

Furniture Design under the Home Care Mode

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Abstract: In recent years, the aging population of our country has been increasing, and the design of aging furniture has gradually attracted the attention of all walks of life. The design of bedroom furniture has a more direct impact on the elderly. Based on the analysis of the special physiological and psychological state of the elderly, this paper summarizes the key considerations of bedroom aging furniture design from the angles of safety, intelligence and ease of use, and summarizes the design principles of aging furniture.

1. Introduction

On the one hand, the implementation of family planning policy reduces the fertility rate of our population; on the other hand, due to the rapid development of social economy, the elderly have better pension conditions, and the average life expectancy of the elderly has been greatly improved. Many factors have led to the reduction of the number of newborns and young adults in China, while the proportion of the elderly population is rising. Since 2002, China has gradually entered an aging society.

The bedroom is one of the necessities of the present family life. It is a room where the occupant sleeps, rests or engages in sexual activities. Bedroom furniture refers to the furniture placed in the bedroom. Bedroom furniture includes but is not limited to beds, mattresses, wardrobes, dressing Tables and bedside cabinets, as well as bedding and so on. Bedroom is the most private place in all rooms. The area of bedroom is about 20 square meters. The main function of bedroom is not only to provide a comfortable sleeping environment, but also to store things. A good bedroom furniture, especially a bed, can change a person's quality of life. Because of the physiological and psychological characteristics of the elderly, the requirements for bedroom furniture are higher.

2. Characteristics of bedroom furniture used by the elderly

2.1 Living habits of the elderly

According to the survey, the activity frequency of the elderly in the bedroom is the highest, especially in the middle of the elderly (who depend on walking sticks, wheelchairs and lifting facilities to help with their daily life behavior) and in the care of the elderly (who depend on other people to care for their daily life behavior). Data reports also show that the activities of the elderly in the bedroom accounted for 35.4% of the total time. Bedroom furniture is often touched by the elderly, so the design of bedroom furniture such as beds, bedside cabinets and so on is quite critical. Moreover, most elderly people suffer from sleep disorders such as insomnia to varying degrees, and good sleep can help the immune system of the elderly and ensure a healthy life. Therefore, the design of bedroom furniture for the elderly is the focus of suiTable old furniture [1].

2.2 Physiological characteristics of the elderly

Aging is a state, aging is the ineviTable process spontaneously with the passage of time. It is a complex natural phenomenon, manifested in the decline of structure and function, adaptability and resistance. Physiological aging of the elderly has an important impact on life needs and behavioral characteristics [2].

First, sensory function deterioration, the elderly suffer from presbyopia and cataract visual impairment is very large and common, visual system diseases will lead to visual impairment, can

not see things, especially in the weak light when using furniture is prone to accidents; for the environment temperature and humidity perception, cold and heat tactile discrimination will become weak, health is often subjected to unconscious conditions. To the impact of the environment. Older people's ability to respond to objective things will gradually deteriorate. Hearing acuity decreases and deafness may occur in the back of the ear.

Secondly, cognitive ability is weakened, including memory, emotion and so on. Old people's learning ability becomes weak and their thinking is slow. They are generally vulnerable to new things and have poor acceptance ability. Emotional instability weakens willpower and strengthens emotional dependence. Memory ability is obviously reduced, easy to forget, observation sensitivity is low, even the occurrence of Alzheimer's disease, brain atrophy, which will lead to more unsafe factors in life, the use of too complex furniture will be more laborious.

Thirdly, the ability to exercise decreases. The exercise strength, speed and accuracy of the elderly will decrease with age. Their bone mass, muscle volume and respiratory muscle strength will decrease. Therefore, their height will become shorter, and their cardiopulmonary function, body flexibility, exercise skills, balance ability and flexibility will decrease. It is prone to osteoporosis and fracture, and the control ability of the hand is weakened, so it is difficult to carry out high-precision activities. At the same time, leg strength is weakened, joint aging and stiffness, synovial fibrosis, squatting hard, serious cases need external support, such as wheelchair, crutches, walker, etc. [3].

2.3 Psychological characteristics of the elderly

In the stage of pedestrians' old age, because of the change of life style and physiological characteristics, the old people's psychology will be affected and affected.

First, because the elderly always encounter obstacles in life, the reaction speed slows down, resulting in a significant reduction in security. The color, volume, material and other factors of furniture will affect whether the elderly can get psychological security.

Secondly, due to the reduction of reactivity and memory, many elderly people's adaptive ability is weakened, and it is difficult to continue to show their self social value in this retirement home, resulting in inferiority and depression of the elderly. Such phenomena are widespread among contemporary elderly people.

Thirdly, pedestrians in old age are bound to face various reasons, such as being far away from society, independence of their children and the death of their peers, which lead to loneliness and emptiness among the elderly. Reasonable use of furniture materials can indirectly provide the elderly with warm and happy experience; considering the function of leisure and entertainment, with the help of reasonable design to help the elderly eliminate loneliness, on the basis of self-care can complete what they want.

3. Analysis of bedroom aging furniture

3.1 Basic Needs

Bedroom furniture mainly includes beds, bedside cabinets, wardrobes, Tables, seats and so on. The bedroom with toilets should also consider the furniture design of bathroom space. We need bedroom furniture for the elderly. First of all, we analyze the use of the main furniture in the bedroom of the elderly from the essential quality to meet the basic size, function and physiological needs.

3.1.1 Beds and bedside cabinet

The basic function of the bed is sleep. Older people get relaxation and rest by lying half or all in bed. When designing special beds for the elderly, too low the height of the bed will lead to the behavior of not easy to rise and fall. It is very vulnerable to fall from the bed too high. It can be added with a guard beside the bed to prevent falling. It can facilitate them to grasp and maintain balance when they go to and from bed, and at the same time give the elderly a sense of

psychological security. For the size of the bed, the elderly often lie cross when sleeping in the ordinary double bed (2000 mm X1 500 mm). The main reasons for this situation are the poor breathing of the elderly and the influence of turning over on the rest of the other person. Therefore, the size of double bed is usually (2000 mm X1 800 mm) and single bed is (2 000 mm X1 200 mm). Therefore, reasonable selection of materials, and the integration of new materials and intelligent technology into the design, is an important step in the design of beds for the elderly.

3.1.2 Wardrobe

Wardrobe is the most important storage furniture in the bedroom. If it is a counter-door closet, it is necessary to design the size of the cabinet door according to the size of the wheelchair, so as to facilitate the elderly to sit on the wheelchair and switch the cabinet door. As storage furniture, the requirements of storage furniture in regional division are consistent with those in other old furniture. In addition, the elderly usually wear the most leisure clothes, clothes are mainly made of pure cotton, so the design should do more laminates and drawers, and most of the elderly daily outgoing clothes are not many, wardrobe design can also consider setting up a convenient to take clothes and hangers combined structure.

3.1.3 Seats

Besides beds, chairs and sofas are the most frequently used furniture for the elderly. Although chairs and single sofas or recreational chairs are not exclusive to bedroom furniture, they can appear in the bedroom of the elderly in many cases, as an indispensable role in the old design. As you get older, you'll be taller than you were when you were younger. But the circumference will be larger than the average adult, which needs space range of activities. Choosing the older and fatter female population as the design metrics can make the design meet the needs of men and the thinner elderly population.

3.2 Psychological needs

In addition to the basic size, function and physiological needs, the impact of appearance and shape on the psychology of the elderly should also be considered in the design. First of all, color gives people an intuitive, first feeling. Different color environments give people different psychological and physiological feelings. For example, in the blue environment, the elderly are easy to relax. Color also affects the perception of volume, cold color is lighter and warm color is heavier. The direct psychological effect of color comes from the physical light stimulation of color which has a direct impact on human physiology. Furniture design with appropriate color matching can bring sTable and pleasant psychology to the elderly users and psychological security to the elderly. Secondly, through the simplification of furniture design, as well as the obvious appearance or marking emphasis on design, the elderly can correctly and easily use, and accurately determine the location of items, which can greatly enhance their self-confidence. Furthermore, if the design can increase the possibility of operation, the elderly can feel more of their own value and creativity.

3.3 Design Principles of Bedroom Aging Furniture

With the achievements of modern science and technology and the beauty of modelling rules to create people's life, work and social activities in need of special products - furniture. Because the social role and economic status of the elderly have changed from dominant to subsidiary, and they live alone more, their emotional characteristics are often characterized by loneliness, nostalgia, and a sense of balance and stability in their hearts. According to the physical and mental changes of the elderly, we can know that the aging furniture serving the elderly has its own unique aspect in shape, color, material and decoration, which is different from other kinds of furniture. It can be summarized as several principles:

3.3.1 Security Principles

Safety of aging furniture is the basic guarantee of design. Safety involves the structure, material, technology and other aspects of furniture. In modelling, the surfaces or shapes of bedside cabinets,

wardrobes and other furniture should be lubricated and smooth. It is suggested to use rounded corners and smooth surfaces to avoid sharp corners and bumps and to prevent the elderly from bumping into injuries. Material as much as possible with rubber edge or flexible materials, less glass, stone, metal and other hard materials, more choice of pure, safe, non-toxic, easy decomposition, less pollution, recyclable environmental protection materials, such as solid wood, so that furniture in the production and making process will not cause environmental pollution, but also to maximize energy conservation and emission reduction. Avoid potential safety hazards for the elderly. Dampers or other buffers should be installed in the door switch structure of furniture cabinets such as storage cabinets to prevent the occurrence of dangerous situations such as grippers and bullet collisions. In addition, the load-bearing of furniture should meet the requirements of mechanical strength and meet the standards of ergonomics.

3.3.2 Functional Principle

Aging furniture should not only satisfy the basic use function, but also have the function to facilitate the use of the elderly. The most basic function is the use of furniture, that is, the function of chair to sit, the function of bed to sleep. Considering the physical and mental characteristics of the elderly, the satisfaction of these functions should be fully considered in furniture design. For example, considering the reduction of muscle volume and the shortening of height of the elderly, the bed of the elderly should not be too high, so as to avoid inconvenience in getting up and down to bed. Spring beds and other soft beds are not suitable for the elderly, especially for the elderly with lumbar muscle strain and bone hyperplasia, which will aggravate their symptoms.

3.3.3 Barrier-free principle

Based on the behavioral characteristics of the elderly. The furniture products are designed barrier-free, the functional dimensions are set reasonably and the auxiliary facilities are added to enhance the activity ability of the elderly at home, and the safety of the elderly's home life is guaranteed.

3.3.4 Intelligence and intelligence.

Due to the weakening of various functions of the elderly body, ordinary furniture can not meet their use needs. With the rapid development of modern science and technology, digital technology can be used as a design tool to increase the use value and convenience of aging furniture. Due to the decline of physical movement skills and flexibility of the elderly, some intelligent adjustment functions can be added to the design of aging furniture, such as the addition of intelligent software APP or sensors. Intelligent bedding can adjust height, elevation and radian independently to meet the requirements of different sleeping postures of the elderly.

3.3.5 Ethical Design

Aging furniture design should respect and meet the emotional needs of the elderly. Old people do not attach much importance to furniture decoration, so pay attention to avoid excessive decoration. Furniture color is suitable to choose light and elegant colors, giving people a sense of relaxation and pleasure, such as log color, light green or light yellow, etc., will make the elderly quiet, calm and peaceful. Furniture implies and accompanies the growth of a family, carrying the emotions and memories of life, recording every bit of life, witnessing the growth process of the family. Therefore, for old furniture, discarding, idling, selling, destruction and other acts are not feasible, green transformation is the ideal treatment. The reformed furniture continues to inherit the wisdom, emotion and memory of the family, which is very in line with the emotional needs of the elderly, such as nostalgia. At the same time, the discarded products can play a new role, low-carbon environmental protection, and save resources.

4. Conclusion

Based on the psychological, physiological and behavioral characteristics of the elderly group,

coordinating the design elements of aging furniture in safety, intellectualization, barrier-free, intellectualization and ethics can provide the elderly with a safer, comfortable, healthy, barrier-free and intelligent living environment, increase the happiness index of the elderly group, stimulate their enthusiasm for life and ensure their safety. And rehabilitation needs.

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