

Preliminary Study on the Indoor Public Activity Space of Community Day Care Center for the Elderly

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Abstract. With the increasingly obvious trend of population aging, "how to provide for the elderly" has become a major problem faced by the government and the whole society. As one of the elderly care institutions in China, the community day care center for the elderly has received constant attention in recent years. By analyzing the psychological and physiological needs of the elderly in the indoor public activity space, this paper clarifies the basic design principles of the public activity space in the day care center and summarizes the public activity space strategies of the elderly in the day care center to create a safe and appropriate public activity space for the elderly.

1 Introduction

With the development of the economy and society, the aging population is increasing day by day, and the concept of providing for the aged modern people is gradually changing; The original home care is more and more inclined to community care. China's elderly care institutions mainly include nursing homes, elderly apartments, community day care centers, etc. The day care center is close to the community. It is a day care service facility that provides day care or full care services for the disabled and semi-disabled elderly who need partial care or cannot take care of themselves completely[1]. It is close to home for the elderly nearby, so it is convenient for their families to visit, and becomes the best choice for the elderly. In its indoor space, the public activity space is a gathering place for the elderly, and an important place for the elderly to communicate, read calligraphy and paint and carry out various activities.

2 Elderly people's demand for indoor public activity space

2.1 Psychological needs of the elderly

After entering old age, due to the decline of physical functions, retirement, and other reasons, people will experience many life changes. In addition, the elderly are slow to accept new things, their ability to adapt to the environment is gradually weakening, they pursue stability and comfort in life, and gradually break away from society, leading to a lack of psychological security. At this time, they are eager for more emotional companionship and communication. After retirement, the life circle of the

elderly will gradually become smaller and their social participation will be reduced, at the same time, their children may also be busy at work and unable to accompany them. These changes will bring loneliness and a sense of unevenness to the elderly[2], and there will be confusion and unbalanced ideas arising in their hearts. The elderly need to find new ways to realize their self-worth and gain a sense of identity and respect.

2.2 Physiological needs of the elderly

People are growing and aging from birth, and the physiological function of the human body will inevitably degenerate with the growth of age[3]. When people enter the old age stage, their physical mobility will become poor and their activities will be limited, meanwhile, their sensory system, nervous system, and immune system will decline, which means their physiological demand for space will increase. In the space environment, the elderly may be unable to see and hear clearly. Given this situation, we can enlarge the signs and images in the space, set up light sources to make the elderly comfortable, strengthen the care for the elderly in the space, and reflect the humanized design.

3 Design principles of public activity space in day care center

3.1. Safety principle

With the growth of age, the physical quality of the elderly is declining, and so are their physical functions, leading to their physical mobility inconvenience, which greatly increases the security risks of the elderly in indoor spaces.

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Therefore, the principle of safety in indoor spaces is the first. To ensure its safety in the design of public activity space, it is necessary to comprehensively consider the division of indoor space scale and the layout of various facilities and furniture from the perspective of ergonomics, we should not only pay attention to details but also make them conform to the ergonomics of the elderly and prevent accidents[4]. Attention shall be paid to barrier-free design, no elevation difference design on the ground, handrail installation on the wall, consideration of the passage problem of the elderly when sitting in wheelchairs, etc., and full consideration shall be given to the safety and protection design suitable for the elderly from all perspectives and aspects of their life and activities.

3.2 Comfort principle

At the same time as ensuring safety, there are more strict requirements for the comfort of the public activity space used by the elderly. In the design of the public activity space, attention is paid to the treatment of the indoor physical environment and the selection of decorative materials and colors. According to the living habits of the elderly, an environment suitable for their life is created. In the design of the physical environment, sound, light, indoor temperature, and other treatments are mainly considered. Due to the increase of age, various sensory functions and neural activities of the elderly gradually degenerate, and the hearing function of the elderly is becoming duller and duller. However, the sensitivity to noise is also greatly improved. In addition, the elderly sleep shallowly and are prone to neurasthenia. In the design of an acoustic environment, quiet should be given priority and reasonable sound insulation treatment should be carried out to reduce the interference of noise to the elderly. The lighting mainly includes the artificial light source and the natural light source. On the elderly's rest occasions, direct exposure to the natural light source to the elderly should be reduced as much as possible, and the shielding methods should be reasonably selected to avoid interference with the elderly's rest; In regular activity places of the elderly, based on taking natural light sources as the main and artificial light sources as the auxiliary, the sufficient balance of indoor illumination should be maintained, and the phenomenon of direct strong light and glare should be prevented, so that the elderly can be more comfortable when they are moving or reading in the space environment. In terms of indoor thermal environment treatment, it is necessary to ensure that the indoor temperature is appropriate. If the temperature is too high or too low, it is easy to cause diseases in the elderly. It is necessary to maintain indoor ventilation and air circulation. The choice of facilities should be based on the user habits and simplicity of the elderly to make it more convenient in the use process. A good hue makes the elderly feel stable and comfortable. Try to choose warm colors with high lightness and medium saturation[5].

3.3 Communicative principle

The indoor public activity space is a space with a high utilization rate in the elderly care facilities and a daily gathering area for the elderly. Therefore, while ensuring safety and comfort, it is also necessary to maintain communication between the elderly. The elderly will feel lonely when they are in a strange environment, but they will unconsciously interact with others in the public space environment, so we should increase the communication space for the elderly in the design of public activity space, creating a private or semi-private space through isolation to promote the communication between the elderly and help them no longer feel lonely.

3.4 Humanization principle

The humanized design should comprehensively consider the behavior habits of the elderly and combine their actual characteristics. The elderly often have the psychological characteristics of loneliness and emptiness. The warm atmosphere is reflected through the creation of a space environment, such as the placement of statues, hanging pictures, artworks, and other objects; The day care center sometimes holds various activities to display the works and activity photos of the elderly in the indoor environment, so that the elderly can feel the existence of their self-worth, and at the same time, the elderly can feel the sense of belonging and feel that the space they are in is warm and friendly like home. The design of the space environment should not only focus on communication but also emphasize privacy. The same is true for the setting of indoor public activity spaces. At the same time, privacy design should also be done for some spaces. This will make the elderly feel respected and reduce their exclusion from the environment[6].

4 Design strategy of indoor public activity space in day care center

4.1 Create perfect space functions

The division of public activity space in the community day care center should be diversified, taking into account the need to meet the elderly's leisure, entertainment, and fitness. The design needs to be based on the characteristics of the elderly's physical and mental behavior and spiritual needs. During the days when the elderly live in the day care center, they are more focused on the cultivation of interests, for example, the elderly who have a strong interest in learning like libraries, painting and calligraphy rooms, and other learning areas; we should also arrange fitness equipment and medical rehabilitation equipment for the elderly who love sports and have rehabilitation needs to achieve the purpose of physical fitness; Chess and card rooms and mahjong rooms can be reasonably arranged according to the actual situation. They can be properly arranged in wide corridors and open spaces to enhance the area of public activity space[7]. It is equipped with perfect public activity functions to meet the diversified needs of elderly care activities; In addition, it

should also be equipped with complete equipment and facilities to enhance the vitality of the space and facilitate the elderly to use it better.

4.2 Barrier free access construction

The road construction of the indoor public activity space of the day care center should ensure the free use of the elderly and ensure that the elderly who are in self-care and wheelchairs elderly can have access to the areas they need. Handrails should be added in indoor corridors and on the available walls to ensure that the elderly can walk continuously in the space (Fig.1). When organizing streamlining, unnecessary ground elevation differences shall be avoided as far as possible to keep the road flat and consistent. At the same time, it shall also be considered to avoid too much turning and blocking in space to affect the walking and traffic inconvenience of the elderly.

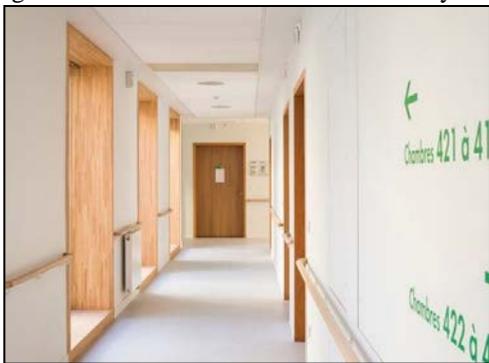


Fig. 1. Corridor handrail of nursing home for the elderly in Paris.

4.3 Create obvious signs

Vision deterioration is the most obvious symptom after entering the elderly stage. In the spatial environment, an obvious sign can help the elderly to identify and distinguish more clearly. The public activity space carries different functions of the elderly, such as daily life, social interaction, activities, and fitness, so the design of the logo should be paid more attention to, such as the page size, font size, color, and other aspects. For the logo system used by the elderly, the page size and font size should be expanded. Concerning the color selection, attention should be paid to the contrast between the page background and the font to achieve the purpose of a compulsive reminder(Fig.2).

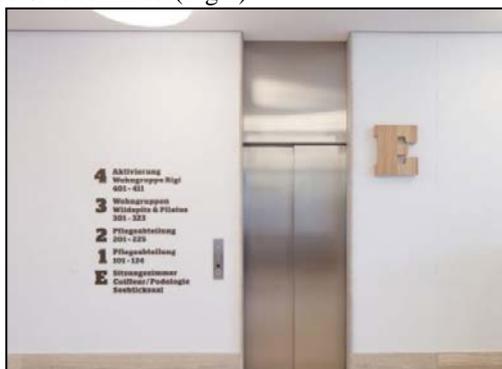


Fig. 2. Notre Dame Steinmatt Nursing Center Elevator Entrance Sign.

4.4 Create a comfortable boundary line

In the indoor public activity space, some spaces have complex functions, for example, the entrance hall has both the function of appreciation and the function for the elderly to rest and communicate; In the separation of public activity space, we can't rely on the wall alone to separate, and the strong separation will make the space appear narrow and crowded, and the space can't be used together; When dividing the space boundary, you can appropriately use furniture, soft partitions, green plants or change the pavement of the ground and other design techniques. In the selection of materials and colors, try to choose materials with a soft texture to create a warm atmosphere suitable for the elderly. A comfortable boundary division should be created, which not only helps to avoid the visual and noise interference between different spaces but also makes the boundary of the overall public space open and transparent.

4.5 Create a space environment with a sense of spiritual belonging

The psychology of the elderly will change with the decline of their physiological functions as well as the transition in their social roles. People in old age gradually enhance their self-consciousness. They are eager to be recognized by others. Their mentality is sensitive, often in a state of anxiety, with remarkable fluctuations[8]. The growth of age and the troubles of disease make them more and more dependent on their children. Therefore, they are used to staying in their familiar environment and have a strong sense of belonging. They reject and dislike entering a new environment, and it is difficult for them to integrate into the new life. Therefore, the community day care center needs to create a public activity space environment with a sense of spiritual belonging, and give the elderly a comfortable and pleasant feeling of home to improve their pessimistic psychological state and make them happy physically and mentally.

4.6 Build rich node space

Due to their special physical and psychological needs, the elderly are more likely to be able to communicate with people of the same age or experience. The indoor node style does not need to be large, nor does it need a high-cost design. What it only needs is to provide more diversified and multiple spaces to meet the elderly's demands of sitting down chatting or enjoying the beauty of a specific space in leisure time(Fig.3). Creating a good space atmosphere node can encourage the elderly to go out of the room to engage in social activities with others, make full use of space, and improve the overall space quality[8].



Fig. 3. LANKRY Retirement Home.

5 Conclusion

The public activity space is the place where the elderly gather daily, and it is the space where the elderly communicate, exercise, and entertain themselves together, these activities occupy most of their daily life. Taking the elderly as the entry point, this paper conducts an in-depth study on the public activity space of the day care center. By analyzing the physical and psychological needs of the elderly for the public space, this paper summarizes the basic design principles of the public activity space of the day care center and then gives strong corresponding design countermeasures, hoping to create a safe, comfortable, convenient and personalized public activity space for the elderly, helping them to quickly feel the atmosphere like home when entering a strange environment, reduce their loneliness and anxiety, and provide a reference value for the design of public activity space in the day care center.

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