

Spatial Planning and Design Strategy of Old-age Community Based on CCRC Model

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Abstract: This paper discusses the spatial planning and design strategy of the old-age community based on CCRC (Continuing Care Retirement Community) model. Firstly, this paper introduces the concept and characteristics of CCRC model, and expounds the importance of CCRC model in the old-age community. Then it analyzes the basic principles and objectives of the space planning and design of the old-age community; Finally, it puts forward the spatial planning and design strategy of the old-age community based on CCRC model, including overall planning, architectural design, interior design and landscape design. Residential space is an important place for the elderly to live and live, and public space is an important place for the elderly to communicate, entertain, study and other activities, which need to be rationally planned and designed according to the actual needs and usage habits of the elderly. It is hoped that through the research of this paper, some useful ideas and methods can be provided for the spatial planning and design of the community for the aged in CCRC mode, and the construction level of the community for the aged can be promoted, so that more elderly people can enjoy their old age in a comfortable, safe and convenient environment.

1. Introduction

With the increasingly prominent problem of population aging, providing for the aged has become a social issue of great concern[1]. How to provide a comfortable, safe and convenient environment for the elderly is one of the urgent problems in the current society. In this context, CCRC model, as a practical model of comprehensive care for the elderly community, has gradually attracted people's attention[2]. In the CCRC model, spatial planning and design has a vital impact on the quality of the old-age community and the quality of life of residents[3]. Therefore, this paper aims to explore the spatial planning and design strategy of the old-age community based on CCRC mode, in order to provide some reference for the future construction of the old-age community.

The CCRC pension model integrates various pension models such as institutional pension and community pension. In the CCRC pension model, elderly people in need can pay to live in the community, and when they can take care of themselves, they don't need to take care of them[4]. There are restaurants, supermarkets and various entertainment venues in the community, and the elderly can continue to live in familiar environments and get care and nursing services corresponding to their physical conditions[5]. This model can provide the elderly with living facilities and services that integrate self-care, mediation and assistance, so that the elderly can continue to live in a familiar environment when their health status and self-care ability change, and better meet the needs of the elderly for the elderly.

The spatial planning and design of the community for the aged refers to providing a comfortable, safe and convenient living environment for the elderly through the rational planning and design of buildings, landscapes, public spaces and other elements in the community for the aged[6]. The quality of space planning and design directly affects the quality of life, health and psychological feelings of the elderly. Therefore, when implementing the CCRC model, it is essential to address the urgent issue of formulating a reasonable spatial planning and design strategy. This will enable the community to fully utilize the function and role of space and enhance the living quality and quality of life of the elderly in the current community construction for the aged. In this paper, some

reasonable spatial planning and design strategies and suggestions will be put forward through the practice and research on the spatial planning and design of the old-age community under CCRC mode. In this paper, residential space, public space, environmental facilities and other aspects will be discussed in depth, in order to provide some valuable reference for the future construction of the elderly community.

2. The importance of CCRC model in the old-age community

First of all, the CCRC model is a comprehensive and continuous care model, emphasizing the provision of housing, care, nursing and medical services in the same area[7]. This integrated design makes life more convenient for the elderly, and they can enjoy all-round services without moving from place to place for many times. Secondly, the CCRC model attaches importance to individual demand satisfaction. It does not force all the elderly to accept the same way of providing for the aged, but allows them to choose different service types according to their own needs and preferences. This not only meets the individual needs of the elderly, but also helps to improve their quality of life. Thirdly, CCRC model is helpful to social communication and the formation of community cohesion. Because the elderly live in a relatively concentrated environment, they have more opportunities to communicate socially and share their life experiences and happiness. This not only helps to improve the mental health level of the elderly, but also helps to form a good atmosphere of mutual help and love in the community[8]. Finally, the CCRC model can provide all-round care services through cooperation with multi-professional teams. This interdisciplinary cooperation can effectively integrate various resources and provide comprehensive, efficient and coordinated services for the elderly. The concept of space planning for the aged community based on CCRC mode is shown in Figure 1.



Figure 1 Concept of spatial planning of old-age community based on CCRC model

Generally speaking, the importance of CCRC model in the old-age community is reflected in the following aspects: providing comprehensive and continuous care services, meeting individual needs, promoting social exchanges and the formation of community cohesion, and providing all-round care services. This model fully embodies the concept of taking the elderly as the center, and truly meets their living needs, thus improving their quality of life.

3. The role of spatial planning and design in the community for the aged

This paper holds that we should understand the significance and value of spatial planning and design itself, and then analyze how these functions promote the development of the old-age community and improve the quality of life of the elderly. First of all, good spatial planning and

design can improve the overall environmental quality of the old-age community. Reasonable spatial layout and elegant landscape design can not only beautify the community environment, but also improve the comfort of the elderly. For example, a community with sufficient greening and high-quality landscape design can provide a pleasant living environment for the elderly and help them enjoy life better[9]. Secondly, spatial planning and design has a positive impact on improving the quality of life of the elderly. Spacious public space, convenient traffic streamline, comfortable rest area and other design elements can provide convenience for the daily life of the elderly. When the elderly enjoy a more comfortable and convenient living environment, their quality of life will also be significantly improved. Thirdly, spatial planning and design is helpful to promote the social communication of the elderly. The design of public spaces, such as lounges, activity rooms and gardens, should encourage the interaction and communication of the elderly [10]. By sharing space and activities, the elderly can build more social networks, reduce loneliness and enhance their sense of community belonging. Finally, safety and accessibility should be considered in space planning and design. Because the physical function of the elderly is relatively weak, we should fully consider how to ensure their safety through the physical environment in the design process. For example, provide non-slip carpet, provide emergency call system, etc. In addition, all public areas and facilities should be made friendly to wheelchair users to meet the requirements of barrier-free design.

Therefore, the role of spatial planning and design in the community for the aged is mainly reflected in improving the environmental quality, improving the quality of life, promoting social communication and ensuring safety and accessibility. A well-designed community for the elderly can not only provide a livable environment for the elderly, but also add color to their lives and help them achieve the goal of "providing a sense of security and happiness for the elderly".

4. Spatial planning and design strategy of old-age community based on CCRC model

4.1. Principles and methods of strategy formulation

This section provides guidance and basis for formulating strategies by analyzing the characteristics of CCRC model and the needs of the old-age community. First of all, the following basic principles should be followed in formulating strategies: (1) People-oriented, that is, we should fully consider the physical and psychological needs of the elderly and create a comfortable, safe and convenient living environment for them. (2) Sustainability, that is, the sustainable development of the environment and communities should be considered in the formulation of strategies, so as to make full use of resources and reduce environmental impact. (3) Diversification, that is, it should meet the diversified needs of different elderly people and provide a variety of services and activities. The fourth is safety, that is, the safety of the elderly should be ensured, including building structure safety, traffic safety, fire safety and so on.

The main methods of formulating strategies are as follows: (1) Demand analysis, that is, through investigation and research, to understand the needs and expectations of the elderly, so as to guide the direction of spatial planning and design. (2) Data collection: Relevant design data and cases should be collected, compared and analyzed, and useful design elements and methods should be extracted. (3) Teamwork, a multidisciplinary design team should be established, including architects, landscape designers, interior designers, etc., and the best design strategy should be formulated through collaboration and discussion. (4) The formulation of the strategy should be combined with the actual situation, considering the feasibility and operability. The design goal should be achievable and the strategy should be operable, so as to really provide effective guidance and support for the spatial planning and design of the old-age community.

4.2. Integration of CCRC model and other pension models

With the continuous development and changes of the pension market, CCRC model can be combined with other pension models to provide more comprehensive and flexible pension services. The details are as follows: (1) CCRC model can be integrated with rehabilitation and pension model.

The model of rehabilitation for the aged pays attention to the physical rehabilitation and mental health of the elderly, and provides professional rehabilitation services and care. Combining CCRC model with rehabilitation model can provide more comprehensive services in the old-age community and meet the different needs of the elderly. (2) CCRC model can be integrated with joint pension model. Joint pension mode is a way to provide mutual assistance and cooperation for the elderly by integrating various resources. By combining the CCRC model with the joint pension model, we can make better use of resources and improve the efficiency and quality of pension services. (3) CCRC mode can be integrated with intelligent pension mode. Intelligent old-age care model provides intelligent and personalized services for the elderly by using advanced information technology. Combining CCRC mode with intelligent pension mode can improve the quality and efficiency of pension service and provide a more convenient and comfortable living environment for the elderly. (4) CCRC model can be integrated with mutual support for the aged model. The model of mutual support for the aged realizes self-management and self-care through the mutual help and support of the elderly. Combining the CCRC model with the mutual support model can better meet the diversified needs of the elderly and improve their social participation and quality of life. Table 1 shows the integration of CCRC model and other pension models.

Table 1 The integration of CCRC model and other pension models

Pension model	Convergence of CCRC mode	Advantage	Disadvantage
Rehabilitation pension model	CCRC mode can be combined with rehabilitation mode to provide comprehensive rehabilitation services for the aged.	Provide professional rehabilitation services to meet the physical rehabilitation needs of the elderly.	Rehabilitation facilities are heavily invested and need professional services.
Joint pension model	CCRC mode can be combined with joint pension mode to realize resource sharing and improve the efficiency of pension service.	Share resources and reduce the cost of old-age care services.	It is necessary to establish a good coordination and management mechanism.
Intelligent pension mode	CCRC mode can be combined with intelligent pension mode to improve the quality and efficiency of pension services.	Use advanced technology to provide convenient and personalized services and improve service efficiency.	It needs to invest a lot of money in technology research and development and equipment renewal.
Mutual support pension model	The CCRC model can be combined with the mutual support model to realize the self-management and self-care of the elderly.	Improve the social participation and care ability of the elderly and reduce the social burden.	It is necessary to establish a perfect system and mechanism to protect the rights and interests of the elderly.

The combination of CCRC model and other pension models can form a more diversified, comprehensive and flexible pension service model. This integration will help to meet the different needs of the elderly, improve the quality and efficiency of old-age care services, and promote the development and progress of old-age care in China.

4.3. Spatial planning and design strategy

First of all, space planning and design should pay attention to aging design. Aging design is designed for the physiological and psychological needs of the elderly, aiming at improving the quality of life and safety of the elderly. In the old-age community, the aging design should run through all aspects, including building structure, interior decoration, furniture supplies, public facilities and so on. For example, non-slip carpets, wheelchairs and other facilities convenient for the elderly can be set up to ensure the safety and convenience of the elderly. Secondly, spatial planning and design should focus on functional design. Functional design refers to the design

according to the different needs and purposes of the elderly. In the community for the aged, the functional design should consider the needs of the elderly such as residence, catering, medical care, care, entertainment and so on. For example, apartments suitable for wheelchair users, catering services and medical facilities suitable for the elderly, and activity centers and libraries suitable for the elderly can be set up. Thirdly, spatial planning and design should pay attention to communicative design. Communicative design refers to promoting the communication and interaction between the elderly and others through design. In the community for the aged, communicative design can be realized through public space, social activities and service facilities. For example, common rooms and activity rooms can be set up to provide places for the elderly to communicate and interact. In addition, various social activities and interest groups can be organized to promote mutual understanding and exchanges between the elderly. Finally, space planning and design should pay attention to humanistic design. Humanistic design refers to the design that pays attention to the cultural background and spiritual needs of the elderly. In the community for the aged, humanistic design can be realized through cultural activities, artistic expression and landscape design. For example, restaurants and activity rooms suitable for different cultural backgrounds can be set up to provide multicultural entertainment activities and artistic performances.

4.4. Optimization and development of spatial planning and design strategy

This section provides guidance and suggestions for the continuous optimization of spatial planning and design strategies by analyzing the development trend of CCRC model and the demand changes of the old-age community. Table 2 shows the application of the spatial planning and design strategy of the old-age community based on CCRC model.

Table 2 Application of spatial planning and design strategy for the aged community based on CCRC model

Design strategy	Application situation	Example
Aging design	The aging design is widely used in the community for the aged to provide a comfortable, safe and convenient living environment for the elderly.	Anti-skid carpets, wheelchair ramps, beds with adjustable height, handrails and other aging facilities shall be provided.
Functional design	Set up various functional spaces in the old-age community to meet the diverse needs of the elderly.	Set up apartments and multi-functional activity rooms suitable for different age groups and physical conditions.
Communicative design	Through the design, the communication and interaction of the elderly can be promoted, and the community cohesion and sense of belonging can be enhanced.	Set up common rooms and activity rooms, organize interest groups and social activities.
Human culture design	Pay attention to the cultural background and spiritual needs of the elderly in the community for the aged, and enhance their cultural identity and spiritual sustenance.	Design multicultural activity rooms and provide multicultural entertainment activities.

First of all, spatial planning and design strategies should pay attention to the dynamic needs of the elderly. With the passage of time, the needs of the elderly will change, and the strategy should be flexible and adjustable to meet these changes. For example, with the changes of the health status of the elderly, spatial planning and design should be able to adapt to different nursing levels and service needs. Secondly, the strategy should be optimized with the development of science and technology. With the progress of science and technology, many new technologies and means can be used to improve the spatial planning and design of the old-age community. For example, intelligent care system can improve the efficiency and quality of services, while technologies such as virtual reality and augmented reality can provide new social and entertainment ways. Thirdly, the strategy should focus on the sustainable development of the community. In addition to meeting the needs of the elderly, space planning and design should also consider the long-term development of the community and how to use resources more effectively. For example, we can reduce the

environmental impact by designing energy-saving buildings and adopting renewable energy, and at the same time, we can improve the sustainability of communities by optimizing traffic flow lines and providing shared facilities. Finally, the strategy should focus on the combination of design and culture. In the process of formulating the strategy, we should fully consider the local culture and the cultural background of the elderly, so as to make the space planning and design more local characteristics and humanistic care.

The optimization and development of spatial planning and design strategies mainly include paying attention to the dynamic needs of the elderly, combining the development of science and technology, paying attention to the sustainable development of the community and paying attention to the combination of design and culture. Through continuous optimization and development strategies, we can better meet the needs of the old-age community and improve the quality of life of the elderly.

5. Conclusions

This paper discusses in detail the spatial planning and design strategy of the old-age community based on CCRC model. By analyzing the characteristics of CCRC model and the needs of the old-age community, a series of design strategies are put forward, including aging-adaptive, functional, communicative and humanistic design. These strategies aim to create a comfortable, safe, convenient and humanistic living environment for the elderly and improve their quality of life and happiness. In addition, it is found in the study that the integration of CCRC model and other pension models is an important trend in the future development of pension communities. This integration will help to meet the different needs of the elderly, improve the quality and efficiency of old-age care services, and promote the development and progress of old-age care in China. At the same time, cross-border cooperation and diversified services are the key factors for the development of the old-age community. By introducing new design concepts and technical means, we can constantly improve and optimize the spatial planning and design strategies of the old-age community, which can provide more high-quality, convenient and personalized services for the elderly.

Generally speaking, the research results of this paper provide useful guidance and reference for the spatial planning and design of the old-age community based on CCRC mode, and also provide positive ideas and methods for the development of the old-age cause in China. In the future, it is suggested to further study the integrated development of CCRC model and other pension models, and explore a more diversified, comprehensive and flexible pension service model, so as to meet the growing needs of the elderly population in China and promote the sustainable development of society.

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