

Research on the Core Problems of Rural Mutual Aid Endowment Facilities under the Background of Rural Revitalization

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Abstract: Addressing rural elder care is crucial for rural revitalization. One strategic solution is the implementation of mutual assistance elder care, a community-based care model that effectively tackles rural elder care issues. Examining the novel aspects of rural elder care, including "what it entails," "who utilizes it," "its application," and "its construction," can provide a practical framework for enhancing local elder care services and, consequently, advancing rural revitalization. It is imperative to clarify the architectural concept of rural mutual assistance elder care facilities, scrutinize the attributes of service recipients, and meticulously design, operate, and plan the functionality of these facilities and the mutual assistance they offer.

Keywords: Elderly-friendly Issues; Rural Villagers; Mutual Aid Elderly Communities; Three-Level Spatial System

1. Introduction

Human ecology, a field of study established by American scientist Park in the early 20th century, delves into the dynamic relationship between humans and their natural surroundings. Since its resurgence in the latter half of the 20th century, human ecology has found applications within the realm of sociology, with a primary focus on the design and operation of rural elderly care communities. These communities are guided by principles of human ecology and seek to comprehend the reciprocal relationship between residents' living conditions and their connection with their environment.

In China, a tradition of "falling leaves returning to their roots" and an agriculture-oriented lifestyle have been deeply ingrained. This tradition reflects a profound appreciation for the land and a longing for a peaceful and comfortable lifestyle in one's later years. However, the fast-paced nature of urban life has made it challenging for children to provide constant companionship to their aging parents, thus intensifying the need for the development of rural elderly care communities. In this context, human ecology emerges as a valuable tool for comprehending and addressing the intricate social and environmental challenges faced by elderly residents in rural communities. [1, 2].

2. Background and Purpose of the Study

Since China's entry into an aging society in 2000, there has been continuous refinement in the design methods and support services for elderly living and activities. This has led to the emergence of several social problems related to urban elderly care, including issues such as traffic congestion, limited public service resources, and pollution. Consequently, it is vital to consider and evaluate the potential value of suburban elderly care.

Currently, domestic research on age-friendly residential units, particularly in rural residential units for elderly care, has made significant progress. Unfortunately, China has not yet established many comprehensive and mature elderly communities. Instead, they primarily exist as community-based care centers and institutions for the elderly. The majority of these communities lack distinguishing features or unique attributes, resembling typical residential communities, except for limited space designated for public activities and support facilities. Only a select few medical-care-integrated elderly care communities, primarily serving the middle-class elderly population, possess costly facilities equipped with professional medical equipment.

However, when considering the tranquil countryside in suburban areas of cities, one can observe

notable differences in traffic patterns, street sizes, outdoor public activity behavior, and building scales compared to urban elderly care communities. Rural communities offer a more comfortable public level scale and a local ambiance within the context of their activities. Therefore, the application of design methods from urban elderly care communities to rural areas is a subject of great interest and research merit [3-4].

Jiangsu Province is rapidly transitioning into an aging society, with a significant increase in the elderly population. However, China's current pension system and model do not adequately address the challenges posed by an aging demographic. Therefore, it is imperative to strengthen the infrastructure for elderly care to meet their basic needs. This project will primarily focus on the healthcare community. Through an analysis of the current rural pension model in China, we will examine the challenges stemming from the lack of suitable architectural design and space construction. We will also assess the impact of the existing pension facility layout and establish the optimal site scope for our new facility. To optimize the utilization of these facilities, we will develop an integrated pension ecosystem aligned with the walking range of seniors. This will help achieve a balance between the demand and supply of rehabilitation centers and village pensions [5].

3. Analyzing Domestic and International Models of Recreational and Elderly Care

3.1 Overseas Recreation Building Architecture Case Study

3.1.1 Social security community in the town of Riaillet, France

In 2014, a housing project was established in Riaillet, a French town, featuring two distinct residential categories. The design was designed to build 15 social housing units, demonstrating the ideal of spaciousness and functionality while maintaining cost-effectiveness with a budget of 250 euros per square meter.

The design seamlessly integrates local and remote landscapes, subtly integrating the "rural landscape" into the overall design strategy. The design team also carefully planned the road system, implementing driveways on the western and northern sides of the site to minimize the amount of traffic in the area. In addition, due to the proximity of adjacent parcels, the northern road has been incorporated into the new road system. The result is a more refined design that optimizes limited budgets to generate spacious and segmented spaces, entrance areas, and adequate ventilation and lighting.

The community has dedicated a public garden area for the enjoyment of its residents, and hosts regular community gatherings, fostering an atmosphere of collective warmth and camaraderie where seniors can participate, thus enhancing their interaction with the external environment. This project serves as a valuable resource for the construction of rural welfare homes in northern China [6], as shown in Figure 1 and Figure 2.



Figure 1: 15 social security houses in the town of Riaillet, France



Figure 2: Internal walkways in security housing

3.1.2 Norra Vram Nursing Home, Sweden

The facility is located in the serene countryside of Norra Vram, Sweden, and was built in 2009. As a retirement home, it is accessible to the public. The structure, a single level, is situated amidst landscapes and offers picturesque scenery. It incorporates sustainable materials and employs geothermal systems. The layout features multiple corridors, facilitating movement and promoting a lively lifestyle among senior citizens. The design principle emphasizes spaciousness, warmth, and modern elegance, echoing the distinct needs and preferences of the elderly population [7].

The communal section of the building is designed so that each room opens outdoors, eliminating extensive corridors and promoting efficient traffic flow. The north and south rooms, facing each other and sharing a common outdoor space, invite social interaction among neighbors through opportunities for greeting, discussion, and gardening. This layout not only meets practical functional needs, but also encourages social interaction and strengthens community bonds, as shown in Figure 3 and Figure 4.



Figure 3: Photo of Norra Vram, Sweden



Figure 4: Norra Vram Floor Plan

3.2 Domestic Recreation Building Architecture Case Study

3.2.1 Rural Well-being Center, Erquanjing Township, Zhangjiakou, Hebei, China

Constructed in 2019, Erquanjing Township Rural Happiness Home is positioned 30 kilometers north of Zhangbei County, Zhangjiakou City, catering to tourists. The facility contains 75 spacious rooms, hosting 65 families, 63 primary inhabitants.

Located at the central entrance of the village, overlooking the countryside's main road, it offers direct vehicle access to interior areas, promoting convenience. The public surveillance design emulates barracks style, featuring an iron fence encircling the perimeter. Despite this formidable fence, visibility remains unhindered, echoing transparency. Public access is allowed during daytime, closing evenings for safety purposes. This design accommodates the preservation of living habits and friendship networks of the elderly residents, while ensuring their safety.

3.2.2 Henan Jiaozuo Dongshuizhai Village Rural Happiness Center

In 2019, the state-of-the-art "Charity Happy Home" in Dongshuizhai Village, Jiaozuo City, Henan Province, was inaugurated. Featuring superior equipment and amenities, it currently houses 20 elderly individuals, mainly widows and orphans. Constructed in alliance with the village committee, this home resides in a shared courtyard with expansive outdoor space and meticulously landscaped grounds.

The "Mutual-aid Happiness Home" in Dongshuizhai Village borders a secluded area of the village, distinct from communal settings. This home's layout seamlessly integrates residential and public areas, using a transition from expansive to compact spaces. Its central courtyard features an exterior corridor style, with public areas positioned at the eastern end, while private living quarters are located on the southern side, each with a picket fence providing privacy under the house. Also included is a modest vegetable garden and a spacious field of activity on the southern side, reinforcing the agricultural interests of the elderly residents, enriching their routines, promoting mutual support, reducing loneliness and affording a sense of purpose in their twilight years [8], as shown in Figure 5 and Figure 6.

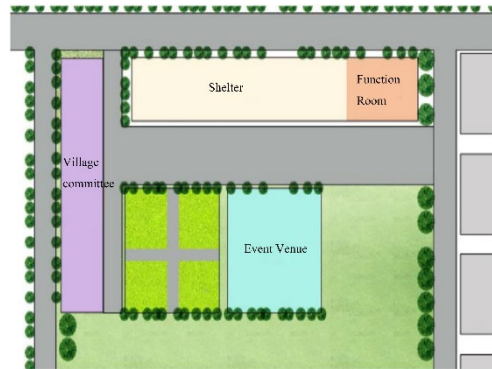


Figure 5: Rural Well-being Center, Erquanjing Township, Zhangjiakou, Hebei, China



Figure 6: Henan Jiaozuo Dongshuizhai Village Rural Happiness Center

4. Research and Analysis of Rural Mutual-aid Elderly Facilities

4.1 Rural Mutual Aid Elderly Facilities and Rural Mutual Aid Elderly Communities

Rural eldercare mutual facilities are grounded in the village context, intimately linked to spatial characteristics and living conditions. Rural mutual-help pension models, tailored to China's rural pension landscape, are evolving into new pension facilities. They provide food, entertainment, communication, health care, and other services to rural homeless seniors within a centralized setting [9]. This model targets semi-self-sufficient rural homeless seniors, emphasizing mutual support, resource sharing, and equal autonomy. Such senior living is more economical, efficient, inclusive, and sustainable. In contrast, rural self-help retirement communities increase independence, minimize living space size, limit unit boundaries, and strengthen inter-unit connections.

4.2 Interaction of the three spatial systems

Rural mutual-help elderly care facilities are not independent entities; they are intricately entrenched within the rural village landscape, leveraging the collaborative efforts of their elder care community. The progression from rural village to elderly care community to facility heightens site cohesion, promotes reciprocal behaviors, and establishes an active and sustained reciprocal care model within the facility's structure. The three-tiered spatial system of reciprocity facilities, communities, and landscapes is interconnected, allowing individuals to shift freely and communicate efficiently, promoting the naturally

occurring occurrence of reciprocal behaviors. The evolution of the reciprocal elderly care system is a dynamic process of continuous advancement, spanning from the internal environment to the external, and vice versa [10], as shown in Figure 7.

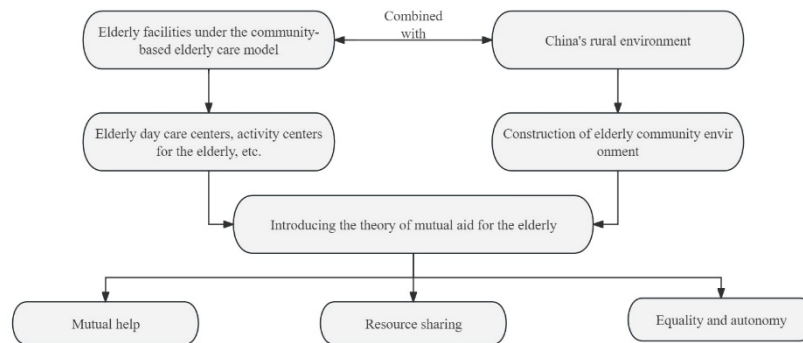


Figure 7: Conceptual Analysis of Rural Mutual Aid Elderly Facilities

5. Problems in the construction of village mutual-help-type elderly care facilities

5.1 Functionality and the construction of mutual aid

Rural mutual-help care homes serve as a significant platform for empty-nesters to engage socially, promoting activities focusing on functionality and mutual assistance. This paper provides an overview of these facilities' integral spaces, including living units, bathroom spaces, dining areas, therapeutic/fitness areas, recreational spaces, relaxation/communication zones, and exterior activity facilities.

The rural elderly require vital living units, bathroom spaces, dining areas, and sleep quarters, along with toileting amenities and eating/drinking facilities. Satisfying these needs is fundamental to their security and quality of life in retirement. Notably, they express a substantial need for treatment/fitness spaces, recreational spaces, etc., expressing keen interest in maintaining physical health and seeking leisure and amusement [11, 12].

When exploring spatial accommodations for mutual aid activities, interviewees favored recreational spaces, dining areas, and outdoor activity facilities. These communal spaces offer greater conveniences for mutual help interactions. Moreover, relaxation/communication areas, therapeutic/fitness areas are suitable for comfortable and quiet interactions. The elderly are open to conducting mutual aid activities autonomously.

5.2 Configuration positioning of functional spaces

Through assessing feedback from seniors regarding the magnitude of life needs for various functional spaces and mutual aid activities, it is evident the elderly prioritize the dining area's functionality and mutual aid capacity. Therapeutic fitness, recreational, and outdoor spaces are vital for the rural empty-nester elderly's mutual aid life during twilight years. Furthermore, the resting, communication, and sanitary spaces contribute greatly to the interactivity of their lives.

Hospices should emphasize the functional design of dining, therapy, fitness, recreational, and outdoor spaces, emphasizing overall well-being and independence. To enhance integration with the rural community, incorporating hospices into elders' residential areas is recommended. Building appropriate numbers of living units for empty-nesters while constructing these facilities is necessary [13]. Consider integrating open-air spaces with living units for relaxation during the day.

6. Operations & Planning

Rural Mutual-Help Pension Structure should accompany a Rural Mutual-Help Pension Community System, constructed simultaneously to fortify the rural mutual-help pension atmosphere, concentrate on original communal behaviors and investigate autonomous and proactive modes, with the rural mutual-help pension facilities fitting a small-scale, multi-functional, and agile model for seamless operations.

To satiate the desires of rural community seniors, it's crucial to foster their participation in designing and constructing rural mutual-help senior living establishments and communities. This involvement can ensure designs align with their unique tastes, fulfilling the specific needs of elderly individuals [14].

The preparatory stages include:

1) Install a specialized rural mutual-help senior living development agency by the state. This agency should execute a feasibility analysis for a specific territory, liaise with local authorities and elderly service organizations, and aid in compiling a rural mutual-help senior living facility blueprint.

2) Engage professional architectural designers in the structural design. Their expertise can aid in devising innovative, age-friendly designs. Moreover, thorough research should be executed to collect user preferences and motivate local villagers to partake in the design decision-making process.

3) Arrange seminars for future residents to collaboratively devise facility operation policies and rules. This ensures the facilities' enduring and effective operations long-term.

By integrating these stages, we can consequently improve the satisfaction and quality of life of rural elderly citizens.

7. Conclusion

To address China's unique challenges in rural eldercare, it is essential to establish appropriate connections between rural mutual-aid eldercare facilities and domestic dynamics. Possible strategies include:

1) Implementing a "government-led, multi-party collaboration" approach to develop rural mutual assistance and elderly care systems. This entails assigning responsibilities for system development and strategic policy guidance. Private enterprises and social organizations should be encouraged to participate. Developers, under government regulations, should take the lead in initiating development and construction efforts.

2) Leveraging existing infrastructure, including making architectural modifications, enhancing community centers, and utilizing institutional and societal donations for the maintenance of public facilities. A variety of funding methods should be employed to ensure smooth facility operations.

3) Ensuring adaptability and diversity in rural mutual care facilities. Given the vastness of China's rural landscape, diverse economic and cultural norms, and distinct regional characteristics, it is imperative to design a practical mutual assistance facility construction program that can accommodate localized needs[15].

4) Strengthening the comprehensive development of rural mutual aid pensions. Specific functional details of mutual aid facilities should be thoroughly examined, indicators standardized, and the entire rural pension system continuously refined to facilitate sustained development progress.

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