

Amity Elderly Home with Architectural Behaviour**Putri Yemima Fressy Napitupulu¹, Samsul Bahri²**¹ Department of Architecture, Faculty of Engineering, Universitas Sumatera Utara, Medan, Indonesia

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Abstract (English)

Loneliness among older adults is a significant public health concern due to its adverse effects on mental and physical health. It is characterized by a severance of relationships, particularly from social networks, family, and community. Despite being a taboo subject, loneliness is associated with various negative outcomes, including cardiovascular diseases, depression, anxiety, cognitive decline, dementia, and stroke [1,3]. Studies have shown that loneliness is linked to depression, with a meta-analysis indicating that loneliness increases the incidence of depression by 1.65 times in the elderly compared to those who are not lonely[4]. Additionally, loneliness is related to chronic illnesses and poor health perceptions, with social and emotional loneliness significantly associated with depression and chronic illnesses, respectively[2]. The prevalence of loneliness varies across populations, age, and definitions used, but its impact on health and well-being is undeniable. Therefore, addressing loneliness among older adults is crucial for improving their overall health and well-being, as well as reducing the strain on social care resources and clinical practice[2,5]. Elderly homes are designed specifically for the elderly, yet loneliness remains a significant issue within them. Loneliness in the elderly can be caused by various factors, such as being away from family, decreased social interaction, and lack of spiritual fulfillment. Therefore, effective elderly home design must consider the psychological needs of the elderly and provide adequate facilities to enhance their quality of life. Behavioral architecture plays a crucial role in creating a comfortable and safe environment for the elderly. Required facilities include spaces that facilitate social interaction, physical activities, and spiritual practices. Additionally, elderly homes must have a safe and effective care system in place to identify and manage patient risks. Thus, designing an elderly home that is specifically designed to mitigate loneliness in the elderly must consider their psychological and physical needs and provide adequate facilities to enhance their quality of life. This way, the elderly can feel more comfortable and cared for, and have opportunities to address the feelings of loneliness they experience.

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Loneliness, Elderly Home

1. Introduction

Loneliness among the elderly in Indonesia has become a significant problem. Data shows that the elderly are the dominant group in suicide mortality rates in Gunung Kidul, Special Region of Yogyakarta, with the main cause of loneliness[6] Being the death of a spouse, family, or friend, as well as physical health decline due to aging, making it difficult for the elderly to form new close relationships and tend to isolate themselves[6,7]. Research also indicates that feelings of loneliness generally increase with age, with a percentage of lonely people reaching 32% among those aged 60-69 and 40% among those aged 80 and above[7].

This loneliness not only affects mental health but also physical health and social relationships. Depression, anxiety, chronic stress, and insomnia are some of the mental health issues related to loneliness among the elderly[6,10]. To address this loneliness, increasing social engagement and creating a supportive environment for the elderly is crucial. Small steps such as talking or asking about their well-being can have a significant impact in reminding them that they are not alone and that we are here for them[6,10]. Therefore, special attention and

early efforts can help reduce loneliness and improve the well-being of the elderly in Indonesia.

Designing a senior home with a behavioral architecture approach can help address loneliness among the elderly and also can meet the needs of the elderly by ensuring facilities that guarantee their comfort. The design is based on the behavior of its users, the elderly, to improve their quality of life and reduce loneliness [11].

Other research shows that the quality of life of the elderly is influenced by their relationship with their surroundings, physical condition of the elderly, psychological-social condition of the elderly, and level of independence of the elderly. Loneliness experienced by the elderly can have a negative impact on their quality of life, so designing a senior home that considers the quality of life of the elderly is crucial [12].

Thus, designing a senior home that considers loneliness among the elderly can help improve their quality of life and reduce loneliness. Small steps such as talking or asking about their well-being can have a significant impact in reminding them that they are not alone and that we are here for them. Therefore, special attention and early efforts can help reduce loneliness and improve the well-being of the elderly in Indonesia.

1.1 Elderly

Someone whose physical condition has weakened to the extent that they are unable to support themselves financially can be referred to as elderly or decrepit. This is the definition from Sugono, D. (2008) in the *Kamus Besar Bahasa Indonesia*. The term "elderly" refers to individuals who have reached an advanced stage of life, often characterized by physical decline and increased vulnerability to health issues. In a broader sense, "the elderly" refers to a group of people who are collectively considered old, often used in contexts such as healthcare, social services, or political discussions. The term is often used in contrast to "old," which can be perceived as more blunt or direct. Using "elderly" can be seen as a more polite and respectful way to refer to older individuals or groups.

1.2 Architectural Behaviour

Behavioral architecture is an architecture that is able to handle human needs and feelings that adjust to the lifestyle of humans in it. the word "behavior" expresses an awareness of the social structure of the people, a dynamic movement together in time. Just think of a person's behavior in space, then we can make the design.

Behavioral architecture is an architecture that in its application always include behavioral considerations in the design of behavioral connection with the architectural design. that architectural design can be a facilitator of the human behavior or vice versa as a barrier occurrence of human behavior[13].

Architectural behavior refers to the way in which the design and structure of buildings influence and shape human behavior. This concept is rooted in the understanding that the built environment can significantly impact how people think, react, and interact with their surroundings.

For instance, the layout of a building, including the placement of exits, the flexibility of spaces, and the acoustics, can affect how users navigate and utilize the space. Additionally,

the selection of colors, textures, and lighting can influence emotions and behaviors. This approach, known as behavioral architecture, considers human behavior as a key factor in designing spaces, taking into account factors such as physical activity patterns, sensory experiences, and comfort levels to create environments that facilitate desired behaviors and interactions.

2. Method

The design process in this project involves several systematic approaches. Initially, a field study is conducted to understand the physical characteristics of the building, the surrounding environment, and potential boundaries. Then, a comparative study is conducted, which involves researching relevant aspects either through field visits or using available internet sources. Finally, a literature study is conducted related to nursing homes and the theories that support the design. Then, there is data collected and divided into two categories: primary and secondary. Primary data consists of local regulations, site data, and the original condition of the site. Secondary data includes studies that have been conducted, containing comparative studies on buildings with similar themes and functions.

3. Result and Discussion

This project aims to provide a place for the elderly to alleviate their feelings of loneliness, offer adequate healthcare facilities, and ensure a sense of safety and comfort for them (Figure 1).

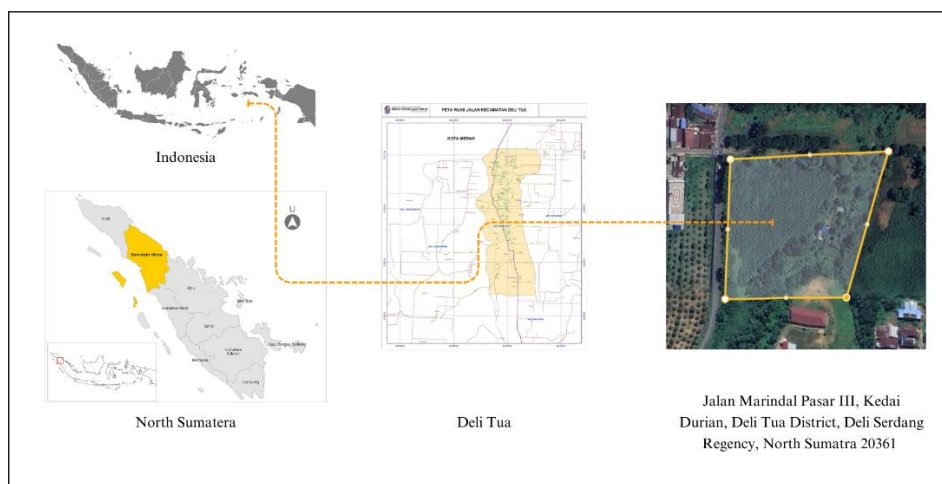


Figure 1. Project Location

3.1 Mass Building Concept

The site in the design requires good site processing to achieve good building orientation, both in terms of function and aesthetics. The zoning results for each building function are shown in the image above.

The main building and the senior housing are the primary functions. Additionally, the guesthouse, hall, activity center, and service buildings are placed around them to serve as supporting buildings (Figure 2).

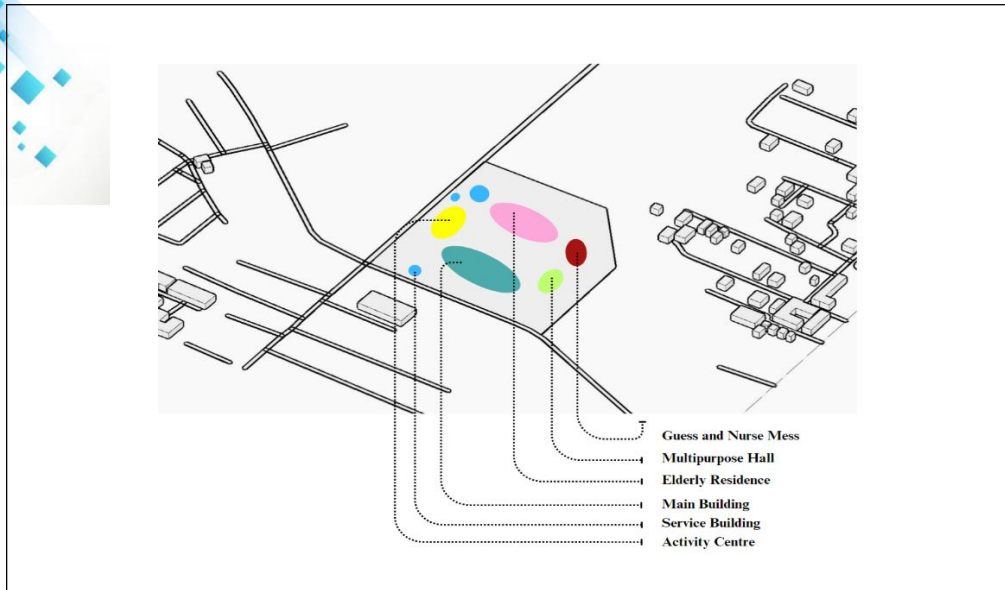


Figure 2. Mass Building Concept

3.3 Theme Implementation

Behavioral architecture is a concept in architecture design and planning that emphasizes how the built environment influences the behavior, emotions, and well-being of its inhabitants[14].

3.3.1 Designs that facilities social interaction

Creating open spaces like gardens, plazas, or community areas that invite and encourage social interaction (Figure 3).



Figure 3. (a) Outdoor gardening area; (b) Outdoor Relax Area

3.3.2 Natural Lighting and Ventilation

In this design, maximizing the use of natural light to enhance mood and productivity is prioritized through features like large windows and skylights. Additionally, a natural ventilation system is incorporated to ensure the flow of fresh air, promoting a healthy and comfortable environment for the occupants (Figure 4).



Figure 4. Adequate lighting application

3.3.3 Use of Color and Material

In designing spaces, careful consideration is given to color selection, aiming to influence mood and behavior effectively. Warm tones are applied in social areas to promote a lively atmosphere, while soothing colors are chosen for relaxation zones to encourage tranquility. Additionally, the use of environmentally friendly materials plays a crucial role in enhancing the overall comfort and well-being of the occupants, ensuring sustainability and health-conscious design principles are upheld throughout the project (Figure 5).



Figure 5. Color and Material Application

3.3.4 Having a Connection with Nature

Incorporating natural elements such as plants, water features, and ample natural light into the design is essential for promoting both mental and physical well-being. These elements not only enhance the aesthetic appeal of the space but also contribute to a healthier environment [15]. Additionally, ensuring that there are ample opportunities for outdoor views, whether through large windows or direct access to outdoor spaces from the interior, allows occupants to connect visually with nature, further enhancing their overall sense of well-being and connection to the environment (Figure 6).

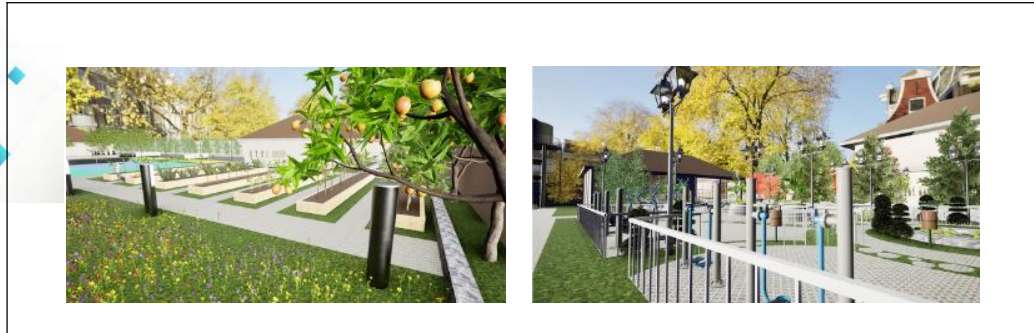


Figure 6. Connection with Nature

4. Conclusion

The behavioral architecture approach in designing elderly homes prioritizes creating a comfortable, safe, and supportive environment. This is achieved by incorporating design elements that promote the psychological and physical well-being of the elderly, such as adjustable room sizes, functional furniture, and soothing colors. Moreover, recreational spaces and activities tailored to their interests enhance their quality of life and sense of belonging. As a result, these homes not only meet functional needs but also offer an aesthetically pleasing environment that supports the emotional and social needs of the elderly, fostering a welcoming atmosphere.

5. Acknowledgements

This research is a study of designing an elderly home for the elderly with a behavioral architecture approach, aimed at reducing loneliness among the elderly and supporting their well-being in their old age by integrating nature in Medan city. The author expresses gratitude to the Department of Architecture, Faculty of Engineering, University of North Sumatra, and all parties who have assisted in this research and design.

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