

Design of Elderly Health Environment based on Plant Five-Sense Design

Chaoyu Xie *

Wenzhou Polytechnic, Wenzhou 325000, China

* Corresponding author Email: Xie_chaoyu@163.com

Abstract: Designing a suitable environment for the elderly has always been a focus of attention, and the concept of using plant sensory design in the elderly care environment has gained increasing attention in recent years. This article proposes a new design concept for the elderly care environment based on plant sensory design, starting from the needs of the elderly for their care. Firstly, an overview of the theory and basic principles of plant sensory design is presented, and its application in environmental design is discussed. Secondly, the needs of the elderly for their care environment are analyzed, and a detailed analysis of their needs for a plant sensory design environment is provided. Finally, a specific implementation plan for the design and the future development direction of the plant sensory design for elderly care environment are presented. The aim of this article is to provide new ideas and concepts for the design of the elderly care environment and contribute to the development and maturity of the care industry.

Keywords: Elderly Care; Plant Sensory Design; Environmental Design; Needs Analysis; Implementation Plan.

1. Introduction

The elderly population is an important demographic globally. With the increasing aging of the population, the issue of elderly health and well-being has gained significant attention. Improving the physical and mental health of the elderly and enhancing their quality of life has become a crucial topic in society. Plant sensory design is a design concept that has emerged in recent years, aiming to create vibrant and interactive environments through various sensory stimuli such as plant form, color, fragrance, texture, and sound. This design concept not only enhances human comfort and happiness but also promotes human health and psychological balance.

In the field of elderly care, incorporating plant sensory design into environmental design can provide a vibrant and interactive care environment for the elderly. By stimulating the elderly's senses through plant form, color, fragrance, texture, and sound, the design can improve their physical and mental health status and enhance their quality of life. Furthermore, a plant sensory design-based elderly care environment design is innovative and practical, providing new ideas and methods for research in the field of elderly care. Therefore, this research has significant theoretical and practical value.

2. Overview of the Theory of Plant Sensory Design

2.1. Definition and Basic Principles of Plant Sensory Design

Plant five-sense design is a method of applying the five senses of plants to environmental design. These five senses include sight, hearing, touch, smell, and taste. By designing plants' color, shape, texture, aroma, and taste, among other aspects, the five senses of humans can be stimulated, thus promoting physical and mental health. The basic principle is to use plants' sensory characteristics, such as the color,

fragrance, and texture of flowers, to stimulate human senses such as sight, smell, and touch, creating comfortable and pleasant feelings and regulating emotions, relieving stress, and enhancing immunity, which is of great significance to the physical and mental health of the elderly. At the same time, plant five-sense design can also create a natural and comfortable living environment for the elderly, improve their quality of life, improve living conditions, and enhance the convenience of social activities [1].

2.2. The Application of Plant Sensory Design in Elderly Health and Wellness

The application of plant sensory design in elderly care includes the following aspects:

Visual: Creating beautiful landscapes using the form, color, and movement of plants to create a pleasant atmosphere, allowing the elderly to enjoy the beauty of plants and reduce negative emotions such as anxiety and depression, thus improving their mental health.

Olfactory: Creating a pleasant odor environment using the fragrance of plants, such as using herbs and flowers to deodorize, sterilize and improve indoor air quality, creating a comfortable and healthy living environment, and promoting the physical health of the elderly.

Auditory: Creating a pleasant auditory environment using the sounds of plants, such as using natural sounds like flowing water and bird calls to reduce noise pollution, improve the comfort and quietness of the indoor environment, allowing the elderly to enjoy relaxing and resting time in a quiet and comfortable environment.

Tactile: Creating a pleasant tactile environment using the texture and touch of plants, such as placing smooth and delicate green plants indoors or planting soft grass on the lawn, allowing the elderly to feel the warmth and comfort of nature while touching plants, promoting physical relaxation and recovery.

Gustatory: Creating a pleasant taste environment using the taste of plants, such as planting herbs and vegetables, allowing the elderly to enjoy the deliciousness and nutrition

of plants while tasting healthy ingredients, thus improving their physical health and taste enjoyment.

In summary, plant sensory design has a wide range of applications in elderly care, creating a comfortable, beautiful, and healthy environment, promoting the comprehensive improvement of the physical and mental health of the elderly.

3. Analysis of Elderly Care Needs

3.1. Needs Analysis of Elderly People for Wellness Environment

When designing the environment for elderly health preservation and rehabilitation, it is necessary to first analyze their needs for such an environment. Elderly people's needs for a health preservation environment mainly include physical, psychological, social, and cultural aspects. Physically, elderly people want to live in a safe, comfortable, convenient, clean, and barrier-free environment, while also having good ventilation, lighting, and temperature facilities. Psychologically, they want to live in an environment that provides them with sufficient freedom, privacy, entertainment, and leisure facilities, as well as psychological support and counseling services to a certain extent [2]. Socially, they want to have opportunities to interact and communicate with other elderly people, as well as opportunities to integrate into the community and participate in community activities. Culturally, they want to have opportunities to learn about and participate in local cultural and traditional activities to maintain their cultural identity.

Based on the needs analysis of the elderly for a health preservation environment, plant-based sensory design can provide a more suitable environment for their lives and rehabilitation, thereby improving their physical and mental health.

3.2. Analysis of the Elderly's Needs for Environment Designed with Plant Five Senses

When designing an environment for the elderly's health and well-being, it is important to consider their specific needs and preferences. In addition to the general requirements of safety, comfort, and convenience, the elderly also have specific needs in terms of sensory experiences. Based on previous studies, the elderly prefers environments that provide sensory stimulation, especially those that involve plants.

In terms of visual sensory experience, the elderly prefers natural scenes with plants, flowers, and water features. They also prefer bright, warm, and natural lighting that creates a sense of well-being. In terms of auditory sensory experience, the elderly prefers quiet environments with soothing sounds, such as the sound of flowing water or soft background music. In terms of olfactory sensory experience, the elderly prefers environments with natural scents, such as those from flowers and plants, and dislike unpleasant odors. In terms of tactile sensory experience, the elderly prefers environments that provide a variety of textures, such as smooth and rough surfaces, and materials that are warm and soft to the touch. In terms of taste sensory experience, the elderly prefers foods with familiar and simple flavors [3].

By incorporating plant-based sensory experiences into the environment, designers can provide a more engaging and stimulating experience for the elderly, which can improve their overall well-being and quality of life.

4. Practice of Elderly Care Environment Design based on Plant Five Senses Design

4.1. Environmental Design Concepts and Goals

The concept and objectives of elderly care environment design based on plant sensory design aim to create an environment that meets the physical, psychological, and social needs of the elderly through the visual, auditory, olfactory, tactile, and gustatory sensory characteristics of plants. The design objectives mainly include:

Improve the physical health of the elderly: By designing a comfortable, safe, hygienic, barrier-free, and natural environment, the elderly can enjoy fresh air, good ventilation, natural light, and comfortable temperature brought by plants, thereby improving their immunity, relieving fatigue and stress, and preventing and improving diseases.

Promote the psychological well-being of the elderly: By providing sufficient entertainment and leisure facilities and an environment that can provide a certain level of psychological support and counseling services, the elderly can alleviate negative emotions such as loneliness, depression, and anxiety, and improve their quality of life and happiness.

Enhance the social skills of the elderly: By designing diverse social activities and communication venues, the elderly can interact and communicate with other elderly people, expand their social circle, enhance their social skills and self-confidence, and promote harmonious development of the community.

Create a cultural atmosphere that the elderly love: By combining plants with local culture and traditions, a unique and locally characteristic elderly care environment is designed, providing the elderly with the opportunity to understand and participate in local cultural and traditional activities, and enhancing their cultural identity and sense of belonging [4].

4.2. Specific Implementation Plans for Environmental Design

The specific implementation plan for the design of a senior care environment based on the five senses of plants is as follows:

Visual design: Create a natural, harmonious, comfortable, and beautiful environment through plant landscapes and color combinations. Plant colorful and diverse flowers in places such as courtyards, flower beds, and flower walls, and design visually appealing and impactful plant combinations. In indoor design, consider window positions and lighting effects, select green plants that can improve indoor air quality and comfort, and choose plant species based on the preferences of the elderly.

Auditory design: Create a peaceful, comfortable, and natural environment through plant sounds and natural sound effects. Design artificial water features such as flowing water and fountains, and plant trees and clusters of grasses that produce natural sound effects, providing space for the elderly to relax.

Olfactory design: Create a fragrant, fresh, and comfortable environment through plant aromas and scents. Choose aromatic plants that suit the olfactory characteristics of the elderly, such as lilies and jasmine, and use plant-released scents to remove indoor odors and improve the comfort of the elderly.

Tactile design: Create a soft, comfortable, and natural environment through the texture and feel of plants. Plant grass lawns and cushions with a soft texture, place comfortable wooden furniture, and design landscapes that meet the tactile needs of the elderly.

Taste design: Provide the elderly with delicacies and medicinal dishes through plant ingredients and medicinal herbs. Design the planting of vegetables, fruits, Chinese medicinal herbs, etc., to provide the elderly with fresh, healthy, and delicious food to satisfy their taste buds.

In summary, the specific implementation plan for the design of a senior care environment based on the five senses of plants involves multiple aspects, and requires a comprehensive consideration of the needs and characteristics of the elderly. Design should be carried out from multiple dimensions such as visual, auditory, olfactory, tactile, and taste, creating a comfortable, safe, hygienic, barrier-free, natural, and culturally distinctive senior care environment.

4.3. The Application of Plant Sensory Design in the Environment

The application of plant sensory design in the environment can be seen in various settings, including:

Elderly care facilities: The use of plant sensory design can create a calming and soothing environment for the elderly, enhancing their overall well-being. Incorporating elements such as indoor plants, water features, and comfortable seating areas can provide a sensory-rich experience for the residents.

Hospitals and healthcare facilities: Plant sensory design can help create a healing and restorative environment for patients. The use of greenery, natural light, and soothing sounds can promote a sense of calm and reduce stress levels.

Workplaces: Plant sensory design can help improve productivity, creativity, and overall employee satisfaction. Incorporating natural elements, such as plants and water features, can create a more relaxed and enjoyable work environment.

Educational institutions: Plant sensory design can help create a stimulating and engaging learning environment for students. Incorporating natural elements into classrooms and outdoor spaces can improve focus, creativity, and overall well-being.

Residential settings: Plant sensory design can enhance the aesthetics and overall comfort of homes and living spaces. Incorporating plants, water features, and natural lighting can create a relaxing and inviting atmosphere for residents [5].

Overall, plant sensory design can be applied to a variety of environments to create a more enjoyable, calming, and rejuvenating experience for the people who inhabit these spaces.

4.4. Future Development Directions for the Design of Elderly Care Environments based on Plant Five-sense Design

Conduct in-depth research on the physiological and psychological needs of the elderly, and develop more tailored health and wellness environment design solutions that incorporate the concept of plant-based sensory design.

Apply the concept of plant-based sensory design to a wider

range of settings, such as hospitals, nursing homes, parks, etc., to promote the development and improvement of public health and wellness facilities.

Use technology to facilitate interaction between plants and humans, such as through intelligent plant monitoring systems or devices for playing music generated by plants, to increase elderly participation and interactivity.

Explore the integration of the concept of plant-based sensory design with other health and wellness practices, such as color therapy, music therapy, aromatherapy, etc., to enhance the effectiveness of elderly health and wellness.

Increase the promotion and awareness of the concept of plant-based sensory design, to improve public knowledge and acceptance, and to promote the development and maturity of the health and wellness industry.

5. Conclusion

Based on the design concept of plant sensory experience, the design of elderly care environment can create a dynamic and interactive environment by stimulating the five senses of the elderly with the forms, colors, fragrances, textures, and sounds of plants, which can effectively improve the physical and mental health of the elderly and enhance their quality of life. In the future, in-depth research on the physiological and psychological needs of the elderly, broader application of plant sensory experience in public facilities, integration with other care concepts, development of interactive technology, and increased public awareness and acceptance of this design concept will promote the development and maturity of the care industry.

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