Research on the Suitable Aging of the Communication Space of the Aged Institutions under the Background of Aging

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Abstract: Under the influence of the basic national policy of family planning, family pension is under great pressure, and institutional pension is a main way to solve the problem of population aging in China. Based on the theory of communication space, this paper analyzes the special physiological, psychological and behavioral characteristics of the elderly in two typical elderly care institutions in Chengdu, and explores the communication space design of urban elderly care institutions to adapt to China's national conditions.

1. Introduction

The aging of the population has become an inevitable trend in the development of the world's population structure. After the 1980s, the pace of China's population ageing is also accelerating. As of the end of 2018, there were about 249 million people aged 60 and above in China, accounting for 17.9% of the total population. And the problems brought about by the aging of China's population will be more serious than other countries.

Institutional pensions are considered a major way to address China's aging population. Under the influence of the basic national policy of family planning, the composition pattern of family members in China will form a general structural relationship of 4 + 2 + 1 or 2 + 2 + 1, which means that the dependency index will rise. Institutional retirement will be the choice of many families. [1]

However, China's elderly care institutions face more problems. By the end of 2018, there were nearly 30,000 elderly care institutions nationwide, with a total of 3.928 million beds in elderly care institutions, less than 1.6% of the current elderly population. [2] Moreover, the government has invested less funds in the elderly care institutions, the lack of social elderly care facilities, and poor facilities. In particular, the research on the design of the communication space for the special elderly care institutions is insufficient, and there are many problems.

2. Research content

This article conducts in-depth investigation and research on the behavioral activities of the elderly, the building space and environment of the nursing home. At the same time, based on the analysis of the special physiological, psychological, and behavioral characteristics of the elderly in urban nursing
homes, we explore an urban nursing home communication space plan that suits our national conditions.

2.1 Area of research
This article takes the communication space of urban nursing homes as the research scope, and studies the indoor communication space, corridor space, and outdoor communication space in the communication space of urban nursing homes. The types of nursing homes studied in the city are suitable for the elderly with an average income in the city. Popular state-owned, collective-run and private-run nursing homes are mainly located in Chengdu.

Therefore, the two cases selected are: Chengdu Jinniu District Respect for the Elderly Service Center and Chengdu Second Welfare Home. The reasons are as follows:

(1) The use of buildings is different and representative. The Retirement Service Center for the Elderly in Jinniu District was transformed from an old building; Chengdu No. 2 Welfare Home is a welfare home that has been in use for 58 years.

(2) The nature of operations is different and universal. Jinniu District Respect for the Elderly Service Center is an elderly service institution that raises funds and shares; Chengdu Second Social Welfare Institute is a comprehensive institution under the Chengdu Civil Affairs Bureau.

2.2 Research theory
This article uses the theory of communicative space as the supporting theory. Dan Geyer in Denmark classified outdoor activities in public spaces into three types in "Communication and Space": necessity activities, spontaneous activities, and social activities. Each type of activity has greatly different environmental requirements. Most of the residents in nursing homes are elderly people. The communication behaviors occurring here share both the commonness of communication and its particularity. Research on it is beneficial to the design of the communication space of nursing homes.

3. Field survey and analysis of the communication space of the elderly

3.1 Chengdu Jinniu District Respect for the Elderly Service Center

3.1.1 Selection of survey area
The physiological characteristics of the elderly in the nursing home determine that the elderly's central activity site should be close to the accommodation area, so the two main activity center areas (A) and the lake fishing leisure area (B) are mainly formed by surrounding accommodation buildings. There are three roads for the elderly around the two major activity areas, which are labeled as road a, road b, and road c for research purposes.

(1) Necessary activities: According to the records of interviews with the administrators of the nursing home D and the elderly, as shown in Table 1 below. The survey mainly counted the six essential activities of the Respect for the Elderly Service Center, which were "eating, watching TV, communicating before bedtime, bathing, sleeping habits, and testing." Outside the bath, other activities are basically necessary daily. The main environmental demands of these activities include anti-skid, anti-collision, anti-skid, light, and barrier-free factors.

| Necessary activities | Space     | Frequency | Environmental factors       |
|----------------------|-----------|-----------|----------------------------|
| Eat                  | Canteen   | Every day | Anti-slip                  |
| Watch TV             | Dormitory | Every day | Indoor light intensity     |
| Take a bath          | Dormitory | 2 times / week | Anti-slip, water temperature |
| Dormant habit        | Dormitory | Every day | Anti-noise                 |
| To the restroom      | Restroom  | Every day | Light intensity, barrier-free |

(2) Spontaneous activities: According to behavior observations and interview records of elderly people in nursing homes, as shown in Table 2 below. The survey mainly counted the seven types of
spontaneous activities of the Respect for the Elderly Service Center, which were “walking, sunbathing, fitness, playing mahjong, listening to radio, health massage, and mailing / reading newspaper / calling”. The main outdoor area of the area is also significantly different in the number of people with different types of activities. It often occurs with exchanges while generating spontaneous activities. The main environmental demands of spontaneous activities include weather, outdoor facilities, plant greening and other factors.

| Spontaneous activities    | Participant                      | Space          | Frequency          | Number of people |
|---------------------------|----------------------------------|----------------|--------------------|------------------|
| Take a walk               | Self-care/Referral elderly        | Road A or C    | 3 times / day      | 30 people        |
| Basking in the sun        | Self-care/Referral elderly        | Road A or C, balcony, corridor | 2 times / day | 135 people |
| Bodybuilding              | Self-care/Referral elderly        | Fitness area   | 3 times / day      | 35 people        |
| Play mahjong              | Self-care/Referral elderly        | Indoor/ corridor | 1 times / week    | 70 people        |
| Mail / pick up newspaper  | Individual elderly               | Entrance to the care Center | 2 times a month | 8 people |

(3) Social activities. According to the behavior observation records of the elderly in the nursing home, it is shown in Table 2 below. The survey mainly counted the four main types of spontaneous activities of the Respect for the Elderly Service Center, which were “greeting, stopping to talk, glancing, and shouting / nodding.” These types of activities are mainly accompanied by spontaneous activities In terms of social activities, the elderly group stopped with a few words to talk with each other, reflecting the psychological characteristics of elderly people's fear of loneliness.

| Social activities                          | Necessary and spontaneous activities                                      | Happening space                                      |
|-------------------------------------------|--------------------------------------------------------------------------|-------------------------------------------------------|
| Greet                                     | Eating / fitting / listening to the radio / shopping / with family or children | a / b road and fitness area                           |
| Stop talking                              | Walking / sunbathing / fitness / playing mahjong / mailing / retrieving newspapers / playing chess / feeding birds | a / b, fitness area and corridor                      |
| Glance                                    | Eat / basking in the sun                                                 | a / b road                                            |

3.2 Chengdu Second Welfare Home

3.2.1 Selection of survey area
The building complex of the Chengdu Second Welfare Institute generally forms an enclosed structure. The large area in the central area of the courtyard formed by the enclosure has become the main activity environment of the institution. This large area is mainly planned into two parts. The west side is area A, and the east side is area B. Area B is adjacent to the welfare area, health building, red leaf apartment, and public cafeteria. Three parallel roads are formed between this area and the buildings around the road, the road in the north section is B, the road in the middle is c, and the road in the south is A.

3.2.2 Analysis of the Elderly Communicative Activities
(1) Necessity activities. The necessity of the elderly has a strong consistency, and its activity type, frequency, and location have strong stability. Therefore, the necessary activities of the elderly group in the Second Welfare Institute of Chengdu can refer to Table 1 above, and will not be repeated here. Repeat enumeration.
(2) Spontaneous activities. Although the activity types of the spontaneous activities of the Chengdu
Second Welfare Institute are also roughly the same as the first case, but due to the difference in the communication space between the two elderly care institutions, the number of activities of the unified activity type is certain. The changes are detailed in Table 4.

| Activity type | Take a walk | Basking in the sun | Bodybuilding | Play mahjong | Listen to the radio | Play basketball |
|---------------|-------------|--------------------|--------------|--------------|---------------------|----------------|
| Number        | 50 people   | 120 people         | 10 people    | 55 people    | 16 people           | 4 people       |

4. Data analysis

4.1 Relationship between different spontaneous activities and elderly types

According to the survey data, the relationship between different spontaneous activities and the types of the elderly is summarized. It can be seen that the spontaneous activity of sun exposure has the highest degree of concern for different types of elderly people. Self-care elderly people, assisted elderly people and nursing elderly people can participate; while mailing / retrieving newspapers / calling and playing basketball. Spontaneous activities have the lowest degree of concern for different types of elderly people, and only self-care elderly people can participate. Sun exposure is a spontaneous activity that needs to be taken care of by the elderly. In this activity area, more attention should be paid to barrier-free design.

4.2 Comparative analysis of the number of spontaneous activities in the two elderly institutions

According to the survey data, a comparative analysis of the number of spontaneous activities of the two elderly institutions shows that the number of elderly people participating in fitness activities at the Chengdu Second Welfare Home is significantly less than that of the Chengdu Jinniu District Retirement Service Center. A further investigation of the communication space in the fitness area of Chengdu No. 2 Welfare Institute found that the fitness equipment did not take into account the physiological characteristics of the elderly, such as difficult fitness activities such as seesaws and plum piles, and the elderly could hardly participate. At the same time, the fitness ground overlaps with the road land, which becomes the only way from the entrance to the accommodation area. The centralized display of fitness equipment has caused the inconvenience of the elderly to walk daily, which has led to the obstruction of the spontaneous behavior of fitness. Secondly, the basketball court is not in accordance with the physiological conditions of the elderly, and there are very few elderly people in sports, which results in a waste of space.

4.3 Analysis of the proportion of necessary / spontaneous / social activities in different spaces

According to the survey data, by analyzing the proportion of necessity / spontaneity / sociality in different spaces, it can be seen that necessary activities of the elderly are mainly concentrated in indoor communication spaces, such as dormitories, toilets, bathhouses, etc. Therefore, these areas are the main places for the elderly to stay in their daily life.

The dormitories of the two elderly institutions have single rooms, double rooms and triple rooms. Most bedrooms are south-facing, with single beds concentrated by the window, and the beds are low to meet the elderly's physiological needs. But the room was not divided in any way, and the privacy was poor. The entire room is dominated by white tones, but the lights cannot be adjusted for brightness. There is no pager. The elderly people need to live together to help call the nurse. The bathroom is a common room, with an area of about 10 square meters, and staff have one-on-one help to clean it. However, non-slip floor tiles have not been laid and barrier-free design has not been carried out.

4.4 Analysis of the proportion of different communication situations in spontaneous activities

According to the survey data, by analyzing the proportion of different communication situations in spontaneous activities, it can be seen that the elderly prefer group or group activities. The elderly will be more actively involved in the activities of the group, and at the same time, they will reject the elderly
who are not in a group. There are three main factors for the elderly to form groups automatically: age, class, and personality; the secondary factors are: hobbies and gender. According to the survey data, the effect of the old crowd in chatting, playing chess, planting flowers, and bird raising has played a positive role in promoting the communication between the elderly; in the activities of eating, walking, sunbathing, and playing mahjong, the effect of the old crowd suppresses the elderly Old people outside the group participate in the interaction. [4]

5. Design Strategy for the Communication Space of the Aged Institution

(1) The activity place should match with the physical function of the elderly. For example, the basketball court set up by Chengdu No.2 Welfare Center is not in line with the physiological conditions of the elderly. The physical condition of the elderly determines that they are prone to fatigue and can not bear the characteristics of too intense sports. However, other units can be provided to hold competitions for the elderly to watch. This is a way for the elderly to actively participate in social activities, and make themselves feel involved in activities by watching others.

(2) Enhance the recognition of necessary space. Dormitory is an important communication space for the necessity and spontaneous activities of the elderly, but it is often not highly recognizable. Due to the decline of vision and memory and the slow establishment of new concepts, it is very difficult for the elderly to identify the direction or goal, especially the monotonous and repeated arrangement of the elderly dormitory and the fact that the old people are not allowed to pile up their own things on the corridor makes it very difficult for them to return to the dormitory. It is suggested to place familiar living objects at the entrance of dormitory, so as to enhance the recognition of space.

(3) Enhance the detail design of the activity site. Set up some landscapes in the public green space that are helpful to stimulate the life passion of the elderly, arouse the vitality of the elderly or arouse their beautiful reverie and mood through the association of scenery. The plaques, couplets, scenic stones, inscriptions, sculptures, architectural sketches, plants, etc. on the buildings can achieve better results.

6. Conclusions

Based on the analysis of the communication space between the two old-age institutions in Chengdu, this paper finds that there are many problems in these spaces, such as unreasonable allocation of sports facilities, low space identification, inadequate site detail design and so on. Institutional pension is one of the main ways to deal with the aging society. In view of the above problems, this paper puts forward corresponding optimization measures to provide solutions to the aging problem.

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