

Research on the matching between the psychological needs of the elderly and the interior design of intelligent elderly care

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Abstract. This paper studies the matching relationship between the psychological needs of the elderly and the interior design of smart elderly care. Through literature review and empirical research, the characteristics of the psychological needs of the elderly and the principles and methods of intelligent elderly care interior design are analyzed. The study found that the psychological needs of the elderly are related to the interior design of smart elderly care, and meeting the psychological needs of the elderly can improve their quality of life and happiness. On this basis, the optimization strategy of intelligent elderly care interior design based on the psychological needs of the elderly is proposed. This study is of great significance for improving the quality of life of the elderly and promoting the development of intelligent interior design for the elderly.

Keywords: psychological needs; Intelligent elderly care; Interior design; Optimization strategy.

1. Introduction

Under the background of the aging of the global population, the needs of the elderly have gradually become the focus of social attention. In the needs of the elderly, the satisfaction of psychological needs is particularly important. The satisfaction of psychological needs can not only improve the quality of life and happiness of the elderly, but also promote their physical and mental health. Therefore, it is of great theoretical and practical significance to study the psychological needs of the elderly and combine them with interior design to optimize interior design under the background of smart elderly care.

This paper aims to study the matching relationship between the psychological needs of the elderly and the interior design of smart elderly care. Through the overview of geriatric psychology and the analysis of the characteristics of the psychological needs of the elderly, it discusses the theory and practice of the interior design of smart elderly care, as well as the correlation between the psychological needs of the elderly and the interior design of smart elderly care. On this basis, the optimization strategy of intelligent elderly care interior design based on the psychological needs of the elderly is put forward. By combing the relevant literature, summarizing the theories of geriatric psychology and the characteristics of the psychological needs of the elderly, the concept, development, principles and methods of intelligent elderly care interior design were discussed[1]. At the same time, through empirical research, verified the relationship between the psychological needs of the elderly and the intelligent interior design for the elderly.

The significance of this study is to provide theoretical guidance and practical reference for promoting the development of intelligent elderly care interior design. By deeply understanding the psychological needs of the elderly and optimizing the interior design, the quality of life and happiness of the elderly can be improved, and a more comfortable and convenient environment for the elderly can be provided. In addition, this study also provides reference and guidance for the interior design of elderly care service institutions and elderly care communities, which is conducive to building a smart elderly care environment that ADAPTS to the needs of the elderly.

2. Theoretical basis of psychological needs of the elderly

2.1 Overview of geriatric psychology

Geriatric psychology is a subject that studies the psychological characteristics and psychological changes of the elderly. With the intensification of population aging, geriatric psychology has been paid more and more attention. The research content of geriatric psychology mainly includes the cognition, emotion, social relationship and mental health of the elderly. Through the in-depth study of the psychological characteristics of the elderly, we can better understand the psychological needs of the elderly, and provide a theoretical basis for interior design[2].

The study of geriatric psychology focuses on people aged 65 years and older and aims to understand the changes and characteristics of older people in terms of cognition, emotion and social interaction. Cognitively, older adults may experience some decline in attention, memory, intelligence, and learning, but they may have an advantage in experience and knowledge. On the emotional side, the elderly may face the stress of life transition, loss of relatives and friends, and need more emotional support and care. In terms of social relations, the social circle of the elderly may shrink, requiring more social interaction and emotional interaction to meet psychological needs. In addition, the mental health problems of the elderly also need attention and research, such as depression, anxiety and so on.

2.2 Characteristics of psychological needs of the elderly

The psychological needs of the elderly are different from those of other age groups. First, older people have a stronger need for security and stability. As physical and cognitive abilities decline, older adults want living environments that provide safety and security and reduce the risk of accidents and injuries. In addition, older people want to be able to maintain stable social relationships and human interaction to meet their needs and mutual support. Second, the elderly have a high demand for dignity and autonomy. The elderly hope to maintain their independence and autonomy in the nursing environment, and obtain respect and reasonable choice. In the design of elderly care facilities, it is necessary to consider the personal privacy and dignity of the elderly, and provide them with space and opportunities to make independent decisions. Third, older people have an increased need for emotional support and social interaction. With the decrease of relatives and friends and the change of social roles, the elderly are more eager to establish and maintain close relationships with others, and get emotional support and care. In interior design, social activity places and communication areas should be set up to provide opportunities for the elderly to socialize and promote their emotional satisfaction and social participation. Finally, the quest for self-actualization and meaning in life remains. Although there may be a decline in physical function and mobility, older people still want to achieve self-worth and pursue meaning and satisfaction in their later years. Interior design should focus on providing personal space and activity areas for the elderly, encouraging them to participate in meaningful activities and social projects[3].

3. Theory and practice of intelligent elderly care interior design

3.1 Concept and development of intelligent elderly care interior design

Intelligent elderly care interior design is a combination of modern technology and elderly care services, through the application of advanced information technology and intelligent equipment, to provide comfortable, convenient and intelligent living environment for the elderly. The goal of intelligent elderly interior design is to meet the needs of the elderly through intelligent technology, improve their quality of life and autonomy. With the development of artificial intelligence, Internet of things and other technologies, intelligent elderly care interior design has been widely used in practice (Fig 1).

The development of intelligent elderly care interior design mainly includes two aspects. On the one hand, the application of intelligent equipment has promoted the development of intelligent elderly

care interior design. For example, the smart home system can provide convenient living experience through voice control, remote monitoring and other functions, such as intelligent lighting, intelligent security, intelligent medical treatment, and so on (Fig 2). On the other hand, intelligent elderly care interior design focuses on humanization and human-computer interaction, emphasizing the personalized needs of the elderly[4]. Through customized design and intelligent equipment, we can meet the living needs of the elderly and improve their quality of life and happiness.

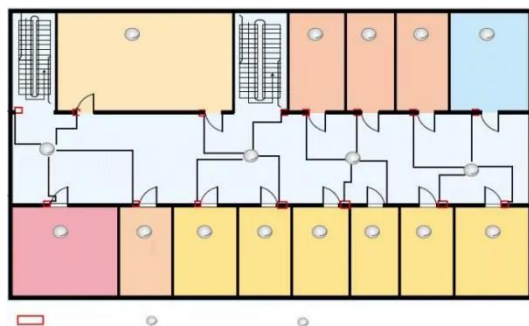


Fig. 1 Interior design of smart elderly care

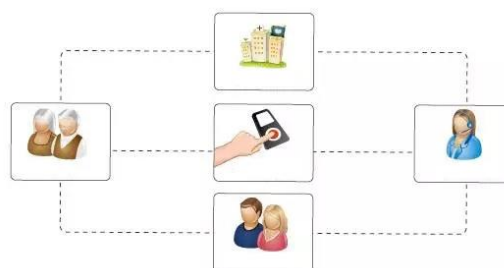


Fig. 2 Application of intelligent equipment

3.2 Principles and methods of intelligent elderly care interior design

Intelligent elderly care interior design should follow some principles and methods to achieve the match with the psychological needs of the elderly.

(1) Humanization principle. The design should respect the personal preferences and needs of the elderly, and avoid over-reliance on technology and alienating human communication. The interior design should be as simple and comfortable as possible to facilitate the movement and use of the elderly.

(2) Safety principles. The interior design should focus on the safety of the elderly, such as the design of stairs with suitable slope, non-sliding floors and non-slip bathroom facilities, so as to reduce the risk of accidental falls of the elderly. At the same time, intelligent elderly care interior design should also provide intelligent safety equipment, such as emergency buttons and automatic extinguish gas valves.

(3) The principle of convenience. The interior design should simplify the daily life of the elderly and provide convenient facilities and services. For example, smart furniture design should take into account the mobility of the elderly, and provide remote control operation function, so as to facilitate the elderly to live independently.

(4) Green environmental protection principle. The interior design should take into account the health and environmental protection of the elderly, try to avoid the use of harmful substances, choose environmentally friendly materials, and provide natural light and ventilation systems to improve the living environment of the elderly[5].

The theory and practice of intelligent elderly care interior design should pay attention to meet the psychological needs of the elderly and improve the quality of life. Through technological innovation and humanized design, better living experience and care services can be provided to promote the health and happiness of the elderly. However, at present, the research on intelligent elderly care interior design is still relatively limited, which needs to be further explored and improved. Therefore, future research can further understand the psychological needs of the elderly and propose more scientific and effective design principles and methods to promote the development of intelligent elderly care interior design.

4. Research on the correlation between the psychological needs of the elderly and the interior design of smart elderly care

4.1 Theoretical basis of relevance

There is a close correlation between the psychological needs of the elderly and the interior design of smart elderly care. First of all, according to the research of geriatric psychology, the elderly have specific psychological needs, including social needs, self-realization needs, safety needs and so on. Intelligent elderly care interior design can meet the social needs of the elderly by providing social space, encouraging the elderly to participate in community activities, and providing personalized services. In addition, smart elderly care interior design can also provide safety equipment and a convenient living environment to meet the safety needs of the elderly. Therefore, the intelligent elderly care interior design based on the psychological needs of the elderly can provide a living environment closer to the psychological needs of the elderly[6].

4.2 Empirical study of correlation

Existing studies have conducted empirical research on the correlation between the psychological needs of the elderly and the interior design of smart elderly care. One of the studies showed that providing socialized interior design and services can significantly increase happiness and life satisfaction among older adults. For example, the design of social places such as neighborhood exchange Spaces, activity rooms, and leisure areas encourages the elderly to participate in community activities, promotes communication and interaction among them, and improves social support and quality of life. Another study found that safety devices and amenities in smart elderly care interior design, such as smart security systems and smart home devices, can significantly reduce the risk of accidental injury for the elderly and improve their quality of life and sense of security.

These empirical research results further prove the correlation between the psychological needs of the elderly and the interior design of smart elderly care. By meeting the psychological needs of the elderly, the intelligent elderly interior design can provide a safer, more comfortable and convenient living environment, and promote the happiness and life satisfaction of the elderly.

5. Intelligent interior design optimization strategy based on the psychological needs of the elderly

5.1 Design optimization principles

Intelligent elderly care interior design based on the psychological needs of the elderly can follow the following optimization principles:

(1) Functional principle: The design should emphasize functionality and meet the daily life needs of the elderly. For example, the provision of easy-to-use intelligent equipment and facilities, such as smart home systems, is easy for the elderly to operate and control.

(2) Safety principle: pay attention to the safety needs of the elderly, provide safety equipment and protection measures. For example, intelligent monitoring systems, panic buttons and non-slip floors are installed to reduce the risk of accidental injury to the elderly.

(3) Humanization principle: The design should respect the personal preferences and needs of the elderly, and create a comfortable and warm environment. For example, the provision of ergonomic furniture and equipment that provides appropriate light and air circulation promotes comfort and well-being for the elderly.

(4) Social principle: The design should provide social space and facilities to promote social interaction. For example, the establishment of communication areas and leisure activities to encourage older people to participate in community activities to improve social support and quality of life.

(5) The principle of environmental protection: the design should focus on environmental sustainability, the use of environmentally friendly materials and energy saving equipment. For example, choose materials that are easy to recycle and reuse, reduce the use of hazardous substances, and provide energy-efficient lighting and ventilation systems[7].

5.2 Design optimization methods and steps

In the optimization of intelligent elderly care interior design, the following methods and steps can be adopted:

To investigate the psychological needs of the elderly: to understand the psychological needs and preferences of the elderly and explore their expectations for interior design through questionnaires, interviews or participant observation.

Analyze the match between the needs and the existing design: evaluate whether the current interior design scheme meets the psychological needs of the elderly, and identify possible optimization directions and improvement points.

Design improvement: Based on the research results and analysis, propose specific design optimization plans, such as increasing social space, improving lighting and air quality, optimizing the humanized design of equipment and furniture, etc.

Implementation of the design plan: According to the optimization plan, the implementation of the interior design, including adjusting the layout, updating the facilities and equipment, to ensure that the design matches the needs of the elderly[8].

Evaluation and feedback: Evaluate the optimized design scheme, collect feedback from the elderly, understand their feelings and satisfaction with the design, and make appropriate adjustments and improvements according to the feedback results.

Through the above design optimization methods and steps, the quality and adaptability of intelligent elderly care interior design can be continuously improved, and the quality of life and satisfaction of the elderly can be improved.

6. Conclusion

This paper studies the relationship between the psychological needs of the elderly and the interior design of smart elderly care, in order to provide theoretical and practical guidance for the smart elderly care industry and promote the improvement of the happiness and quality of life of the elderly.

We first reviewed the background and purpose of the research, and pointed out the importance and research significance of the psychological needs of the elderly and the intelligent interior design for the elderly. Then, we introduce the scope and method of this study, and clarify the direction and steps of the study.

In the theoretical basis part, we summarize the overview of geriatric psychology, and further analyze the characteristics of the psychological needs of the elderly. In the theory and practice of intelligent elderly care interior design, we introduce the concept and development of intelligent elderly care interior design, and summarize its principles and methods.

Then, we conducted a research on the correlation between the psychological needs of the elderly and the intelligent interior design for the elderly. Through theoretical basis and empirical research, we found that intelligent elderly care interior design can meet the psychological needs of the elderly and improve their quality of life and happiness.

Finally, we put forward the intelligent interior design optimization strategy based on the psychological needs of the elderly. Design optimization principles include attention to detail, user-friendly design, comfort and safety. Design optimization methods and steps include understanding the needs of the elderly, providing personalized design, reasonable layout and configuration.

In summary, the conclusion of this study is that there is a close correlation between the psychological needs of the elderly and the interior design of smart elderly care, and the interior design of smart elderly care can meet the psychological needs of the elderly and improve their quality of life

and happiness. However, this study has some problems such as limited sample and insufficient analysis of other factors. Future studies can further broaden the sample scope and research Angle. Looking forward to the future, the intelligent elderly care interior design will become an important direction for the development of the elderly care industry, providing the elderly with a more responsive intelligent elderly care environment, while paying attention to the application of the psychological needs of the elderly in social policies and elderly care services, and providing more comprehensive care and support.

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