

Innovative design of community care services based on the concept of environmental sustainability

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Abstract: China's rural elderly population continues to grow, and rural elderly care faces more severe challenges than cities. The rapid growth of rural demand for elderly care services means that more resources are needed, and the process of depletion of a large amount of resources inevitably has an adverse impact on the environment. The green development and sustainable design concepts proposed in the design field can reduce the waste of resources and reduce the greatest impact of humans on the environment, and promote the harmonious development of man and nature. Therefore, this article applies environmental sustainability concepts and service design concepts to rural community elderly care services, to innovate the existing community pension service system. Based on the analysis of the behavior and demand characteristics of the elderly in rural areas, this paper proposes an innovative design case of sustainable elderly care community service combining community resources with the full potential of the elderly, which provides reference and inspiration for the construction of an elderly care community service system in rural areas.

1 Preface

China's sixth census data shows: The aging of the rural population in China has reached 15.4%, the elderly population in rural China has exceeded 100 million, and the rural elderly population continues to grow at a rate of 3.2% every year^[1]. At the same time affected by social changes and other factors. Young and middle-aged people go to big cities, causing family care to lose their dominant position. The content of elderly care services is out of touch with the actual needs of the elderly, low quality of elderly care services brings more challenges to rural elderly care. Rural community elderly care has been developed in rural areas in recent years and has achieved good results. There are promising ways to develop community pensions in rural areas.

Many scholars have conducted multi-level research on community care. Wang yang^[2]proposed research on the design of community elderly care services driven by green consumption. And put forward specific measures. Li yajun^[3]From the demand level, the community + home integrated elderly care service model was proposed and the feasibility of the model was verified. Chen chaojie^[4]apply the concept of community collaboration to community elderly care services to improve the welfare of the elderly in the community. Yuan xin^[5]based on the characteristics of rural development, carried out research on the exploration of rural "integrated-grid" pension

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model. However, the existing research pays little attention to the potential of the elderly in rural communities, failure to make good use of the human resources of the elderly. Therefore, this article intends to construct rural community elderly care services from the perspective of environmental sustainability, based on tools such as observation methods and user journeys, in order to build a green and sustainable rural community elderly care service system.

2 Analysis of the needs and behavior of the elderly

Clayton. Alderfer put forward a new theory of human needs: ERG theory. The theory believes that people have three core needs, growth and development needs, survival needs, and mutual relationship needs. The coexistence of the three levels of needs. As the living standards in rural areas become more abundant, it is not only necessary to consider meeting the basic living needs of the elderly. The needs such as interpersonal communication, self-realization, and social participation should be paid more attention to.

2.1 Identify target users

The classification standards of the elderly in my country are: 45-59 years old is the pre-senile period, that is,

middle-aged elderly;60-89 years old is the old age, that is, the elderly;90-99 years old is the longevity period; Longevity [6]. This article focuses on the middle-aged and elderly groups of 45-59 and 60-89.

The health status of the elderly is different. According to the actual ability of the elderly, targeted services can be provided to better meet the needs of the elderly. This article uses structured observation method and non-participatory observation method to collect elderly data. Select 2 villages in each of the 6 towns in Panzhihua City. A total of 300 elderly people were observed for twelve hours of behavior every day. On a certain day (except holidays), a certain village is selected, and the behavior, location, and status of the target elderly in the village are recorded in detail every 30 minutes from 8:00 to 20:00, and the life behavior data of 300 elderly people are obtained. Each elderly person observed about 25 times on average, and observed a total of 10258 behavioral information data in 12 days, including behavioral content, perception and communication ability, location, time, etc.

The comprehensive ability levels of the elderly are

divided into four categories, as shown in Table 1. There are 15 people in the first category (5%). These elderly people are severely impaired in their ability to take care of themselves and participate in society. The second category of 20 people (6.7%), the mental state of this type of elderly is slightly impaired, and the rest are moderately impaired, such elderly people have poor comprehensive ability. There are 63 people in the third category (21%). The same characteristics of this type of elderly are moderately impaired in perception and communication, and the other three are mildly impaired. This type of elderly has good comprehensive abilities and can complete most of the self-care events. The fourth category of 202 people (67.3%), except for the mildly impaired mental state, the other three items are in good abilities. Such elderly people have excellent comprehensive abilities, can take care of themselves in daily life, and possess good communication and social participation skills. Good mental state, able to actively use old-age resources to meet their own needs. Through the analysis of the comprehensive abilities of the four types of elderly, the target users are identified as the third and fourth types of elderly groups.

Tab.1 Comprehensive ability level category for the elderly

Comprehensive ability level	Type 1	Type 2	Type 3	Type 4
Social participation	Severely impaired	Moderately impaired	Mildly impaired	Ability intact
Mental state	Moderately impaired	Mildly impaired	Mildly impaired	Ability intact
Perception and communication	Moderately impaired	Moderately impaired	Moderately impaired	Slightly damaged
Self-care ability	Severely impaired	Moderately impaired	Mildly impaired	Ability intact

2.2 Target user journey analysis

Analyze and sort the content of the behaviors of the elderly, and divide the behaviors of the elderly into necessary behaviors, labor behaviors, leisure behaviors, social behaviors, care behaviors, and other behaviors. Necessary behaviors take up the most time, which are

about 37/100 of preparing meals, excretion, cleaning, and sleeping. Labor behavior(1/4) is working, going to the land, feeding livestock, etc. Leisure behavior (4/25) is in a daze, watching TV, nap, and walking. Social behavior mainly includes talking with people, going to fairs, banquets, etc. Caring behavior takes the least time, as shown in figure 1.

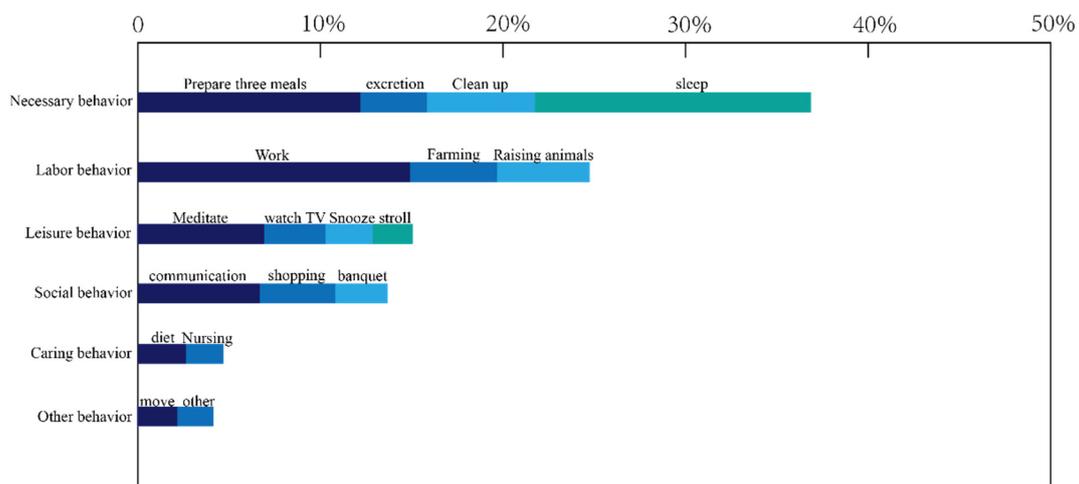


Fig.1 Daily life behavior analysis

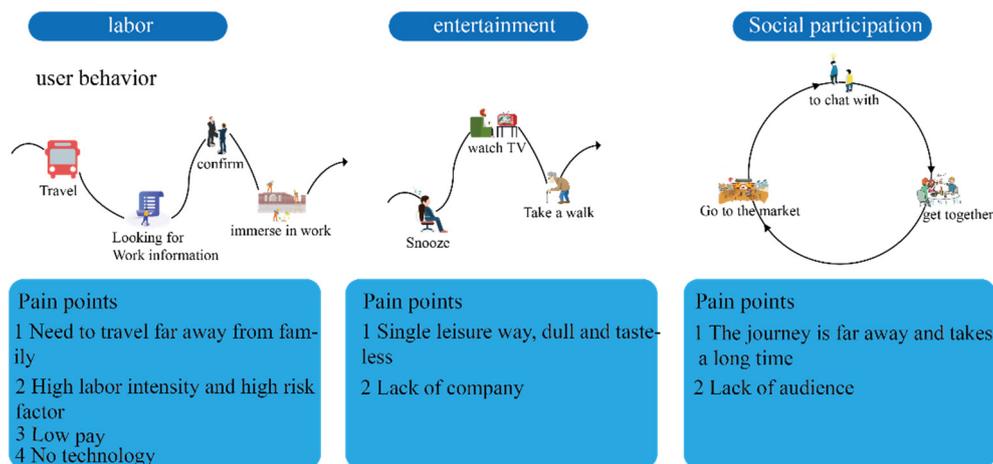


Fig.2 User journey

As shown in figure 2, it is found that the behaviors of the elderly are mainly concentrated in the three aspects of labor, entertainment and social interaction, and use this to build a user journey map, discover pain points and explore opportunities for design intervention. Based on the above three dimensions of user journey analysis, it is found that these three aspects of service supply are imperfect in rural elderly care communities. The vast majority of middle-to-low-age elderly in rural areas usually have the habit of doing odd jobs to subsidize households or doing farming, and they face difficulties in finding jobs and lack of technical guidance. In terms of leisure and entertainment, the model is single and there is no dedicated place. The social aspect is the lack of companions with common interests and the problems of seeing friends too far away.

2.3 Service Design Strategy

This article combines the sustainable development concept of "the elderly as a resource" with the design of rural community elderly care services, that is, to reduce unnecessary use of resources, while making use of neglected elderly human resources. With this as the guiding ideology, establish three service subsystems and give full play to the value of each subsystem. Carry out rural elderly care services centering on the initiative and enthusiasm of the elderly. Carry out the concept of sustainable development for the elderly in the community and realize the value of the elderly.

(1) literacy learning. Improving the cognitive ability of the elderly through literacy can reduce the risk of mental illness. Count and integrate the skills resources of the elderly, and coordinate the skills exchange activities between local students and the elderly in the community.

(2) Skills Training. Provide skills training resources for the elderly in rural areas, let them have the skills to achieve re-employment, improve agricultural production efficiency, and increase income generation for families. According to the needs of the elderly, different skill

training theme activities are held regularly in the community.

(3) Increase social participation. Actively gather elderly people with common interests in the community, so that this part of the sticky group can establish a relationship of mutual trust. To guide this type of elderly to make positive affairs such as rural environmental management, helping the elderly in difficulties and other activities. Provide a platform for rural elderly people to use their waste heat and realize their own value.

3 Rural community pension service design

Through behavior observation and user journey analysis, we found design opportunities and existing pain points, and proposed a case study of innovative design of rural community elderly care services. Make reasonable plans for the rural community old-age service system, integrate the resources of local schools, related enterprises, and government departments in rural areas to provide corresponding service content for the rural elderly to connect with the needs of the elderly, so as to efficiently use the community service system. Carry out design research from the perspective of community function construction and stakeholder analysis.

3.1 Stakeholder analysis

In the service design process, it is necessary to clarify the stakeholder involved in the service and the importance of the stakes of different types of stakeholders to the service. The analysis of stakeholders in the community service system can objectively evaluate the service value created by each stakeholder and ensure the feasibility of the entire service system. All stakeholders coordinate and cooperate, and share information with each other, as shown in table 2.

Tab.2 Stakeholder analysis

related resources	main body	effect	Interest relevance	Duty
Community resources	government village committee community	Formulation and regulation	Most relevant	Operation and management rules Site construction and supply Supervision and supervision
community resource	school Pension enterprise Technology Department	Resource supply	Highly related	Learn and teach
Personal resources	Friends, residence, family	beneficiary	Relevant	Publicity, supervision Support companionship
Internet resources	Elderly Information Database	Resource linker	Low relevance	Convenient to contact Information management

3.2 Rural elderly community service design

As shown in figure 3. The community service system consists of three subsystems. In the labor service subsystem, the common behavior of rural elderly people to work and farm is the point of opportunity. The community guides elderly care companies and agricultural and forestry technology departments to settle in, and provide professional nursing skills and agricultural and forestry technical training services in the community. The elderly can go to the community to register and learn according to their own needs. After passing the qualification, they can provide elderly care services for the elderly in need. In this way, it not only solves the needs of the elderly to increase their income, but also meets the needs of the elderly with elderly care services. Elderly people with agricultural needs can learn new agricultural techniques to improve production efficiency.

In the entertainment service subsystem, the past passive entertainment methods for the elderly, such as sitting in a daze and wandering aimlessly, are transformed into a proactive entertainment mode. There are illiterate groups and lack of companionship among the existing rural elderly. The government encourages local schools to participate in literacy and skill exchange activities for the elderly. The community actively promotes and attracts the elderly to participate in literacy activities with students as "teachers", and popularizes basic culture and common sense for the elderly. At the same time, let the elderly share traditional craftsmanship, knowledge, experience, etc. with middle school students, in exchange for middle school students to teach the elderly to use smart phones,

WeChat and other practical skills.

In the social participation service subsystem, with interest as the link, a group of elderly groups with the same interests are gathered in the community to form an elderly volunteer team. The community organizes voluntary teams for the elderly to carry out activities such as environmental governance or helping the elderly in need in rural areas. During the activity, the elderly can expand social relationships, contribute to building a better environment, and help others at the same time. Improved the ability of the elderly to participate in society and enriched their lives.

4 Conclusion

The sustainable design concept is an important path to solve the harmonious development of environment, economy and society in the future, and it is also an inevitable trend of future industrial development. This article cuts into the construction of rural elderly community services from the perspective of environmental sustainability, and based on the actual needs of rural elderly, proposes the use of elderly-centered design strategies and innovative community service models. The use of value co-creation and mutual cooperation between all stakeholders can achieve the goal of releasing the lipstick benefits of the elderly and achieving a win-win situation for all parties. This research optimizes the rural public lifestyle, promotes the innovation of rural elderly care service models, and provides reference and inspiration for the construction of elderly care services under the concept of environmental sustainability.

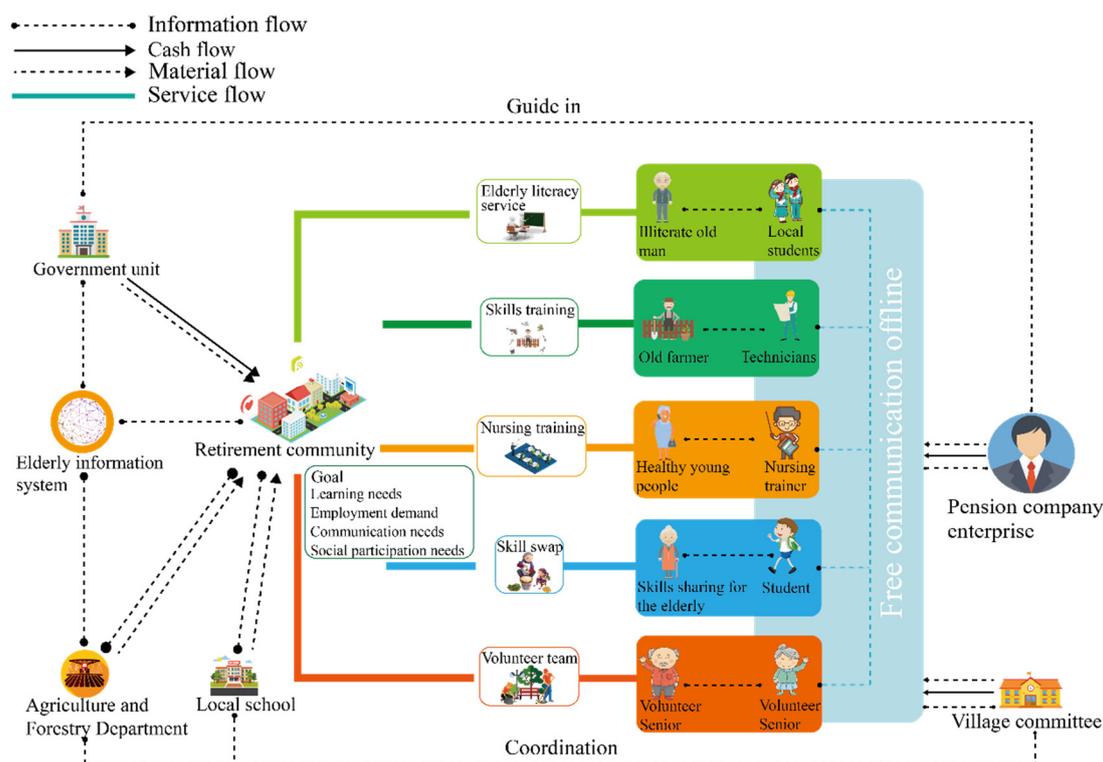


Fig.3 Service system

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