

## Biophilic design patterns and universal design principles application in the long-term residential care centers for the elderly

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### **Abstract:**

The number of elder people living with dementia and related cognitive disorders is predicted to increase dramatically in the coming years. As a consequence, the need is increasing for appropriately designed long-term care (LTC) environments and design guidelines for these settings. This investigation presents the findings of a broad literature review on biophilic and universal design and their application on LTC. Biophilic and universal design can reduce stress, enhance creativity and clarity of thought, improve our well-being and expedite healing; as the world population continues to urbanize these qualities are ever more important. Theorists, research scientists, and design practitioners have been working for decades to define aspects of nature that most impact our satisfaction with the built environment. "14 Patterns of Biophilic Design" and 7 principles of universal design articulates the relationships between nature, human biology and the design of the built environment so that we may experience the human benefits of biophilia and universal design in our design applications. Biophilia in Context looks as the evolution of biophilic design in architecture and planning and presents a framework for relating the human biological science and nature. Design Considerations explores a sampling of factors (e.g., scale, climate, user demographics) that may influence biophilic and universal design decisions to bring greater clarity to why some interventions are replicable and why others may not be. The Patterns lays out a series of tools for understanding design opportunities, including the roots of the science behind each pattern, then metrics, strategies and considerations for how to use each pattern. This paper moves from research on biophilic responses to design application as a way to effectively enhance health and well-being for elder people and society, and the study of the different patterns of biophilic design and universal design and how to apply them within the centers of elder people, and thus its impact on the psyche, health. **Research problem:** 1-The fast growth of the built environment has caused designers to focus mostly on the function of the building and more recently on the impact of the building on the natural environment. 2- Determine what are the design mechanisms and determinants that help the designer in activating the role of the environment and integration with nature in nursing homes for their important role in the recovery of the elderly and raising the efficiency of their psychological and physical health. **Objective:** How to benefit from applying the concept of biophilic and universal design trends in interior design, and benefit from them in designing long-term residence centers for the elderly to make a positive impact on their psychological and physical health. **Hypotheses: 1-**The application of the concept of biophilic and universal design in the residence centers for the elderly reflects positively on their mental and physical health. 2-The application of the concept of biophilic and universal design in the residence centers for the elderly increases their communication with the surrounding environment and harmony with it. **Methodology: 1-**The descriptive analytical approach: through a definition of biophilic design patterns and universal design and their determinants and how to apply them in residential centers for the elderly. 2- Analytic approach :through the analysis of an example of elder people center achieving biophilic and universal design.

### **Keywords :**

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