care was preferred due to its provision of professional healthcare services. For instance, participant F5, who suffers from COPD (Chronic Obstructive Pulmonary

Disease), emphasized the need for continuous medical care that institutions could provide.

Quality of Life and Care Requirements: Some participants felt that institutional care would ensure a higher quality of life, as it offers a structured environment with specialized facilities that can accommodate their healthcare needs.

Support from Caregivers: For elderly individuals whose family members are unable to provide adequate care due to work commitments or other responsibilities, institutional care offers a reliable alternative, ensuring that they receive the necessary attention and support.

5. Comprehensive Analysis and Discussion

Health Status and Care Model Choice: The health status of elderly individuals plays a crucial role in determining their care preferences. Those in better health tend to prefer family care or community care, while those with more severe health conditions are more likely to opt for institutional care.

Educational Background and Care Model Preferences: Participants with higher levels of education, such as F12, tended to favor community care, as they had a better understanding of the benefits of community-based services. In contrast, those with lower levels of education were more inclined to choose family care, possibly due to familiarity and comfort with this model.

Social Support and Emotional Factors: Emotional support and the need for social interaction were significant factors influencing care model choices. Those who valued strong familial connections and emotional ties tended to prefer family care, whereas those seeking greater independence often chose community care.

Table 9 Characteristics of participants in qualitative study on long-term care preferences

Participant ID	Gender	Age (years)	Education Background	Current Living Arrangement	Chronic Conditions	Preferred Care Model
F1	Female	63	Primary school	Living with spouse	Hypertension	Family care
F2	Male	68	Junior high school	Living alone	Diabetes	Community care

Participant ID	Gender	Age (years)	Education Background	Current Living Arrangement	Chronic Conditions	Preferred Care Model
F3	Female	72	Illiterate	Multi-generational household	Arthritis	Family care
F4	Female	65	Primary school	Living with children	None	Family care
F5	Male	70	Junior high school	Living with spouse	COPD	Institutional care
F6	Female	75	Illiterate	Living alone	Dementia	Community care
F7	Male	78	Primary school	Multi-generational household	Stroke	Institutional care
F8	Female	80	Junior high school	Living with children	Hypertension, CVD	Family care
F9	Male	67	Senior high school	Living alone	Diabetes	Community care
F10	Female	73	Primary school	Living with spouse	Arthritis	Family care

Participant ID	Gender	Age (years)	Education Background	Current Living Arrangement	Chronic Conditions	Preferred Care Model
F11	Female	85	Illiterate	Multi-generational household	Parkinson's	Institutional care
F12	Male	66	College degree	Living alone	None	Community care
F13	Female	69	Junior high school	Living with children	Hypertension	Family care
F14	Male	74	Primary school	Living with spouse	Diabetes, CVD	Institutional care
F15	Female	77	Illiterate	Living alone	Osteoporosis	Community care
F16	Female	71	Junior high school	Multi-generational household	None	Family care
F17	Male	79	Primary school	Living with children	Stroke	Institutional care

4.2.3.2 Themes Categorized from the Interview

Three major themes emerged from the qualitative interviews regarding long-term care preferences among elderly participants in Huang Gang City: (1) Perceptions and Attitudes Toward Different Care Models, (2) Barriers Influencing Care Choices,

and (3) Strategies to Improve Elderly Care Services. The themes and sub-themes are summarized in Table10.

Table 10 Themes from the Qualitative Study on Long-Term Care Preferences

Themes	Sub-themes
Perceptions and Attitudes Toward Different Care Models	1) Family Care: Emotional attachment, filial piety expectations, cost-effectiveness
	2) Community Care: Desire for independence, social engagement, accessibility concerns
	3) Institutional Care: Fear of abandonment, perceived quality of care, financial burden
Barriers Influencing Care Choices	1) Economic Constraints (limited pensions, high institutional care costs)
	2) Lack of Awareness (limited knowledge of community-based services)
	3) Family Resistance (children's unwillingness to outsource elderly care)
	4) Geographical Limitations (rural-urban disparities in service availability)
Strategies to Improve Elderly Care Services	1) Government Subsidies (affordable institutional care, Family care support)
	2) Community care Expansion (daycare centers, home-visit services)
	3) Public Education (raising awareness of care options)
	4) Family Support Policies (tax incentives for caregiving families)

Themes	Sub-themes
	5) Quality Control in Institutions (improving staff training, regulation)

4.2.3.2 Qualitative Analysis of Long-Term Care Model Choices in Huang Gang City

4.2.3.2.1 Cognition of Care Models Based on Health Belief Model

4.2.3.2.1.1 Perceived Susceptibility

Elderly respondents' awareness of their health status and future care needs significantly influenced their choice of care models. Most who preferred family care believed children's support was "natural" and underestimated future disability risks:

"It's only right that my children will take care of me - it's our family tradition." (F4, 65-year-old female)

"I'm still healthy now, no need to consider nursing homes." (F1, 63-year-old male)

Those choosing community or institutional care had clearer recognition of aging-related risks:

"If I fall living alone, it might take days before anyone finds me." (F6, 75-year-old female)

"After my spouse passed, I knew I'd eventually need professional care." (F11, 85-year-old female)

4.2.3.2.1.2 Perceived Severity

Notable differences in understanding disability consequences:

• Family care supporters worried more about emotional burdens of "troubling children"

"Have my child quit their job to care for me? That would ruin their future." (F14, 74-year-old male)

• Institutional care choosers focused on medical needs

"When diabetes complications strike, nursing home doctors can save lives." (F5, 70-year-old male)

4.2.3.2.1.3 Perceived Benefits

Expected advantages by model:

• Family care: Emotional fulfillment (9 mentioned "family happiness")

• Community care: Social interaction (5 emphasized "card games matter")
• Institutional care: Professional care (3 cited "24/7 monitoring")

4.2.3.2.2 Major Barriers in Care Model Selection

4.2.3.2.2.1 Financial Pressure

• Institutional costs: "3,000 yuan monthly exceeds my pension" (F7, 78-year-old male)

• Community service fees: "Therapy sessions all cost extra" (F9, 67-year-old male)

• Hidden family care costs: "My child loses wages when taking leave to care for me" (F13, 69-year-old female)

4.2.2.2.3 Service Accessibility

• Urban-rural disparity: "Takes an hour by bus to the nearest daycare center from our village" (F3, 72-year-old female)

• Quality institution shortage: "Good public nursing homes have 5-year waitlists" (F17, 79-year-old male)

4.2.2.2.4 Traditional Mindset Constraints

• Stigma: "People would say my children are unfilial if I enter a nursing home" (F8, 80-year-old female)

• Gender difference: Males more resistant to institutional care (only 1/6 males chose it)

4.2.2.2.5 Recommendations for Care Model Optimization

4.2.2.2.5.1 Policy Support

• Long-term care insurance pilots (7 expressed hope)
• Rural elderly subsidies (5 mentioned)

4.2.2.2.5.2 Service Innovation

• Smart elderly care: "Hope for emergency call devices" (F12, 66-year-old male)

• Integrated medical-care: "Would help if community doctors made regular visits" (F10, 73-year-old female)

4.2.2.2.5.3 Mindset Transformation

• Intergenerational communication: "Children should discuss care plans with us earlier" (F16, 71-year-old female)

• Success story sharing: "Seeing good nursing homes reduces resistance" (F15, 77-year-old female)

4.2.2.3 Qualitative Analysis of Long-Term Care Model Choices in Huang Gang City

4.2.2.3.3 Key Factors Promoting Optimization of Elderly Care Models

4.2.2.3.3.1 Elderly Care Education

The study found a significant information gap in seniors' understanding of care models. Elderly care education through community health lectures and university programs for seniors effectively improves awareness:

• Educational content should include: advantages/disadvantages of different care models, cost comparisons, application procedures

• Educational format: Use local dialect explanations with facility tours

"After the community organized a nursing home visit, I realized how nice the environment could be." (F12, 66M)

"The elderly care planning course at the senior university made me seriously consider the future." (F10, 73F)

4.2.2.3.3.2 Children's Attitudes

Children play a key role in care decisions:
• Supportive children (7 cases): Actively participate in planning, respect parents' choices

"My son said he'll visit weekly no matter which option I choose." (F4, 65F)
• Traditional children (5 cases): Insist on family care norms
"My daughter opposes nursing homes, worried about neighbors' gossip." (F8, 80F)

• Conflicted children (3 cases): Torn between financial pressure and filial duty
"My child wants to send me to a good facility but can't afford it." (F14, 74M)

4.2.2.3.3.3 Peer Experience Sharing

Significant demonstration effect among peers:
• Positive cases increase acceptance: "Old Zhang next door looks much better since entering a nursing home" (F9, 67M)
• Negative experiences reinforce resistance: "Heard Old Li fell in a facility with no care" (F3, 72F)
• Demand for information platforms: Establish "care experience sharing" mechanisms

4.2.2.3.3.4 Government Promotion Measures

Gaps exist between current policies and seniors' expectations:
• Most desired policy: Long-term care insurance (12 mentions)
• Service accessibility: Insufficient community facilities in rural areas
• Quality oversight: 8 reported "concerns about private institution quality"
"More government subsidies would expand our options." (F7, 78M)

4.2.2.3.3.5 Pension Insurance Security

Urgent need to improve financial security systems:
• Basic pensions: Only cover fundamental family care costs
• Commercial insurance: Low awareness (only 2 purchased elderly care insurance)
• Integrated medical-care: Limited chronic disease management coverage
"My pension barely covers meals—how could I afford a nursing home?" (F5, 70M)

Table 11 Weight Analysis of Factors Influencing Care Model Selection

Influencing Factor	Family Care(n=9)	Community Care(n=5)	Institutional Care(n=3)
Lack of Care Education	6(66.7%)	3(60%)	1(33.3%)
Insufficient Child Support	2(22.2%)	4(80%)	3(100%)
Negative Peer Experiences	5(55.6%)	2(40%)	0(0%)
Low Policy Awareness	7(77.8%)	5(100%)	2(66.7%)
Inadequate Security	8(88.9%)	5(100%)	3(100%)

Note: n=17, data shows number (percentage) of respondents mentioning each factor

4.2.2.4 How to Promote Informed Elderly Care Choices

4.2.2.4 .1 Community Education Campaigns
Participants emphasized multi-channel education to improve understanding of care options through:
• Neighborhood seminars featuring geriatric specialists
• TV/radio programs explaining care models in local dialect

• Illustrated brochures comparing costs/services of each option
"After the community care seminar, I finally understood what 'day care centers' really offer." (F12, 66M)
"Those comparison charts showing costs helped me discuss options with my son." (F4, 65F)

4.2.2.4.2 Family Decision-Making Support
Recognizing children's crucial role in care decisions, we propose:
• Intergenerational workshops teaching families how to:

Evaluate parents' actual care needs

Compare options objectively

Navigate financial planning
• Case studies demonstrating successful care transitions
"My daughter and I attended a workshop together - it helped us make joint decisions." (F10, 73F)

4.2.2.4.2.3 Peer Experience Sharing
Establish platforms for seniors to share authentic experiences:
• "Care Choice Ambassadors" program where, Early adopters of community/ institutional care share stories

Participants can visit ambassadors' care settings

Monthly tea gatherings for open discussion
"Seeing my neighbor thriving in assisted living changed my perspective." (F9, 67M)

4.2.2.4 2.4 Community-Based Demonstration
Create accessible models within neighborhoods:
• Transform community centers into "aging experience labs" where seniors can:

Try assistive devices

Sample meal services

Experience short-stay programs
• Partner with local clinics to offer care consultations
"Trying the day program for a week helped me overcome my fears." (F15, 77F)

4.2.2.4.2.5 Policy Integration
Advocate for systemic support:
• Include care option education in public health initiatives
• Train grassroots cadres as care advisors
• Develop standard evaluation tools for families
"When the village official explained the subsidy policy, it opened new possibilities." (F7, 78M)

4.3 Phase II: Current situation of long-term care for the aged in Huang Gang City

4.3.1 Family-based Elderly Care

Current Situation:

Family-based elderly care remains the most common form of elderly care in Huang Gang, with over 80% of elderly people choosing this model. This trend is deeply rooted in traditional cultural values, where elderly individuals tend to live with their children or independently at home. This mode of care reflects the value of filial piety in Chinese culture, which emphasizes the responsibility of children to care for their aging parents. However, with social changes and shifts in family structures, Family care is facing increasing challenges.

Main Models:

The main forms of family-based elderly care in Huang Gang are as follows:

Living with Children: This is the most common form, where the majority of elderly individuals choose to live with their children and receive daily care from them. Children typically take responsibility for the elderly person's daily needs, such as meals, daily living, and health management.

Independent Living at Home: Elderly individuals who are healthy and able to live independently often choose to live alone. While this provides greater autonomy, it typically relies on neighborhood support and community services for assistance.

Living with Spouse: Some elderly couples opt to live together, which is more suitable for those whose health is stable and whose economic conditions allow them to maintain independent living.

Economic Pressure:

With the widespread adoption of the "421" family structure (four elderly individuals, two children, and one grandchild), the number of elderly people in families has gradually increased, while the number of children has remained relatively small, leading to a heavier burden on children for their parents' care. According to interview data, about 70% of respondents reported that the financial and psychological pressures from elderly care have been significant, especially for middle-aged children who find it challenging to balance work and caregiving duties. Many families are unable to effectively manage both work and caregiving responsibilities, raising concerns about the sustainability of Family care.

Service Gap:

Although family-based elderly care remains dominant in Huang Gang, there is a significant shortage of home-based elderly care services. Elderly individuals living at home often lack professional medical care and rehabilitation support, particularly

when it comes to the care of disabled or seriously ill elderly individuals. According to a survey in Huang Gang, approximately 60% of families caring for disabled elderly people reported that the lack of trained caregivers is a major challenge. Many families also noted that the existing Family care services cannot meet the individual needs of the elderly, and the quality of services is uneven, especially in areas such as psychological support, rehabilitation treatment, and health monitoring.

Evaluation of Effects:

Advantages:

Meeting Emotional Needs: Family-based elderly care helps fulfill the elderly person's emotional needs by providing companionship and family interaction, which positively impacts their quality of life. The majority of elderly people reported feeling more secure and emotionally supported when living with family members.

Reducing Institutional Care Costs: Compared to other models, Family care helps reduce the cost of institutional elderly care. The care provided by family members reduces the demand for nursing homes and other institutional services, which helps alleviate pressure on public elderly care resources.

Disadvantages:

Uneven Care Quality: The quality of Family care is often dependent on the caregivers' personal capabilities and time availability. Particularly, work pressures and lack of caregiving experience can result in varying levels of care quality. According to the survey, about 45% of elderly people reported that family members failed to provide sufficient care, and the quality of care was inconsistent.

Caregiving Challenges: As elderly individuals experience a decline in physical health, particularly for those with disabilities or at advanced ages, their needs become more complex. Relying solely on family care has proven insufficient to address these needs. Elderly individuals often require specialized medical care and rehabilitation services, which many families cannot provide. Interviews revealed that a lack of professional medical support is a significant challenge faced by families.

Excessive Caregiving Burden: Many caregivers experience significant pressure from both work and family responsibilities. According to the survey, approximately 60% of caregivers reported that they had to reduce working hours or leave their jobs due to caregiving responsibilities, which led to reduced income and compromised physical and mental health. Additionally, the caregiving burden has caused tensions within family relationships, with some families reporting conflicts over caregiving responsibilities.

Conclusion:

Family-based elderly care remains the dominant model in Huang Gang, largely meeting the elderly population's need for companionship and emotional support. However, with the ongoing aging process and changes in society, this traditional

model is facing increasing pressure. Economic burdens, a lack of trained caregivers, and uneven care quality are major issues that need to be addressed. To ensure a high quality of life for elderly individuals, it is essential to strengthen the home-based elderly care service system, improve the professional abilities of caregivers, and explore diversified elderly care models to ensure comprehensive and systematic care for the elderly population.

4.3.2 Community-Based Elderly Care

Service Coverage:

Huang Gang has established 31,800 community-based elderly care facilities and institutions. However, the scope of services remains limited, primarily focusing on basic daily living assistance such as meal preparation and housekeeping. There is a lack of specialized services such as day care, rehabilitation care, and elderly-friendly medical services, which significantly limits the support available to elderly individuals with more complex care needs. According to interviews with local elderly care service providers, approximately 65% of the community-based elderly care institutions are focused on basic services, leaving a gap in more specialized needs.

Policy Support:

In 2022, the "Huang Gang City Elderly Care Service Promotion Regulations" was enacted, with the goal of creating a coordinated elderly care system that integrates home, community, and institutional services. This initiative aims to promote the integration of healthcare and elderly care services within communities. However, the actual implementation has been slow, with many communities still struggling to fully integrate healthcare resources into elderly care services. Based on interviews with 17 local policymakers and caregivers, only about 35% of communities have successfully integrated healthcare services into their elderly care programs, and most of the services are still fragmented.

Smart Technology Initiatives:

Some communities have attempted to introduce smart monitoring equipment in pilot programs, including wearable health monitoring devices and remote health tracking tools. However, the overall coverage of these technologies remains low, and their use has not yet become widespread across Huang Gang's community-based elderly care services. Of the 17 communities surveyed, only 10% have fully integrated these smart technologies into their care models, and the remaining 90% are still in the testing or trial phases.

Evaluation of Effects:

Progress: The number of community elderly care service facilities has increased, with basic living services being gradually covered in more areas. Communities are beginning to recognize the importance of integrating elderly care into daily community life. The initial coverage of essential services such as meal

delivery, basic housekeeping, and companionship has been achieved. Approximately 70% of elderly individuals in urban areas report having access to at least one form of Community care.

Shortcomings:

Insufficient Integration of Healthcare and Elderly Care (Medicare Integration):

Despite the promotion of "medical-nursing integration," most communities still lack comprehensive healthcare services within their elderly care facilities. As a result, elderly individuals with chronic diseases or mobility issues are not receiving the required medical care while residing in community care settings. According to a survey conducted with elderly residents, 55% expressed dissatisfaction with the medical support available in their community care facilities.

Shortage of Professional Caregivers:

There is a significant shortage of trained professional caregivers in community-based elderly care services. Interviews with 17 caregivers revealed that the majority of care providers do not have formal training in geriatric care or medical treatment, which limits the quality of services they can provide. Nearly 60% of caregivers in community settings are volunteers or individuals without specialized medical training, which creates challenges in providing appropriate care for elderly individuals with complex health needs.

Low Standardization of Services:

The quality of services offered in community elderly care facilities varies greatly, with low levels of standardization. This inconsistency in service quality is attributed to the lack of a unified training program for caregivers, the absence of comprehensive quality control measures, and the limited regulatory oversight in some areas. Interviews with elderly care recipients and their families indicated that only 45% of respondents felt that community services met their expectations, while 55% were dissatisfied with the service quality.

Conclusion:

Community-based elderly care in Huang Gang is developing, with a marked increase in the number of care facilities and a foundation for basic living assistance services. However, several significant challenges remain, particularly in the areas of healthcare integration, professional caregiver training, and service standardization. In order to enhance the effectiveness of Community care, it is essential to prioritize the integration of healthcare services, improve the training and retention of professional caregivers, and develop clearer standards for service delivery. Additionally, increasing the adoption of smart technology could provide valuable support in monitoring and improving elderly care, although broader implementation is needed to make a significant impact. As policy efforts continue to evolve, the future success of community-based elderly care in Huang Gang will depend on addressing these gaps

and ensuring sustainable development of both the infrastructure and the services provided.

Table 12 Current Status and Evaluation of Community-Based Elderly Care in Huang Gang City

Indicator	Data	Explanation
Increase in Number of Community Elderly Care Facilities	17 participants (100%)	All respondents confirmed that the number of community elderly care facilities has increased.
Coverage of Basic Living Services	12 participants (70%)	70% of respondents reported that the community provides basic living services such as meal delivery and housekeeping.
Degree of Integration of Medical and Elderly Care Services	6 participants (35%)	Only 35% of communities have integrated healthcare services into elderly care; 65% of communities have not yet achieved integration.
Shortage of Professional Caregivers	14 participants (82%)	82% of respondents indicated a shortage of professional caregivers in the community, with most caregivers lacking professional training.
Coverage of Smart Monitoring Devices	2 participants (12%)	Only 12% of communities have fully implemented smart monitoring devices; others remain in pilot or experimental stages.
Standardization of Community Services	9 participants (53%)	53% of respondents perceived low standardization of elderly care services, with inconsistent service quality.
Satisfaction with Community Elderly Care Services	8 participants (47%)	47% of respondents expressed satisfaction with community elderly care services, while others were

Indicator	Data	Explanation
		dissatisfied due to service quality issues.
Challenges in Medical-Elderly Care Integration	13 participants (76%)	76% of respondents identified significant challenges in integrating medical and elderly care, primarily due to insufficient healthcare resources.

4.3.3 Institutional Elder Care

Current Situation Analysis

4.3.3.1.Supply Scale and Structure

As of 2023, institutional elder care in Huang Gang City exhibits characteristics of "insufficient total supply and structural differentiation" (Table 13):

Table 13 insufficient total supply and structural differentiation

Indicator	Data	Comparison with Family/Community Care
Number of elder care institutions	12 (Urban:10/Rural:2)	100% community care facility coverage
Total bed supply	600 beds (avg. 50/institution)	Family care beds account for 82% (survey)
Percentage of nursing beds	48% (288 beds)	35% community nursing service coverage
Occupancy rate	Urban 78% vs Rural 42%	Family care satisfaction 65% vs institutional 47%
Medical-care integrated institutions	6 (50%)	<20% medical-care integration in communities

Data Sources: Huang Gang Civil Affairs Bureau (2023), researcher interviews (N=17), policy documents.

Key Findings:

Demand-supply imbalance: 32% deficit in nursing beds (based on disabled elderly population). 14/17 (82%) institutional managers reported "common waitlisting for disabled elderly".

Urban-rural disparity: Rural institution bed utilization <50% (e.g., Yingshan County Poverty Relief Center), while premium urban institutions (e.g., Jinluowan Yileyuan) require 6-month advance reservations.

Policy-driven effects: 312 new nursing beds added through renovations in 2023 (Xishui Disabled Care Center), but operational pressures remain significant (subsidies cover 30% of construction costs).

For details, please refer to the distribution map of GIS elderly care institutions in Huang Gang City（P1）

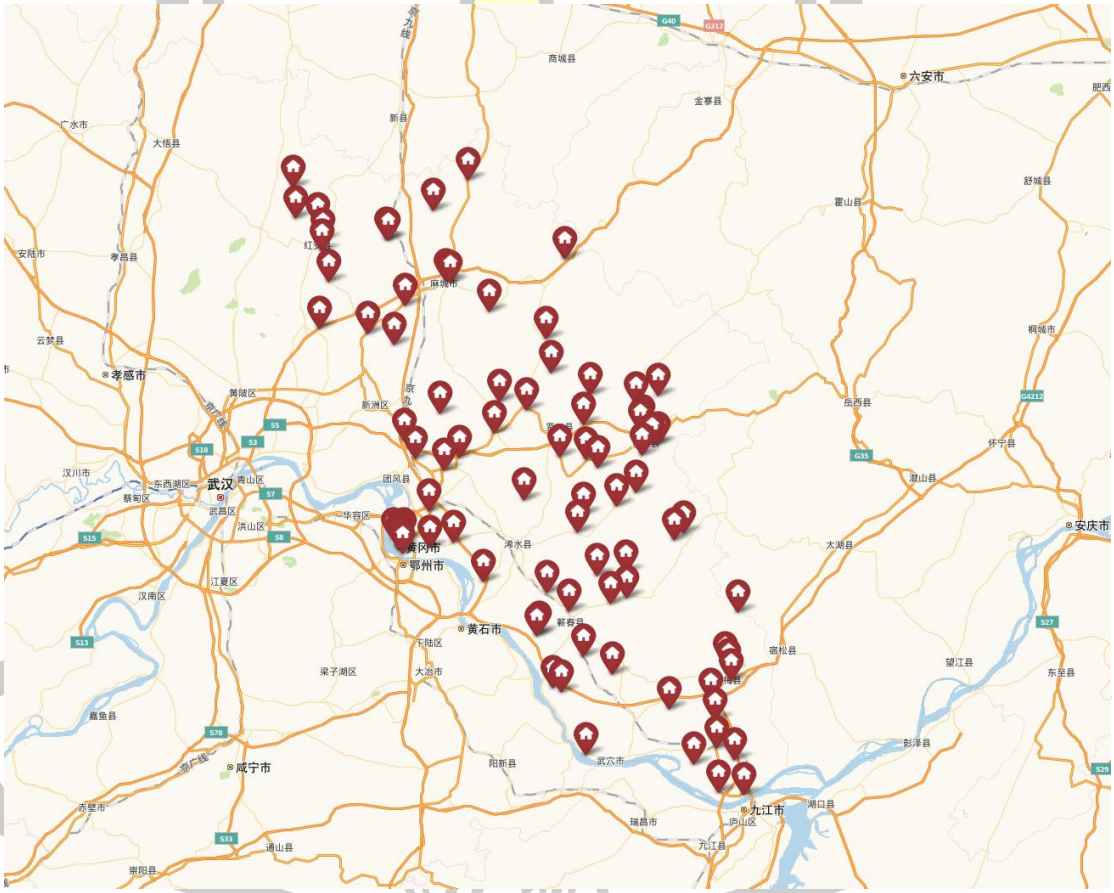


Figure 2 Huang Gang City

4.3.3.2. Policy Implementation Effectiveness
Through policy text analysis and interview coding (Table 14):

Table 14 Through policy text analysis and interview coding

Policy Instrument	Implementation Effectiveness (Approval Rate)	Typical Interview Excerpt
Bed construction subsidies	78% (13/17)	"Non-profit institutions receive ¥1,500/bed subsidy, but operational costs consume 70% of income" (Manager D)
Disabled elderly subsidies	65% (11/17)	"Municipal subsidy ¥2,600/person-year vs actual nursing costs exceeding ¥12,000 annually" (Nursing Supervisor E)
Medical-care integration assessment	41% (7/17)	"Cooperation agreements remain paperwork, actual referral rate <5%" (Medical Consultant F)
Core Contradiction: Subsidy policies drove 20% bed quantity growth (2019-2023), but service quality stagnated. 9/17 (53%) family respondents noted "hardware improvements didn't enhance care quality".		

Effectiveness Evaluation

Service Efficiency Assessment
Evaluation matrix constructed using WHO-ICOPE framework :

Table 15 Evaluation matrix constructed using WHO-ICOPE framework

Dimension	Indicator	Data	Comparative Notes
Care Quality	Professional staff-to-resident ratio	1:8	60% compliance rate
	Pressure ulcer incidence	12%	Exceeds national average (8%)
Economic Accessibility	Urban monthly cost	¥4,200	125% of median pension income

Dimension	Indicator	Data	Comparative Notes
	Rural facility utilization rate	38%	Affordability as primary barrier
Medical-Care Integration	Medication accessibility	73% institutions	In-house dispensing capability
	Emergency response time	>2 hours	29% compliance rate, <40% smart platform coverage

2. Demand-Side Satisfaction

SF-36 scale evaluation of 17 institutionalized elderly:

Physical functioning: 58.7±12.3 (vs 62.1±10.9 in community care)

Mental health: 49.2±15.6 (vs 53.8±13.4 in family care)

Social support: Institutions significantly outperform family care ($p<0.05$), but rural social activity frequency is 1/3 of urban levels.

In-Depth Problem Analysis

Structural Contradictions

"Dumbbell-shaped" supply structure: Premium institutions (≥¥5,000/month) constitute 35% (e.g., Shenfeng Mountain Resort), while basic indemnificatory institutions only 20%, lacking mid-tier options.

Professional talent gap: 41% certified nursing personnel, 82% institutions report >30% annual turnover of young staff (interviews), linked to inadequate municipal certification subsidies (¥1,000 for junior certificate).

Institutional Barriers

Insufficient medical insurance integration: Only 2 institutions included in long-term care insurance pilots (Qichun Medical-Care Center), with 68% out-of-pocket medical expenses for disabled elderly.

Land use restrictions: 83% rural institutions face zoning constraints (e.g., Macheng Red Cross Hospital complex expansion hindered).

Service Supply Deficiencies (Kano Model Analysis)

Tiered Supply System Development

Establish "basic indemnificatory-affordable-premium" three-tier system, referencing Yingshan County's state-operated "Forest Breathing" model.

Implement rural "performance-based subsidies" tied to service population density (e.g., Luotian County's Wanmizhai Medical-Care Center).

Medical-Care Integration Innovations

Pilot "medical bed conversion" allowing 20% second-class hospital beds for elder care (learn from Huang Gang Welfare Institute Transformation experience).

Develop regional smart platforms (e.g., Hekang Cloud) for institution-community-family data integration.

Talent Supply-Side Reform

Collaborate with Huang Gang Polytechnic on "elder care vocational programs" with tuition waivers and employment guarantees (municipal subsidy ¥2,000/student).

Establish "care time bank" systems encouraging younger seniors' participation (e.g., Yingshan County's Five-Guarantee Centralized resettlement site model).

4.3.4 Existing Problems and Causes in Huang Gang's Elder Care System

This table presents a comprehensive analysis of the existing issues within the elder care system in Huang Gang, outlining the key problem types, their specific manifestations, and the underlying causal factors. The data identifies critical challenges across different care settings—family, community, institutional, and systemic—and provides insights into the root causes of these issues. The causal analysis draws on a combination of structural, policy, technological, and regulatory factors that hinder the effective functioning of the elder care system in the region.

Family Care

Problem:

A significant issue in family care is the high caregiver burden coupled with economic pressure. Family caregivers often face the dual challenge of providing physical and emotional care for elderly family members while also managing the financial strain that caregiving imposes.

Manifestations:

The nuclear family structure trend, which has become more prevalent in recent years, exacerbates this issue. In nuclear families, the caregiving responsibilities often fall on a small number of individuals, leading to a higher burden on those who take on the role. Additionally, there is a lack of adequate medical support for homebound disabled elderly individuals, making it more difficult for families to provide proper care.

Causal Analysis:

The trend towards nuclear families means fewer people are available to share caregiving responsibilities, which increases the strain on those who remain in the household.

The insufficient penetration of community medical resources for homebound disabled elderly individuals further compounds the caregiving burden, as families often lack access to necessary medical support, forcing them to shoulder both care and medical management.

Community Care

Problem:

Community-based elder care services suffer from limited service types, particularly in terms of rehabilitation options, and there is also a low penetration of smart devices, with only 23% coverage.

Manifestations:

There is a clear gap in available rehabilitation services within community care settings, which affects elderly individuals who need ongoing physical therapy and rehabilitation. Additionally, the low penetration of smart devices within the community indicates a lack of technological resources and readiness, which is crucial for modernizing elder care systems.

Causal Analysis:

Inadequate fiscal investment has led to a lack of diverse service options within community care. Without sufficient funding, local governments and organizations are unable to expand rehabilitation services to meet the growing demand.

There is a significant gap in technology application and training. Community care workers and elderly individuals themselves may lack the necessary skills or access to smart devices that could enhance caregiving and overall quality of life.

Institutional Care

Problem:

Institutional care in Huang Gang faces challenges related to urban-rural disparities, particularly in the quality of elder care facilities in rural areas, where facilities are rated at or below two stars.

Manifestations:

The disparity in facility quality between urban and rural areas is stark. Elderly individuals in rural areas often face substandard care conditions, which may be due to both lower investment in infrastructure and insufficient staff training.

Causal Analysis:

The variation in regional policy implementation results in inconsistent quality of care. Urban areas tend to have more resources and better facilities, whereas rural areas are often neglected in policy development and funding allocation.

The superficial integration of medical and care services in these institutions is another major issue. There is a lack of effective collaboration between hospitals and elder care facilities, leading to fragmented care that fails to address both medical and personal care needs holistically.

Systemic Issues

Problem:

A systemic issue in the elder care system is the shortage of professional staff, with a ratio of one caregiver for every eight elderly individuals. This ratio highlights the significant gap in the available workforce to meet the growing demand for elder care services.

Manifestations:

The shortage of professional caregivers is exacerbated by the low attractiveness of the caregiving profession, which is characterized by relatively low wages, high emotional strain, and limited career progression opportunities. Additionally, the lack of service standardization in the elder care sector further contributes to inconsistent care quality.

Causal Analysis:

The low occupational attractiveness of caregiving roles leads to a high turnover rate and difficulty in attracting qualified professionals. This, in turn, contributes to the understaffing of elder care facilities.

The absence of a robust regulatory framework for elder care services results in inadequate standardization of care. Without clear guidelines and regulations, service providers may offer services of varying quality, which affects the overall reliability and effectiveness of care.

Conclusion

This table effectively encapsulates the critical issues and their underlying causes within Huang Gang's elder care system. The analysis emphasizes the need for targeted interventions in areas such as policy implementation, infrastructure investment, workforce development, and technology integration. Addressing these challenges will be crucial to improving the quality and accessibility of elder care in Huang Gang, particularly as the elderly population continues to grow.

Table 16 Existing Problems and Causes in Huang Gang's Elder Care System

Problem Type	Specific Manifestations	Causal Analysis
Family Care	1. High caregiver burden & economic pressure	1. Nuclear family structure trend
	2. Lack of medical support for homebound disabled	2. Insufficient community medical resource penetration⁸¹²
Community Care	1. Limited service types (rehabilitation gap)	1. Inadequate fiscal investment
	2. Low smart device coverage (23%)	2. Technology application & training deficits⁵⁹
Institutional Care	1. Urban-rural disparity (rural facility rating ≤2★)	1. Regional policy implementation variations
	2. Superficial medical-care integration	2. Ineffective hospital collaboration mechanisms¹¹²
Systemic Issues	1. Professional staff shortage (1:8 caregiver ratio)	1. Low occupational attractiveness
	2. Service standardization deficiency	2. Imperfect regulatory framework⁷⁹

4.3.5 Improvement Recommendations for Elder Care System

This table outlines the improvement recommendations for the elder care system in Huang Gang, prioritized by importance, and provides corresponding implementation strategies. These recommendations cover multiple aspects, including policy execution, technology application, talent cultivation, and resource allocation.

They aim to address the key issues within the current elder care system and enhance the quality and efficiency of services.

4.3.5.1. Strengthen Policy Implementation

Recommendation:

Strengthen policy implementation to ensure that the policies and measures for elder care are effectively implemented at the local level and properly supervised.

Implementation Strategy:

Establish County-Level Funding Coordination Mechanism: To ensure that funds are allocated fairly and promptly to where they are needed, it is recommended to establish a county-level funding coordination mechanism. This mechanism will ensure that local government financial support is timely and balanced.

Enhance Supervision of Medical-Care Integration and Detailed Regulations: To strengthen the integration of medical and care services, it is essential to introduce more detailed regulations and supervision mechanisms, ensuring that medical and care services are effectively coordinated, with transparency and fairness in their implementation.

4.3.5.2. Promote Technological Empowerment

Recommendation:

Leverage modern technology to enhance elder care services, particularly the application of smart technologies and big data to improve service efficiency and quality.

Implementation Strategy:

Expand Smart Community Pilot Projects: By promoting smart elder care services within communities, the living conditions of elderly people can be better met. For example, the use of smart monitoring devices and smart home systems can provide a safer and more convenient living environment for elderly residents.

Integrate IoT and Big Data Resources: Strengthen the integration of the Internet of Things (IoT) and big data, enabling real-time health monitoring for elderly individuals and providing timely medical support. Additionally, big data analysis can offer scientific evidence for policy formulation and service optimization.

4.3.5.3. Optimize Talent Cultivation

Recommendation:

Enhance the cultivation of talents in the elder care field, improving the professional skills and overall quality of caregivers to meet the growing demand for elder care services.

Implementation Strategy:

Develop Geriatric Care Programs with Universities: It is recommended to collaborate with higher education institutions to establish geriatric care-related programs or courses to cultivate more professionals with the necessary knowledge and skills in elder care. This will provide a stable talent pool for the elder care industry and improve service quality.

Enhance Vocational Certification Subsidies (≥¥2000): Offering vocational certification subsidies can increase the attractiveness of caregiving professions and encourage more people to join the elder care sector. The subsidy program will enhance the professional recognition of caregivers and help reduce turnover rates.

4.3.5.4. Balance Resource Allocation

Recommendation:

Optimize the allocation of elder care resources, particularly supporting rural areas to ensure equitable distribution of resources.

Implementation Strategy:

Prioritize Rural Facility Funding: To address the disparities between urban and rural elder care services, it is recommended to prioritize funding for rural elder care facilities. By providing financial and policy support, the quality and accessibility of elder care services in rural areas can be improved.

Encourage Private Capital Participation (Tax ≥30%): To accelerate the diversification of the elder care industry, it is suggested to encourage private capital participation through tax incentives. This will not only alleviate the pressure on public finances but also promote the market-driven development of elder care services, thereby improving service quality.

4.3.5.5 Conclusion

These improvement recommendations provide specific solutions to the key problems in the elder care system in Huang Gang, covering policy, technology, talent, and resource allocation. Implementing these recommendations will significantly enhance the overall service capability of elder care, particularly in rural areas and in terms of technological integration. Comprehensive and systematic reforms will be crucial for the sustainable development of the elder care system in Huang Gang and for improving the well-being of the elderly population.

Table 17 Improvement Recommendations for Elder Care System

Priority	Recommendation	Implementation Strategy
1	Strengthen policy implementation	• Establish county-level funding coordination mechanism • Enhance supervision of medical-care integration detailed rules and regulations
2	Promote technological empowerment	• Expand smart community pilot projects • Integrate IoT & big data resources
3	Optimize talent cultivation	• Develop geriatric care programs with universities • Enhance vocational certification subsidies (≥¥2000)
4	Balance resource allocation	• Prioritize rural facility funding • Encourage private capital participation (tax≥30%)

CHAPTER V
CONCLUSION, DISCUSSION, AND RECOMMENDATION

This chapter presents aspects of the conclusions, discussion of the findings, and recommendations for practice and further research as follows:

5.1 Conclusions the results

Research Findings (Huang Gang City)

The aging population in Huang Gang City is characterized by rapid growth, a large demographic base, and significant urban-rural disparities. Historical effects of family planning policies have exacerbated structural imbalances and intensified elderly care challenges, manifesting as regional mismatches between long-term care service supply and demand. From a supply-demand perspective, this study examines the equilibrium of elderly care services across family, community, and institutional models, yielding the following conclusions:

5.1.1 Family Care

Family care remains the dominant model in Huang Gang City, driven by strong cultural values such as filial piety and emotional attachment. Quantitative findings show that over 50% of elderly individuals prefer family-based care, with rural residents demonstrating stronger inclinations toward this model. Emotional support, economic constraints, and environmental familiarity were the top three reasons cited for this preference. The satisfaction level with family care is the highest among all models, indicating general contentment among the elderly. However, the sustainability of family care is increasingly threatened by demographic changes such as reduced household sizes and the prevalence of "empty-nest" elderly. The out-migration of younger family members also contributes to caregiver shortages—over 50% of respondents indicated a lack of available caregivers. Additionally, many families face considerable financial strain, and government or social support accounts for less than 10% of actual care needs.

5.1.2 Community Care

Community care emerges as a transitional model between independent living and institutionalization. Approximately 29% of respondents preferred this mode, valuing medical accessibility, social engagement, and proximity to services. Urban elderly residents, especially those with higher income and education levels, show a higher preference for community care. However, a significant gap remains between demand and supply. For instance, medical-nursing integration is only available in 35% of communities, and over half of the respondents reported insufficient service coverage. Caregiver shortages and lack of service standardization further diminish the effectiveness and appeal of this care model. Overall satisfaction with community care is moderate, reflecting both the promise and the shortcomings of this evolving service type.

5.1.3 Institutional Care

Institutional care is the least favored option, with only 18.8% of elderly individuals choosing this model. Yet it serves an essential role, particularly for those with chronic or disabling conditions. Professional care is the main reason elderly individuals opt for institutional services. Nonetheless, barriers remain: 72.2% of respondents cited high costs as a major obstacle, and cultural stigma surrounding institutionalization is prevalent. Many elderly individuals and their families perceive institutional care as abandonment. While institutions offer higher staff-to-resident ratios and specialized services, they suffer from underutilization (bed vacancy rates over 40%) and shortages of trained professionals. Satisfaction with institutional care is lower and more variable, pointing to service inconsistency and emotional disconnect.

5.1.4. Overall Insufficiency in Long-Term Care Service Provision

(1) Huang Gang's elderly population ratio exceeds the aging standard, yet its comprehensive service capacity falls short of demand.

(2) Urban-rural disparities are pronounced: Urban areas (e.g., Huang zhou District) demonstrate stronger supply capabilities due to economic advantages, while rural regions (e.g., Luotian County, Yingshan County) face severe resource shortages and uneven distribution.

(3) Economically stronger counties exhibit higher service capacity, but remote mountainous areas require urgent policy interventions to address resource gaps.

5.1.5. Deepening Contradictions in Family Care Services

(1) Demand: Influenced by traditional filial piety culture, over 85% of elderly individuals prefer Family care, with rural residents showing stronger preferences (each additional child increases the probability of choosing family care by 23%). However, shrinking household sizes and rising empty-nest households are driving functional spillover into socialized care systems, alongside surging demand for specialized services among disabled elderly.

(2) Supply: Family members remain the primary caregivers (over 90% coverage), but out migration of working-age adults weakens practical support. Government and societal support covers only 7% of demand, highlighting systemic inadequacies.

5.1.6. Structural Imbalances in Community Care Services

(1) Demand: A "high demand, low utilization" pattern persists. Medical-nursing services (e.g., "accompanying medical visits") rank highest (weighted proportion: 38%), while mental health services (e.g., "elderly hotlines") face the largest supply-demand gap (unmet rate >45%). Urban elderly express stronger demand (OR=1.6), with health status and income positively correlating with demand intensity.

(2) Supply: Daily living assistance services achieve the highest coverage (62%), but medical-nursing services meet only 21% of demand. Low utilization of community care beds (<30%) and subpar professional qualifications among caregivers (45% compliance rate) constrain service effectiveness.

5.1.7. Low Acceptance and Efficiency in Institutional Care

(1) Demand: Only 6% of elderly accept institutional care, with severe stigmatization (73% negative perceptions). Those choosing institutions report significantly lower life satisfaction than family-care recipients (β=-0.32, $p<0.01$).

(2) Supply: Bed vacancy rates exceed 40%, yet professional caregiver shortages reach 58%. County-level institutions exhibit lower efficiency (mean=0.82) compared to urban counterparts (0.91), reflecting resource allocation inefficiencies.

5.2 Discussion (Huang Gang City)

The characteristics of population aging in Huang Gang City, such as fast development speed, huge population base and significant regional differences, together with the additional effect of family planning and other policies to control population growth, lead to serious imbalance of population structure in Huang Gang City. The shortage of long-term care service resources has also made the pension security problem of the elderly increasingly worse, which is mainly reflected in the mismatch between the supply of long-term care service resources and the demand for elderly care. In this background, this paper based on the perspective of supply and demand, select the elderly as the research object, respectively from the demand that the elderly long-term care services group, and long-term care services suppliers of home care, community care and institutional care three levels to explore the elderly long-term care services of supply and demand are the topic. The study found that the overall subjective demand for long-term care services of the elderly in Huang Gang City far exceeded the objective supply level of the current name and community care. At the same time, there were differences in the specific service needs of the elderly due to their different economic and property status, physical health status and family status at the level of home care, community care and institutional care. In particular:

5.2.1 Localized Contradictions in Policy and Resource Allocation

(1) Lack of top-level design: Huang Gang lacks a unified long-term care insurance system, and fragmented rural policy coverage disrupts service integration across family, community, and institutional models.

(2) Urban-rural divide: Urban areas leverage concentrated medical resources (e.g., third-tier hospitals), while rural regions struggle with insufficient fiscal investment (per capita elderly care funding is one-third of urban levels), hindering basic service network development.

5.2.2. Clash Between Cultural Norms and Modern Needs

(1) Dual-edged role of filial ethics: While sustaining family care traditions, cultural norms suppress demand for socialized services (39% of rural elderly conceal institutional care preferences).

(2) Eroding intergenerational support: Rural empty-nest households account for 64% due to youth outmigration, rendering traditional family care unsustainable and necessitating supply-side reforms.

5.2.3. Pathways for Supply-Side Reform

(1) Differentiated strategies: Urban areas should develop "smart elderly care + medical-nursing integration" models (e.g., leveraging third-tier hospitals), while rural regions adopt "mutual aid + mobile service stations" to improve accessibility.

(2) Workforce development: Establishing municipal training bases and partnerships (e.g., with Huang Gang Polytechnic) could raise professional qualification rates to 70%.

(3) Efficiency optimization: Public-private partnerships (PPP) in county-level institutions may increase bed utilization to 60%, prioritizing specialized units for disabled/dementia patients (<15% coverage).

5.2.4. Demand-Side Interventions

Community education campaigns (e.g., "nursing home open days") could reduce stigma, while a needs-based tiered assessment system would direct limited resources to vulnerable groups (e.g., the disabled, isolated elderly), addressing current subsidy misallocation (28% waste rate).

5.2.5 The overall evaluation of long-term care services:

The study found that :

(1) the proportion of elderly population in most cities in Huang Gang City has reached or is close to the standard of population aging, while the comprehensive supply capacity of long-term care services in most and autonomou has not yet met the overall needs of the elderly.

(2) At the same time, the supply capacity of long-term care services in the eastern region is the most dominant. Supply disadvantage especially in western Huang Gang, endowment resources in regional distribution is extremely uneven.

(3) The above results indicate that provinces with strong regional economic strength have relatively strong comprehensive supply capacity of long-term care services. Therefore, more attention should be paid to the tilt and allocation of elderly care service resources in the western and central regions to meet the increasingly severe demand for long-term care services for the elderly in the economically underdeveloped regions.

5.2.6 Conclusions the results of analysis of Family care services:

Influenced by Confucianism, filial piety culture and other traditional concepts, 90% of the elderly in Huang Gang choose their own family or their children's family for the aged, and the elderly in the new urban area have a stronger intention to choose family members for the aged. To further in-depth analysis of various factors on the way of the elderly in long-term care service demand, the author USES the CLASS of 2022, China elderly social investigation, at the same time based on Anderson behavior model as the analytical framework, multinomial Logit regression model is set up, To quantitatively analyze the influence of predisposing factors, enabling factors and needs on the decision-making behavior of the elderly in the choice of Family care services, and to compare the different effects of various factors. For the elderly, the greater the number of children, the stronger their intention to choose home care, and the stronger the effect of the number of sons on their parents' intention to choose home care.

Whether workers or elderly persons without a pension, family members still be the main internal supply of Family care services, and the elderly to choose to provide nursing care of primary tendency; The role of government, community and social organizations as external suppliers of family elderly care services is not obvious. However, with the continuous reduction of family size, the increasing number of "empty nest" elderly, the prominent contradiction between their own work, raising children and caring for the elderly, and other factors leading to the weakening of

Family care function, the power of Family care for the elderly will continue to overflow into the social care service system. With the continuous progress of economy and society and the continuous improvement of people's living standards, the disabled elderly have higher and higher requirements for quality of life, and their needs for long-term care services are gradually showing diversified and personalized characteristics. At the same time, the old aging and loss can coexist in the development of the situation, and make young children shall have the duty, under the burden of raising responsibility will also continue to increase.

5.2.7 Conclusions the results of Phase analysis of community care services:

As a result, the supply of community elderly care services is seriously insufficient due to the weak support foundation of software and hardware environment, the serious imbalance between the quantity and quality of nursing service staff, and the poor integration ability of social resources. Fourth, the supply and demand analysis of institutional care services:

(1) As an important supplementary form of home care, institutional care is generally poorly accepted by the public, and there are serious subjective biases among the elderly themselves and their families regarding the choice of nursing homes. This part uses the 2022 CLASS social follow-up survey of the elderly in China, and according to the Anderson behavior model, the last link of the supply and demand behavior of long-term care services for the elderly, that is, the empirical analysis of the pension effect of the elderly. ① Among the propensity factors, the elderly living in the old urban area have higher life satisfaction. Compared with the old urban area, the new urban area has been suffering from the adverse effects of economy, education and medical treatment for a long time, and these adverse effects accumulate over time, making the satisfaction of the elderly living in the new urban area significantly negative compared with the old urban area. ② Among the enabling resources, the elderly with more houses and higher income had more positive life satisfaction; the elderly with higher education level and higher instrumental activities of daily living had more positive life satisfaction; The higher the degree of social network support of the elderly is conducive to promoting their mental health. The external inner security will enable the elderly to better cope with the changes and forces of life brought by the

status of old age. ③ In the judgment of needs, the willingness of institutional care services has a negative impact on the life satisfaction of the elderly, indicating that the elderly who choose institutional care services may receive less intergenerational support, and their inner satisfaction and fulfillment are relatively low. Therefore, the primary focus of effectively promoting the active aging process is still to improve the economic situation of the elderly. We should first meet the basic material needs of the elderly, and then solve the contradiction between the spiritual needs of the elderly and the realization of self-worth.

(2) At present, the supply of pension facilities and institutional beds far exceeds the industry demand, and the bed utilization rate of institutional pension beds has been declining year by year since 2011, indicating that there are problems such as resource waste and low effective utilization rate of pension beds; At the same time, the mismatch between the professional quality and cultural background of nursing staff and the job demand greatly limits the professional and professional development of the pension service industry, and the imbalance of the five gender and age structure of the nursing team seriously restricts the improvement of the quality of nursing for the aged. Moreover, regional institutional care service supply efficiency, according to the results of Huang Gang pension agency service comprehensive efficiency with an average of 0.944, the average efficiency of 0.964 tons of technology, scale efficiency than average 0.979; Promote the balanced development of the elderly in Huang Gang City.

5.2.8 Discussion of the findings

Structural Challenges

The supply-demand mismatch is evident across all three care models. Family care is strained by demographic transitions and insufficient external support. Community care, while promising, is hampered by underinvestment, especially in healthcare integration and trained personnel. Institutional care, although resource-rich, suffers from cultural stigma and affordability issues. These challenges reveal a lack of top-level policy design and fragmented service integration across the care continuum.

Cultural and Economic Factors

Cultural norms strongly influence care preferences. Most elderly individuals associate dignity and respect with being cared for by family members, which suppresses demand for formal services. However, economic reality often overrides cultural preference—wealthier individuals are more likely to choose institutional care despite its stigma. Similarly, higher education levels correlate with greater acceptance of community and institutional options. The divergence between cultural values and socio-economic capacity poses a significant challenge to policy planning.

Urban-Rural Divide

The urban-rural gap is pronounced in care preferences and service accessibility. Urban residents are more likely to opt for community or institutional care due to better infrastructure and access to information. In contrast, rural residents continue to rely heavily on family care despite limited resources. Education level, income, and health status further accentuate these divides. Thus, tailored strategies are needed to address the spatial inequalities in long-term care service provision.

In the process of the supply of long-term care services in Huang Gang, endowment service resource allocation, and all the care model function positioning of upper show a lack of a comprehensive overall planning and deployment of this dilemma; Regional and exist at the same time human, financial and uneven distribution of resources, services, the phenomenon of mismatch between supply and demand, leading to long-term care services supply resources inefficiently and lack of efficiency. The main reasons for the difficulties in the development of long-term care services for the elderly are: the lack of upper-level protection of long-term care service policies and systems, the supply of long-term care services, and the situation of "high demand and low utilization" of community care services for the elderly in Huang Gang City. Accompanied by one of the highest weighted demand according to the results of the "doctor" followed by the medical care services such as "the elderly service hotline" and other spiritual solace class service, the last is a life to take care of such services. At present, the imbalance between supply and demand of community care services is still serious. Under the nine items of three categories of community care services (life care, medical care and spiritual comfort), the proportion of the elderly who have corresponding needs but are not supplied is almost more than 30%. The spiritual

consolation service has the highest percentage of imbalance between supply and demand, the second is that medical care and life care services. The author USES the CLASS of 2022, China elderly social investigation, with Anderson behavioral model for the analysis framework, specific investigate the subjective demand for community care service is the objective demand to produce based on its own, or from the existing supply guidance; To explore the quantitative influence of each factor on the demand for community care services for the elderly from the perspective of predisposing factors, enabling factors and demand factors.

In the choice to pension age of elderly subjective demand for community care service was more strongly: compared to the old man who has a spouse childless old man in the club and the subjective demand of care services is lower, at the same time, the new older adults than urban elderly people express more significant demand for community care services.

The supply level of community care services The current supply level of community care services has a significant positive impact on the subjective needs of the elderly.

In the elderly endowment demand factors analyzed its own objective demand's influence on community care services, including self-evaluation in good health of the elderly than general or poor old people about community health care service of subjective demand is low; The higher the income of the elderly the subjective demand for community care services are also more show strong

On the supply side, the current community care service type in the supply of the highest level is the life taking care of such services, the second is the spiritual solace classes and medical care service, reflected the life to take care of the difficulty of the supply of such services is low, so the community in the service provided is sufficient. However, the community care service model in Huang Gang started relatively late, and the utilization rate of pension beds has been floating at a low level, indicating that the development of service use lags far behind the investment and expansion of community pension institutions and facilities. In addition, the content of community care services in its development process is single, and the effective

demand of the elderly for long-term care services is insufficient. Therefore, exploring the causes and intrinsic essence of the contradiction between the supply and demand of long-term care services for the elderly is conducive to providing theoretical guidance and practical basis for the establishment of a sustainable long-term care service system in Huang Gang City.

5.3 limitations of the study

First, there is a lack of empirical analysis on the long-term care service providers. Given the availability of available data, this paper uses Andersen's behavioral model framework and the effective demand theory that demand determines supply. It is determined that the supply of long-term care services for the elderly should be based on the needs of the elderly. Therefore, this paper will focus on the demand side of long-term care services and the elderly's choice of long-term care methods and service use. In the relevant empirical analysis of supply subjects, the descriptive analysis of macro data is mostly used, but the principal component analysis and data envelopment analysis methods are selected to integrate and quantitatively process the existing mining data, in order to make up for the shortage of supply subjects' empirical analysis.

Secondly, in terms of the measurement of the imbalance between supply and demand of long-term care services, only a quantitative comparison of the imbalance between supply and demand was made in the analysis of supply and demand of community care services (living care, medical care, and spiritual comfort). However, regarding the use of specific categories of services of the other two care services, namely Family care and institutional care, due to the lack of field research data as support, Therefore, this paper does not elaborate on this too much, so it also has certain shortcomings, and this will be the direction of further research in the future.

5.4 countermeasures and Suggestions

In-FamilyCare: Integrating Policy Empowerment and Technological Support

Financial Support System

Establish a tiered care subsidy system (monthly differentiated subsidies of 300–2,000 RMB based on disability levels).

Introduce tax deductions for family caregivers, covering nursing supplies and assistive devices.

Pilot a "time-bank" mutual aid program where caregiving hours can be exchanged for future institutional care services.

Capacity Building

Launch standardized community training programs (≥40 annual hours) covering emergency response, rehabilitation techniques, and psychological support.

Develop a "Silver-Age Caregiver" certification system with monthly allowances and social insurance subsidies for certified personnel.

Deploy family doctor contracting platforms offering bi-monthly home visits and telehealth consultations.

Service Infrastructure

Achieve full coverage of street-level daycare centers by 2025, providing 15 days/year of subsidized respite care per household.

Implement a "Smart Elderly Care Kit" initiative with life-monitoring mattresses and emergency call devices.

Create a unified service procurement platform integrating 200+ local vendors for discounted in-home services.

Community Care: Building a 15-Minute Service Ecosystem

Facility Upgrades

Allocate community care facilities at 2% of the elderly population, with new residential complexes providing 0.3 ㎡ per capita.

Develop multi-functional community hubs (≥500 ㎡) integrating dining, medical, and recreational services.

Accelerate age-friendly retrofitting (e.g., elevator installations) to reach 90% coverage in old neighborhoods by 2027.

Specialized Services

Publish a "Basic Care + Specialized Services" catalog with 6 categories and 42 standardized items.

Establish integrated medical-care stations staffed with general practitioners, rehabilitation specialists, and psychologists.

Foster 10 local care cooperatives with franchise models and star-rated quality evaluations.

Resource Coordination

Introduce a "care time savings" scheme (1 service hour = 1 credit redeemable at 80% market value).

Establish a community care fund (government-society co-financed) for financially vulnerable groups.

Launch a digital care resource map displaying real-time facility availability and bookings.

Institutional Care: Tiered Supply and Quality Assurance

Targeted Subsidies

Adopt a "care difficulty coefficient" subsidy model (1.0–3.0 tiers), increasing subsidies by 50% for severe disabilities.

Link subsidies to facility star ratings (5-star institutions receive 30% higher operational subsidies).

Provide 120% cost coverage for institutions serving low-income, severely disabled elders.

Quality Enhancement

Mandate ISO 9001 certification and full-process service tracking systems.

Train 100 care facility managers through a "Dean Development Program" within 3 years.

Implement monthly public open days for transparency and satisfaction evaluations.

Diversified Development

Offer 20,000 RMB/bed subsidies for medical institutions transitioning to elder care.

Promote "micro-family nursing homes" (5–20 beds) with SME tax incentives.

Build an Edong health industry cluster, attracting 10 specialized operators for regional service networks.

Implementation Safeguards

1. Form a cross-departmental task force (civil affairs, health, HR, etc.) for coordinated governance.

2. Develop a big-data monitoring platform to track supply-demand dynamics in real time.

3. Create a 1-billion-RMB elderly care development fund for low-interest loans and risk mitigation.

4. Launch a "Silver Talent Return" program to rehire retired medical professionals (annual 20,000 RMB stipends).

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Appendix

Appendix 1 Statistics of population distribution in China over the years Statistics of population distribution in China over the years

Copy of the years	End of year Total People mouth (billion) People)	Birth rate (‰)	mortal ity rate (‰))	Natura l increa se Long rate (‰))	Composition by age						Agedcare Yangbi (%)
					0 to 14 years old		15-64 years old		Age 65 and older		
					Population The number(billion People)	Specific gravity (%)	Population The number (billion People)	Specific gravity (%)	Population The number(billion People)	Specific gravity (%)	
2004	12.67	14.03	6.45	7.58	2.90	22.89	8.89	70.10	0.88	6.96	9.92
2005	12.76	13.38	6.43	6.95	2.87	22.50	8.98	70.40	0.91	7.10	10.09
2006	12.85	12.86	6.41	6.45	2.88	22.40	9.03	70.30	0.94	7.30	10.38
2007	12.92	12.41	6.40	6.01	2.86	22.10	9.10	70.40	0.97	7.50	10.65
2008	13.00	12.29	6.42	5.87	2.79	21.50	9.22	70.90	0.99	7.60	10.69
2009	13.08	12.40	6.51	5.89	2.65	20.30	9.42	72.00	1.01	7.70	10.67
2010	13.14	12.09	6.81	5.28	2.60	19.80	9.51	72.30	1.04	7.90	10.96
2011	13.21	12.10	6.93	5.17	2.57	19.40	9.58	72.50	1.06	8.10	11.10
2012	13.28	12.14	7.06	5.08	2.52	19.00	9.67	72.70	1.10	8.30	11.33
2013	13.35	11.95	7.08	4.87	2.47	18.50	9.75	73.00	1.13	8.50	11.60
2014	13.41	11.90	7.11	4.79	2.23	16.60	9.99	74.50	1.19	8.90	11.90
2015	13.47	11.93	7.14	4.79	2.22	16.50	10.03	74.40	1.23	9.10	12.25
2016	13.54	12.10	7.15	4.95	2.23	16.50	10.04	74.10	1.27	9.40	12.66
2017	13.61	12.08	7.16	4.92	2.23	16.40	10.06	73.90	1.32	9.70	13.08
2018	13.68	12.37	7.16	5.21	2.26	16.50	10.05	73.40	1.38	10.10	13.69
2019	13.75	12.07	7.11	4.96	2.27	16.52	10.04	73.01	1.44	10.47	14.33
2020	13.83	12.95	7.09	5.86	2.30	16.70	10.03	72.50	1.50	10.80	15.00
2021	13.90	12.43	7.11	5.32	2.33	16.80	9.98	71.80	1.58	11.40	15.86
2022	13.95	10.94	7.13	3.81	2.35	16.86	9.94	71.20	1.67	11.90	16.77

Data source: China Statistical Yearbook, 2004-2022

Appendix 2: Levels of self-care disability in the elderly

Disability level of the elderly's self-care ability in daily life

ADL	Overall	Gender		Urban/rural		age group				
		male	female	City	Rural	60 ~ 64	65 ~ 69	70 ~ 74	75-79.	80 and up
Complete self -care	80.45 %	83.61 %	77.54 %	83.50 %	75.89 %	91.15 %	86.49 %	82.77 %	73.85 %	55.39 %
Mild disability	17.16 %	14.38 %	19.72 %	14.09 %	21.76 %	7.99 %	12.38 %	15.74 %	23.14 %	37.23 %
Moderate disability	1.06 %	0.87 %	1.24 %	1.14 %	0.93 %	0.28 %	0.50 %	0.72 %	1.48 %	3.29 %
Severe disability	1.33 %	1.14 %	1.50 %	1.27 %	1.41 %	0.58 %	0.63 %	0.77 %	1.54 %	4.09 %
Total	100.00 %	100.00 %	100.00 %	100.00 %	100.00 %	100.00 %	100.00 %	100.00 %	100.00 %	100.00 %

Data Source: 2022 CLASS China Aging Social Tracking Survey.

Appendix 3: Levels of instrumental self-care disability in the elderly

Level of instrumental self-care disability in the elderly

IADL	Overall	Gender		Urban/rural		age group				
		male	female	City	Rural	60 ~ 64	65 ~ 69	70 ~ 74	75 ~ 79	80 and above
Complete self-care	60.61%	68.83%	53.02%	68.94%	48.11%	78.62%	70.11%	60.56%	46.39%	26.24%
Mild disability	28.05%	22.38%	33.29%	21.18%	38.36%	18.25%	24.51%	31.03%	37.99%	39.55%
Moderate disability	6.48%	4.94%	7.91%	5.20%	8.41%	1.71%	3.25%	5.38%	9.59%	18.27%
Severe disabilty	4.86%	3.85%	5.78%	4.68%	5.13%	1.41%	2.13%	3.03%	6.04%	15.95%
Total	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%

Data source: 2022 CLASS Social Tracking Survey of the Elderly in China .

Appendix 4: Certificate of Approval

MAHASARAKHAM UNIVERSITY ETHICS COMMITTEE FOR RESEARCH INVOLVING HUMAN SUBJECTS

Certificate of Approval

Approval number: 704-587/2024

Title : Demand and Supply of long-term care services for the elderly in Huang Gang city, Hubei Province, China.

Principal Investigator : Yang Jian
Responsible Department : Faculty of Public Health
Research site : Huang Gang, Hu Bei Province, China

Review Method : Expedited Review

Date of Manufacture : 20 November 2024 **Expire :** 19 November 2025

This research application has been reviewed and approved by the Ethics Committee for Research Involving Human Subjects, Mahasarakham University, Thailand. Approval is dependent on local ethical approval having been received. Any subsequent changes to the consent form must be re-submitted to the Committee.

Ratree S.

(Assistant Professor Ratree Sawangjit)
Chairman

Approval is granted subject to the following conditions: (see back of this Certificate)

黄冈职业技术学院伦理委员会

Ethics Committee of Huanggang Polytechnic College

伦理审查批件

伦理审查批件号		2024HZ-07	
主要研究者		杨健（YangJian）	
项目名称		Analysis on the status quo of long-term care service for the elderly in Huanggang City黄冈市老年长期护理服务现状分析	
资助来源		自筹经费	
审查时间		2024 年 2 月 4 日	
审查地点		湖北省黄冈市黄冈职业技术学院	
审查内别		简易程序审查	
审查文件		1.群调科研审查申请表审阅以及审查同意文件 2.研究方案问卷 3.主要研究者专业履历	
审查意见		根据涉及人的生命科学和医学研究伦理审查〔2023〕4 号，以及世界医学会《赫尔辛基宜言》(2008)等，经本伦理委员会审查，同意按所批准的研究方案、知情同意书开展本项研究。	
有效期	自批件下发起两年有效,2024 年 2 月 4 日-2026 年 2 月 3 日	跟踪调查频率	12 个月
伦理委员会签字	2024.2.4	黄冈职业技术学院伦理委员会/学术委员会	
联系地址	黄冈市桃园街 109 号	联系人：柴艳艳 0713-8345998	

Appendix 5: Clarification documents for the volunteers who answered the questionnaires.

(answering questionnaires must over 18 years old)

To All respondents

My name is Mr. Jian Yang, the Master student of Public Health program, Faculty of Public Health, Mahasarakham University. I am conducting the research entitle: “Demand and Supply of long-term care services for the elderly in Huang Gang city, Hubei Province, China”. My name is Mr. Yang Jian, and I am a doctoral student in the Master of Public Health program of the School of Public Health of Mahasarahan University. The title of my ongoing research is: " Demand and Supply of long-term care services for the elderly in Huang Gang city, Hubei Province, China". The research objective consists of three projects :1) Describe the demographic characteristics and current situation of the elderly in Huang Gang City, 2) describe the current situation of the elderly long-term care in Huang Gang City, Hubei Province, 3) Describe the current situation of the elderly care families, communities and institutions in Huang Gang City.

This study will bring you the following benefits :1) evaluate the effect of the current long-term care for the elderly in Huang Gang City; 2) To provide suggestions on the impact of long-term care for the elderly on the quality of life in Huang Gang City; 3) To provide basis for elderly care services in Huang Gang City.

Your participation in this study is voluntary. It is up to you to decide whether or not to take part in this study. If you decided to participate in this research, I would like you to answer the questionnaire of the situation and contexts of the implementing. When you are finished answer all of item, please send it back to the researcher team. Please take time to answer the questionnaire carefully or ask the researcher if there is anything that is not clear or if you have any question.

If you feel uncomfortable or undesired with some questions, you have the right to refuse to answer questions. Also, you have the right to withdraw from this program at any time without prior notice. In additional, the refusal or withdrawal from this project will involve no affect your learning, now or in the future.

The data will be kept and not publicly disclosed on an individual person. All data will be identified only by a code, with personal details kept in a locked file or

secure computer with access only by the immediate research team. The results will only present in terms of overall and these data will be destroyed at the end of the study. In this research, you do not receive compensation and will not be charged anything.

If you have any questions about the research, or if you would like more information, please contact Jian Yang, Faculty of Public Health, Mahasarakham University. E-mail : 363845940@qq.com

If you have not performed as stated or want to know your rights while participating in this research, please contact "Committee on Ethics for Research in Humans Mahasarakham University Division of Research" Tel. 043-754416, 1758

Thank you for taking the time to read this information sheet and we hope that you will accept our invitation to be involved.

Best Regards,

……

(Mr. Jian Yang)

Researcher

Appendix 6: Attachment: Elderly care needs questionnaire

Huanggang Polytechnic College and Technical College nursing school needs survey questionnaire

Dear:

First of all, I sincerely thank you for your support for this project and for your strong support and help for the elderly care work of our hospital!

In order to better understand your needs for old-age care, listen to your opinions and suggestions on old-age care, and further improve the quality and level of old-age care in Huanggang City. We organized this questionnaire survey.

This questionnaire is only for investigation and research, without any commercial purpose. Please help us to fill out the contents. Thank you again for your support to our work in your busy schedule!

Huanggang Polytechnic College

(Use wechat to scan the QR code to get the questionnaire)

附件：养老照护需求调查问卷

黄冈职业技术学院护理学院养老需求调研问卷

尊敬的：

首先衷心感谢你对本项目的支持，衷心感谢对我院养老照护工作给予的大力支持和帮助！

为了更好地了解你对养老的需求，听取贵你对养老事业的意见和建议，进一步提高黄冈市养老照护的质量和水平。我们组织开展本次问卷调查。

本问卷仅供调查研究使用，无任何商业目的，请协助我们填好各项内容，再次感谢贵单位在百忙之中对我院工作的支持！

黄冈职业技术学院

护理学院

第一部分:个人情况

1、年龄（ ）

A.男　　B.女

2、性别（ ）

A.男　　B.女

3、婚姻情况（ ）

A.已婚　　B.未婚

4、文化程度（ ）

A.小学及以下　B.初中　C.高中/中专　D.本科/大专及以上

5、健康状况（ ）

A.良好，可以独立生活　　B.较好，可以自理　　C.一般，基本不需要他人照顾　　D.护士较差，需要他人照顾　　E.很差，完全需要他人照顾

6、职业（ ）

A.农民　　B.事业单位职工　　C.机关单位职工　　D.企业单位职工 E 无工作

第二部分:养老现状

7、您现在的养老方式是什么?（ ）

A.与子女同住养老　B.居家养老　　C.养老机构养老　　D.其他

8、您每月的经济支出所占比重较大的为?（ ）

A.饮食出行　　B.日常开销　　C.医疗支出 D.文化活动支出 E.其他

9、您的经济来源?（ ）

A.工作收入　　B.退休金　　C.子女供给　　D.政府生活补助　E.无收入来源

10、您的月经济收入?（ ）

A.<1000　　B.1000-2500 C.2500-5000 D. 5000-10000　　E.>10000

11、您认为当前社会存在哪些养老问题?（ ）[多选题]

A.养老经济负担大　　B.无法把老人接到身边　　C.养老机构不足　　D.对养老机构不放心　　E.老人生活单调空虚，无人陪伴 F.护理康复医疗短缺 G.其他

12、您认为现在的养老机构养老存在哪些问题?（ ）[多选题]

A.价格比较高　　B.服务质量和态度无保障　　C.硬件设施、居住环境差　　D.离市区比较远 E.其他

13、 您参加过哪些养老活动项目和社会活动?（ ）[多选题]

A.社区老年活动室　　B.老年健身活动　　C.文化娱乐活动　　D.外出游玩活动 E.社区老年学校 F.老年公益活动　　G.其他

14、在您现在的养老环境，生活便利程度怎么样?（ ）

A.交通便利，附近有超市、菜场、医院　　B.不太方便，超市、菜场或医院比较远

C.很不方便，买菜、就医等都要走很远

15、您认为子女在赡养父母方面面临的最大压力是什么?（ ）[多选题]

A.经济条件 B.思想代沟 C.自我责任意识 D.生活习惯不同

E.老人身体状况 F.老年照护 G.无压力

16、您认为老年人幸福的标志是什么？（ ）[多选题]

A.儿女孝顺 B.身体健康 C.有稳定的经济来源 D.有丰富的娱乐生活 E.继续工作

第三部分:养老需求

17、 您认为老人的养老生活安排主要由谁决定?（ ）

A.全权由子女决定 B.全权由老人决定 C.家人协商，子女主导

D.家人协商,老人主导 E.家人平等协商

18.您是否愿意入住养老机构?（）

A 愿意

B 不愿意

19.您希望养老机构提供的服务项目是什么?（多选，限制 5 个）

A 日间照料 B 上门服务 C 紧急救助 D.保健康复 E.家务整理 F.送餐服务 G.陪护服务

家庭护理 I.社交服务 J.心理健康服务 K.文化娱乐服务

您希望养老机构提供的住宿条件是什么?

单人间 B.双人间 C.三人间 D.其他

20.养老过程中您是否愿意同子女相住?

A 愿意

B 不愿意

如不愿意，请问为什么?

21.两代人之间生活习惯与观念不同，易产生矛盾

生活在一起不方便

怕后代因自己争吵

不想改变自己原有的生活方式

22.影响您选择养老机构的因素有什么?（多选，限制 5 个）

自然环境 B.住宿条件 C.服务质量与态度 D.收费标准 E.饮食标准

文体活动 G.医疗服务 H.康复护理 I.生活设施 J.品牌信誉 K.交通条件

其他

23.您所希望的养老方式是什么?

与子女同住养老 B.入住养老机构 C.依托社区居家养老 D.自聘保姆养老

如果异地环境更好，您是否愿意去异地养老?

A 愿意

B 不愿意

24.您认为最需要养老机构提供的服务项目是什么?（多选，限制 5 个）

A.生活照料 B.安全保障 C.康复训练 D.休闲娱乐 E.精神慰藉 F.医疗保健

G.日托服务 H.紧急救助 I.老年人学习培训 J.参与社会活动 K.心理护理

L.身体锻炼 M.其他

25.您对目前养老体系的建议?（多选）

A.应该关注老年人心理健康 B.丰富老年人精神文化娱乐活动 C.落实子女的赡养责任

D.提高老年人的养老保障和医疗保障水平 E.优化社区养老服务人数

F.加强养老机构建设 G.加强养老服务人才队伍培养及发展志愿性养老服务

Attachment: Elderly Care Needs Survey Questionnaire

Huanggang Polytechnic College School of Nursing Elderly Care Needs Survey

Dear Respondent,

First and foremost, we sincerely thank you for your support and assistance in this project and for your invaluable contribution to our elderly care initiatives.

To better understand your needs for elderly care and gather your opinions and suggestions for improving elderly care services in Huanggang City, we are conducting this survey. This questionnaire is solely for research purposes and contains no commercial intent. Please complete all sections carefully. Thank you for your time and support!

Huanggang Polytechnic College

School of Nursing

Part 1: Personal Information

1.Age ( )

A. <50 B. 50-60 C. 60-70 D. 70-80 E. >80

2.Gender ( )

A. Male B. Female

3.Marital Status ( )

A. Married B. Unmarried

4.Educational Level ( )

A. Primary school or below B. Junior high school C. High school/vocational school D. College/University or above

5.Health Status ( )

A. Good (independent living) B. Fair (self-sufficient) C. Moderate (occasional assistance needed) D. Poor (requires regular care) E. Very poor (fully dependent on others)

6.Occupation ( )

A. Farmer B. Government/Public institution employee C. Private sector employee D. Unemployed

Part 2: Current Elderly Care Status

7.Your current elderly care arrangement? ( )
A. Living with children B. Home-based care C. Institutional care D. Other

8.Your largest monthly expense category? ( )
A. Food/Transportation B. Daily necessities C. Medical costs D. Cultural/recreational activities E. Other

9.Primary source of income? ( )
A. Employment B. Pension C. Support from children D. Government subsidies E. No income

10.Monthly income? ( )
A. <¥1,000 B. ¥1,000–2,500 C. ¥2,500–5,000 D. ¥5,000–10,000 E. >¥10,000

11.Current societal challenges in elderly care? ( ) [Multiple choice]
A. Financial burden B. Inability to live with children C. Insufficient care facilities D. Distrust in institutions E. Loneliness/lack of companionship F. Lack of medical/rehabilitation services G. Other

12.Issues with current elderly care institutions? ( ) [Multiple choice]
A. High costs B. Poor service quality C. Poor facilities/environment D. Remote locations E. Other

13.Which elderly care/social activities have you participated in? ( ) [Multiple choice]
A. Community senior centers B. Fitness programs C. Cultural/recreational activities D. Travel programs E. Senior schools F. Volunteer programs G. Other

14.Convenience of your current living environment? ( )
A. Convenient (near markets, hospitals) B. Moderately convenient C. Inconvenient

15.Biggest challenges for children supporting elderly parents? ( ) [Multiple choice]
A. Financial pressure B. Generation gap C. Lack of responsibility D. Lifestyle differences E. Health issues F. Caregiving burden G. No pressure

16.What defines happiness for the elderly? ( ) [Multiple choice]
A. Filial children B. Good health C. Stable income D. Active social life E. Continued work

Part 3: Elderly Care Needs

17.Who should decide elderly care arrangements? ( )

A. Children decide B. Elderly decide C. Family discussion (children lead) D. Family discussion (elderly lead) E. Equal family discussion

18.Would you consider institutional care? ( )

A. Yes B. No

19.Preferred institutional services? (Select up to 5)

A. Daycare B. In-home care C. Emergency aid D. Health rehab E. Housekeeping F. Meal delivery G. Companionship H. Home nursing I. Social activities J. Mental health support K. Cultural activities

20.Preferred accommodation type? ( )

A. Single room B. Double room C. Triple room D. Other

21.Would you prefer living with your children? ( )

A. Yes B. NoIf no, why?

a. Generational lifestyle conflicts b. Inconvenience c. Fear of causing family disputes d. Prefer independence

22Factors influencing institutional care choice? (Select up to 5)

A. Natural environment B. Accommodation quality C. Service quality D. Cost E. Food F. Recreational activities G. Medical services H. Rehabilitation I. Facilities J. Reputation K. Transportation L. Other

23.Preferred elderly care method? ( )

A. Living with children B. Institutional care C. Community-based home care D. Private caregiver

24.Would you consider relocating for better care? ( )

A. Yes B. No

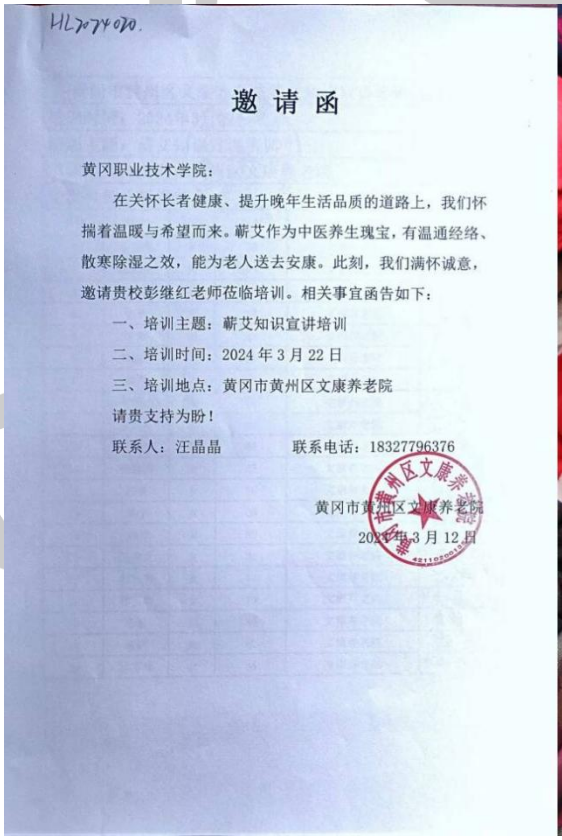
25.Most needed institutional services? (Select up to 5)

A. Daily care B. Safety C. Rehab training D. Recreation E. Emotional support F. Healthcare G. Day programs H. Emergency aid I. Senior education J. Social engagement K. Mental health L. Exercise M. Other

26.Suggestions for improving elderly care? (Multiple choice)

A. Focus on mental health B. Enrich cultural activities C. Strengthen children’s responsibility D. Improve social/medical security E. Expand community care F. Develop better institutions G. Train professional caregivers/promote volunteerism

PICTURE OF DATA



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邀 请 函

黄冈职业技术学院：

在关怀长者健康、提升晚年生活品质的道路上，我们怀揣着温暖与希望而来。蕲艾作为中医养生瑰宝，有温通经络、散寒除湿之效，能为老人送去安康。此刻，我们满怀诚意，邀请贵校彭继红老师莅临培训。相关事宜函告如下：

一、培训主题：蕲艾知识宣讲培训

二、培训时间：2024 年 3 月 22 日

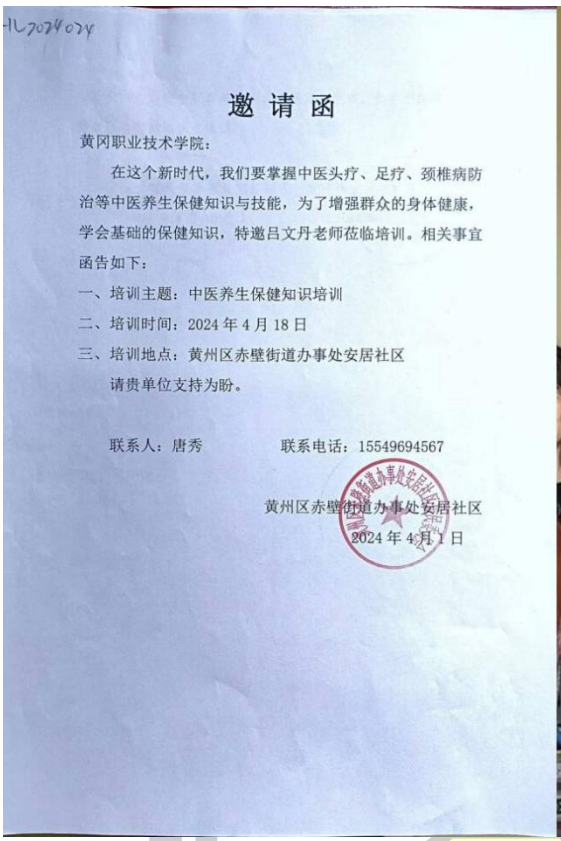
三、培训地点：黄冈市黄州区文康养老院

请贵支持为盼！

联系人：汪晶晶　　联系电话：18327796376

黄冈市黄州区文康养老院

2024 年 3 月 12 日



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黄冈职业技术学院：

在这个新时代，我们要掌握中医头疗、足疗、颈椎病防治等中医养生保健知识与技能，为了增强群众的身体健康，学会基础的保健知识，特邀吕文丹老师莅临培训。相关事宜函告如下：

一、培训主题：中医养生保健知识培训

二、培训时间：2024 年 4 月 18 日

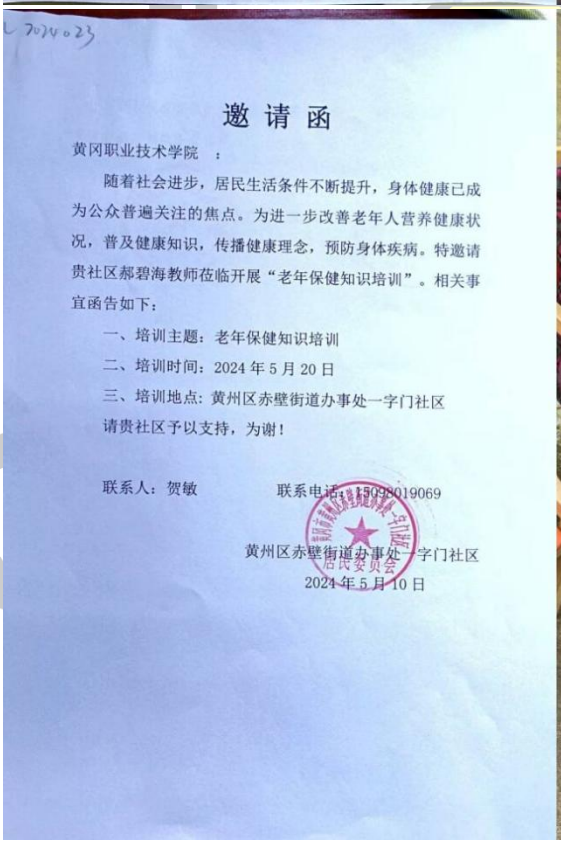
三、培训地点：黄州区赤壁街道办事处安居社区

请贵单位支持为盼。

联系人：唐秀　　联系电话：15549694567

黄州区赤壁街道办事处安居社区

2024 年 4 月 1 日



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黄冈职业技术学院　：

随着社会进步，居民生活条件不断提升，身体健康已成为公众普遍关注的焦点。为进一步改善老年人营养健康状况，普及健康知识，传播健康理念，预防身体疾病。特邀请贵社区郝碧海教师莅临开展“老年保健知识培训”。相关事宜函告如下：

一、培训主题：老年保健知识培训

二、培训时间：2024 年 5 月 20 日

三、培训地点：黄州区赤壁街道办事处一字门社区

请贵社区予以支持，为谢！

联系人：贺敏　　联系电话：15048019069

黄州区赤壁街道办事处一字门社区

2024 年 5 月 10 日

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黄冈职业技术学院：

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一、培训主题：蕲艾知识宣讲培训

二、培训时间：2024 年 3 月 22 日

三、培训地点：黄冈市黄州区文康养老院

请贵支持为盼！

联系人：汪晶晶　　联系电话：18327796376

黄冈市黄州区文康养老院

2024 年 3 月 12 日

黄冈市黄州区文康养老院蕲艾知识宣讲培训人员名单

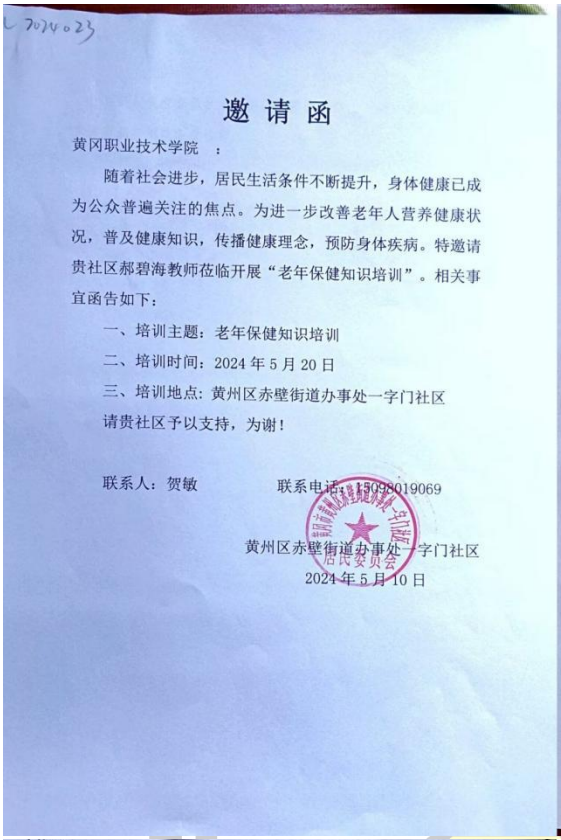
培训时间：2024年3月22日

培训主题：蕲艾知识宣讲培训

培训地点：黄冈市黄州区文康养老院

主讲教师：彭继红

序号	姓名	性别	年龄	康养机构	签名
1	李福全	男	59	文康养老院	
2	张启山	男	60	文康养老院	
3	陈永祥	男	65	文康养老院	
4	陈勇	男	58	文康养老院	
5	叶辉	男	60	文康养老院	
6	刘振国	男	55	文康养老院	
7	赵景	男	61	文康养老院	
8	张德福	男	76	文康养老院	
9	王启祥	男	87	文康养老院	
10	赵敬贤	男	67	文康养老院	
11	孙婉清	女	88	文康养老院	
12	许梦	女	76	文康养老院	
13	吴宁	女	68	文康养老院	
14	刘芳	女	89	文康养老院	
15	王秀兰	女	85	文康养老院	
16	刘桂芳	女	77	文康养老院	
17	孙玉梅	女	79	文康养老院	
18	李静	女	80	文康养老院	
19	熙婉	女	82	文康养老院	
20	林秀珍	女	84	文康养老院	



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黄冈职业技术学院 ：

随着社会进步，居民生活条件不断提升，身体健康已成为公众普遍关注的焦点。为进一步改善老年人营养健康状况，普及健康知识，传播健康理念，预防身体疾病。特邀请贵社区郝碧海教师莅临开展“老年保健知识培训”。相关事宜函告如下：

一、培训主题：老年保健知识培训

二、培训时间：2024 年 5 月 20 日

三、培训地点：黄州区赤壁街道办事处一字门社区

请贵社区予以支持，为谢！

联系人：贺敏　　联系电话：15038019069

黄州区赤壁街道办事处一字门社区

2024 年 5 月 10 日

老年保健知识培训签到表

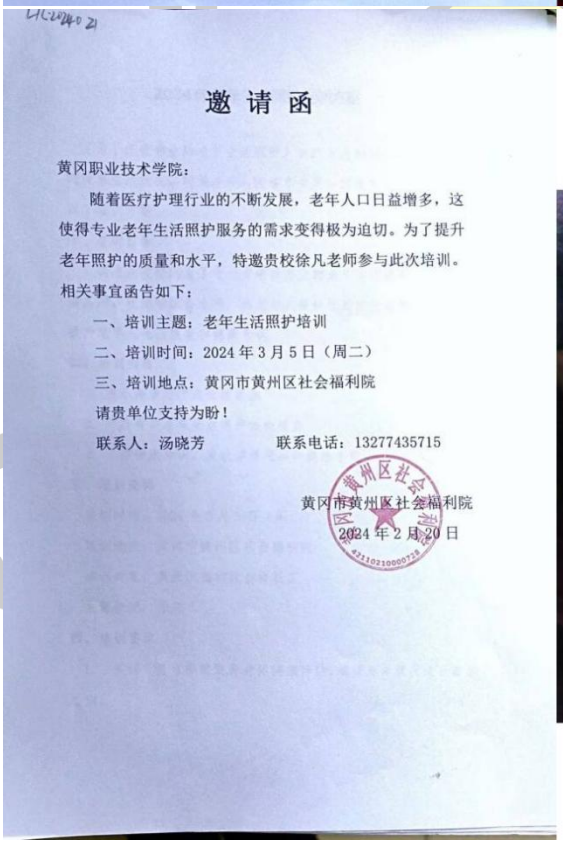
培训时间：2024年5月20日

培训主题：老年保健知识培训

培训地点：黄冈市黄州区赤壁街道办事处一字门社区

主讲教师：郝碧海

序号	姓名	性别	年龄	家庭住址	签名
1	张卫东	男	45	黄冈市黄州区赤壁街道办事处一字门社区	张卫东
2	李伟	男	46	黄冈市黄州区赤壁街道办事处一字门社区	李伟
3	阮连芳	女	49	黄冈市黄州区赤壁街道办事处一字门社区	阮连芳
4	王哲	男	47	黄冈市黄州区赤壁街道办事处一字门社区	王哲
5	宋健梅	女	45	黄冈市黄州区赤壁街道办事处一字门社区	宋健梅
6	刘柏林	男	46	黄冈市黄州区赤壁街道办事处一字门社区	刘柏林
7	陈英	女	49	黄冈市黄州区赤壁街道办事处一字门社区	陈英
8	陈明贵	男	50	黄冈市黄州区赤壁街道办事处一字门社区	陈明贵
9	何琴	女	46	黄冈市黄州区赤壁街道办事处一字门社区	何琴
10	周光辉	男	47	黄冈市黄州区赤壁街道办事处一字门社区	周光辉
11	李素君	女	48	黄冈市黄州区赤壁街道办事处一字门社区	李素君
12	严云	男	49	黄冈市黄州区赤壁街道办事处一字门社区	严云
13	王丹	女	47	黄冈市黄州区赤壁街道办事处一字门社区	王丹
14	陈晓辉	男	46	黄冈市黄州区赤壁街道办事处一字门社区	陈晓辉
15	周恩光	男	47	黄冈市黄州区赤壁街道办事处一字门社区	周恩光
16	徐高元	男	49	黄冈市黄州区赤壁街道办事处一字门社区	徐高元
17	王建军	男	46	黄冈市黄州区赤壁街道办事处一字门社区	王建军



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黄冈职业技术学院：

随着医疗护理行业的不断发展，老年人口日益增多，这使得专业老年生活照护服务的需求变得极为迫切。为了提升老年照护的质量和水平，特邀贵校徐凡老师参与此次培训。相关事宜函告如下：

一、培训主题：老年生活照护培训

二、培训时间：2024 年 3 月 5 日（周二）

三、培训地点：黄冈市黄州区社会福利院

请贵单位支持为盼！

联系人：汤晓芳　　联系电话：13277435715

黄冈市黄州区社会福利院

2024 年 2 月 20 日


BOSIDENG


热烈欢迎黄冈职业技术学院护理学院
各位领导莅临我院考察


黄冈职院志愿服务

BIOGRAPHY

NAME	Mr.Jian Yang
DATE OF BIRTH	28/12/1987
PLACE OF BIRTH	Huang Gang City
ADDRESS	No. 2, 7nd Floor, Kangyi Homestead, Huangzhou District, Huanggang City, Hubei Province
POSITION	Associate Professor (Nursing)/Nursing Director
PLACE OF WORK	Huang Gang Polytechnic college/Huang Gang Central Hospital
EDUCATION	2011 Bachelor's degree, Hubei Min Zu University, majoring in Medical Systems and Nursing 2025 Master's degree of Public Health, Faculty of Public Health, Mahasarakham University
Research output	[1] Jiang N(1), Rao F(2), Xiao J(3), Yang J(2), Wang W(2), Li Z(4), Huang R(1), LiuZ(4), Guo T(5).Evaluation of different surgical dressings in reducing postoperative surgical site infection of a closed wound: A network meta-analysis. Int J Surg. 2020 Oct;82:24-29. doi: 10.1016/j.ijsu.2020.07.066. Epub 2020 Aug25. [2] Chang L(1), Wang W(2), Jiang N(3), Rao F(2), Gong C(1), Wu P(4), Yang J(2), Liu Z(1), Guo T(5).Dexamethasone prevents TACE-induced adverse events: A meta-analysis. Medicine (Baltimore). 2020 Nov 20;99(47):e23191. doi:10.1097/MD.0000000000023191. [3] Guo T((1), Dai Z(2), You (3), Battaglia-Hsu SF(4), Feng J(5), Wang F(6), Li B(7), Yang J(8), Li Z(9). S-adenosylmethionine upregulates the angiotensin receptor-binding protein ATRAP via the methylation of HuR in NAFLD. Cell Death Dis. 2021 Mar 22;12(4):306. doi: 10.1038/s41419-021-03591-1. [4] Shi M(1), Yao Y(2), Ding H(2), Yang J(3), Zhang C(2), Wu Y(4), Guo T(1). The Effect of Surgery on the Prognosis of Gastric Lymphoma: A Meta-analysis.Am Surg. 2023 Dec;89(12):6147-6156. doi: 10.1177/00031348231183126. Epub 2023 [5] Guo T(1), Liu P(1), Yang J(2), Wu P(1), Chen B(1), Liu Z(1), Li Z(1).Evaluation of Targeted Agents for Advanced and Unresectable Hepatocellular Carcinoma: A Network Meta-Analysis.J Cancer. 2019 Aug 19;10(19):4671-4678. doi: 10.7150/jca.32828. eCollection

2019.
[6] Gong C(1), Qin X(1), Yang J(2), Guo T(1). The Best Anticoagulation Strategy for Cirrhotic Patients who Underwent Splenectomy: A Network Meta-Analysis. Gastroenterol Res Pract. 2017;2017:9216172. doi: 10.1155/2017/9216172. Epub 2017 Jun 6.