




UNDERSTANDING THE ROLE OF ARCHITECTURAL DESIGN IN ENHANCING PLACE ATTACHMENT FOR SENIOR CITIZEN CASES OF SENIOR LIVING COMMUNITIES IN AHMEDABAD, INDIA

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Research Article


PII: S238315532500002-14

Received: 07 March 2025

Revised: 30 April 2025

Accepted: 02 May 2025

Published: 15 June 2025

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ABSTRACT: India, like many other countries worldwide, is experiencing a significant demographic shift. The aging of its population in India is expected to grow substantially in the coming years, leading to increased demands for specialized senior living environments. As the elderly face unique physical, emotional, and social challenges, the role of architecture in enhancing their well-being and fostering a sense of placement becomes crucial. In senior living developments, design interventions can be incorporated to increase accessibility, safety, comfort, social interaction, and a sense of identity and belonging. According to research, social isolation and loneliness in senior citizens are linked to poor health and mental performance. The relationship between place attachment and the well-being of senior citizens in India is significant and multi-faceted. Some key aspects of defining the relationship are emotional well-being, sense of identity and purpose, social support, and interaction with familiarity and comfort. Creating supportive and age-friendly environments that foster attachment and enhance the quality of life becomes essential.

KEYWORDS: Place attachment, Senior living, Place identity, Sense of Place, Senior citizens, Architectural features.

INTRODUCTION

Human experiences are informed and influenced by the environment built around them; that is why emotional experiences, social interactions, and general quality of life are so closely tied to the built environment. For an elderly population, especially those living in senior communities, architecture is more than just a living place; it is also about building place attachment, which is described by Altman and Low [1] as the emotional and psychological bonds individuals make with their lived places. The increase in elderly people worldwide has emphasized the need for better senior living environments that offer greater comfort, security, and a sense of belonging. It is important to note that Ahmedabad, a fervently urbanizing Indian city, provides a unique example of the relation between architectural design and place attachment in senior living communities because it has a culturally rich, changing urban landscape and a growing elderly population. Even with the increasing focus on the architecture of the elderly, much-existing literature still focuses on the emotional and psychological aspects of architectural spaces [2] along with universal design, accessibility, and physical comfort needs. Place attachment is about remembering space, identity, social experience, and multi-sensory engagement [3]. Ahmedabad's heritage-inspired architecture, climate-responsive designs, and increasing demand

for senior-friendly housing provide a compelling landscape to explore how architectural interventions shape emotional belonging. Senior living communities in the city exhibit varying design approaches, from institutionalized settings to more community-oriented, interactive spaces. This study examines the role of spatial organization, aesthetics, nature integration, and social spaces in influencing seniors' attachment to their environment. Through case studies, interviews, and spatial analysis, the research seeks to establish a framework for designing emotionally responsive senior living spaces that go beyond mere accessibility compliance to nurture a sense of belonging and identity actively.

Thus, this study is premised on the argument that place attachment is not an incidental outcome of architectural design but a fundamental objective in designing senior living communities. By critically analyzing design strategies that enhance familiarity, engagement, and sensory comfort, the research aims to contribute to an evidence-based approach to senior housing design. Ultimately, fostering place attachment in senior living environments is not just about creating age-friendly spaces but about ensuring that seniors feel emotionally rooted, socially connected, and psychologically secure in their living environments—a crucial factor in healthy aging and well-being.

Citation: Patel Y and Raval P (2025). Understanding the role of architectural design in enhancing place attachment for senior citizen cases of senior living communities in Ahmedabad, India. *J. Art Arch. Stud.*, 14 (1): 13-19. DOI: <https://dx.doi.org/10.54203/jaas.2025.2>



2025 SCIENCeline

JAAS

Journal of Art and Architecture Studies

ISSN 2383-1553

J. Art Arch. Stud. 14(1): 13-19, June 15, 2025

Background

According to research, senior persons frequently suffer changes in their interactions with others and housing circumstances as they age. This adjustment can result in fewer social interactions, feelings of loneliness, and a drop in general well-being. Place attachment, which reflects the emotional link that people have with their physical surroundings, has been identified as an important part of well-being in a variety of circumstances. A strong feeling of place attachment can improve senior citizens' quality of life, sense of belonging, and general contentment with their living environment.

Architectural design shapes the built environment and has the potential to improve place attachment for senior adults. Architects and designers may positively influence the physical and psychological well-being of elders by building age-friendly settings that are accessible, safe, comfortable, and socially engaged. Design interventions that include elements like easy navigation, plenty of natural light, well-designed common areas, and chances for social interaction can help senior adults feel at home. This study intends to investigate the relationship between architectural design and attachment among older adults in India through extensive research that includes literature reviews, case studies, and surveys. The findings will help architects, designers, and politicians build effective strategies that prioritize the requirements and well-being of the aging population, resulting in the establishment of more inclusive and supportive living environments.

Selection of case study:

i. Shantiniketan Senior Living is a well-known senior living community in Adalaj, a peaceful neighborhood in Ahmedabad, Gujarat. It benefits from its strategic location in a peaceful and attractive setting. The neighborhood is located within beautiful green surroundings, giving inhabitants a tranquil and revitalizing environment. The location is convenient to key facilities such as hospitals, retail centers, and recreational areas, providing seniors convenience and comfort.

ii. Jeevan Sandhya Old Age Home is a residential community that caters to senior citizens who require assisted living or nursing care. The facility's architecture is focused on providing a safe and comfortable environment for the elderly residents.

METHODOLOGY

•The survey analysis will provide a comprehensive understanding of the range of experiences and perspectives of senior citizens regarding the role of architectural design in enhancing place attachment.

•To understand the level of place attachment among the seniors from the PPP theory of place attachment using Likert scale.

•Synthesize the findings from the literature review, case studies, and survey data to provide insights on how architectural design can enhance place attachment among senior citizens in elderly housing.

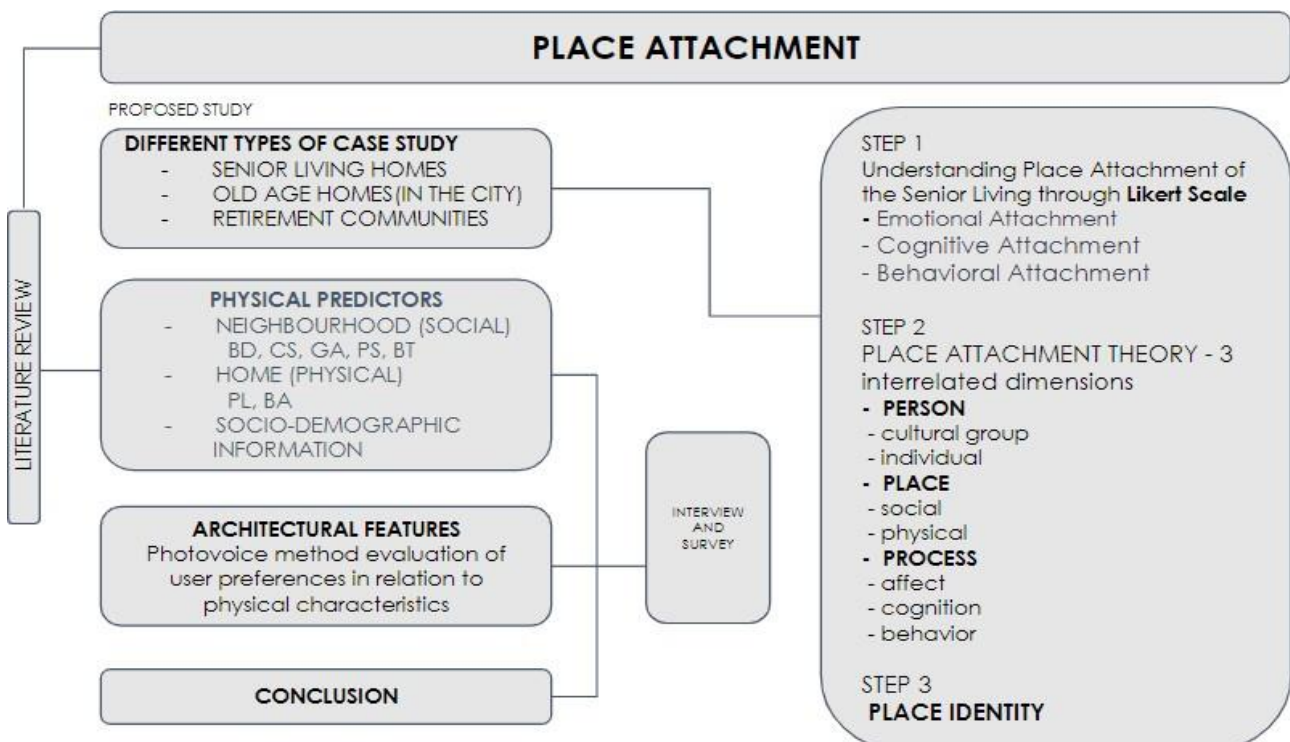


Figure 1. Research methodology.

Based on the PPP framework, the following is a proposed Likert scale for understanding place attachment of senior citizens in the context of architectural design in their living environment.

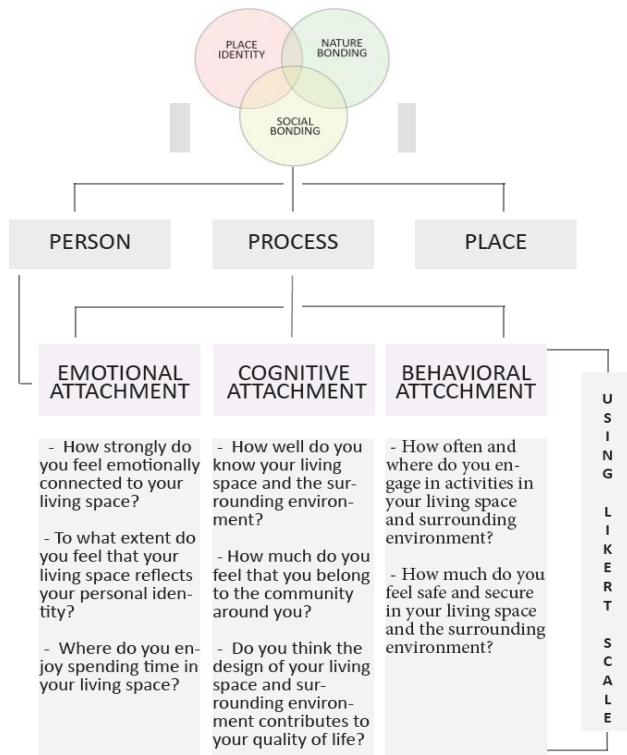


Figure 2. Research analysis framework

4. Literature Review

Sense of place

The subjective and emotional ties that people have with a specific environment or area are referred to as a sense of place. It includes people's emotions, meanings, and attachments to a place, which can influence their behavior, perceptions, and general well-being. Understanding the feeling of the place is critical in architectural design, especially for elderly persons, because it plays an important role in improving their quality of life and establishing a sense of belonging and identification within their living situations. For senior citizens, a feeling of place is critical because it can significantly impact their physical, emotional, and social well-being. Individuals' movement and everyday activities may become more constrained as they age, making their local surroundings, such as their living community or senior living facility, much more important. A strong sense of place can give elders a sense of security, familiarity, and comfort, allowing them to feel linked to their surroundings and encourage a pleasant living experience. Architectural design is critical in creating environments that foster a strong feeling of place for senior adults. The architectural elements and features used in the built environment can significantly impact how elders perceive and

interact with their surroundings. Accessibility, safety, comfort, aesthetics, and social contact are all important considerations in creating a feeling of place for elders.

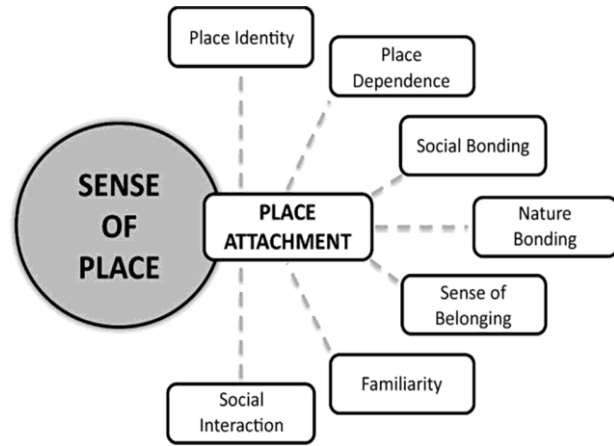


Figure 3. Sense of place with place attachment. Source Steele [4]

Place Identity

Place identity is the process by which individuals establish a feeling of self and belonging in relation to a given location or environment. Individuals' subjective and personal attachment to a particular place impacts their identity, values, and experiences. Place identity is important in architectural design for elderly adults since it improves their well-being, sense of belonging, and general quality of life. The formation of a strong place identification is critical for senior persons since it adds to their emotional and psychological well-being. Individuals may change their responsibilities, relationships, and physical abilities as they age, impacting their sense of self and purpose. For example, senior living communities and retirement homes can serve as a basis for their place identity, offering security, continuity, and meaning. Architectural design is critical in shaping senior citizen's sense of place. The physical characteristics and architectural features included in the built environment can impact how elders perceive and relate to their living situations. Architectural style, spatial layout, interior design, and incorporating personalized and recognizable aspects are all important components in establishing place identity. Spatial structure and function also play an important part in developing senior folks' sense of place. Space layout, circulation patterns, and accessibility elements should be developed to accommodate their everyday activities, needs, and preferences. Designing settings that encourage freedom, mobility, and personalization can empower elders and increase their sense of identity within their living environments. Incorporating community and shared areas into the design can help to build a place's identity. Providing opportunities for social interaction, communal activities, and shared

amenities helps elderly residents feel a feeling of belonging and community. These common places become an extension of their identity, contributing to a sense of connection and involvement with their surroundings. Following that, place identity is an important part of senior citizen architectural design. Architects and designers can develop surroundings that foster a strong sense of place identification for elderly persons by considering architectural style, spatial arrangement, interior design, personalization, and the integration of community areas. Understanding seniors' specific needs, preferences, and personal histories is critical in designing environments that promote their well-being, foster a feeling of belonging, and improve their overall quality of life.

Importance of place attachment for senior citizen

The sense of home is composed of different scale levels, from the connection with the outdoors to the quality of furniture and architectural layout of the room. It is considered significant for the aging process [5, 6]. According to Relph [7], place attachment is a fundamental human need, and there is agreement in the literature about the reciprocal relationship between the wellness of older persons and their ability to feel place attachment [1, 8]. According to Rubinstein and Parmelee [9], the three reasons why place attachment was crucial for older people were to maintain a sense of continuous capacity and autonomy, consistency and continuity during times of transition, and to keep the past alive. Place attachment can help with age-related adaptations by creating a sense of home and assisting the older adult in maintaining self-identity [10]. More broadly, location attachment provides meaning, value, and relevance to people's lives [11]. Sugihara and Evans [12] surveyed 67 older persons at a Continuing Care Retirement Community (CCRC) in the United States to explore an affinity between place attachment and design elements and discovered that it played a mediating role in the social milieu. Their research discovered that the proximity of a local gardening area, the possibility of spontaneous social contacts, and a short walking distance from the residence to the main activity center improved social interaction and participation and consequently contributed to place attachment.

Factors affecting place attachment in senior living communities

Place attachment to a space is influenced by various elements contributing to occupants' emotional connection, contentment, and sense of belonging to their living environment. The physical environment of senior living communities is important in determining place connection. Architectural design, building aesthetics, layout, and accessibility have all been shown to influence tenants' connection to their living spaces. Demographic factors include attributes such as age

and marital status. Different demographic groups can have diverse requirements and preferences with respect to their living environment, which in turn can impact place attachment. Having family around to offer presence and support is an important aspect of the senior living community, and building meaningful relationships with one's family while staying active in the community can foster feelings of belongingness to the place. The quality & accessibility of public facilities & infrastructure plays a crucial role in determining the physical factors within senior-living communities. A built environment's physical design and spatial configuration significantly impact place attachment [13]. Individuals' interactions and movements within a space are affected by building form, spatial organization, and room configuration [14].

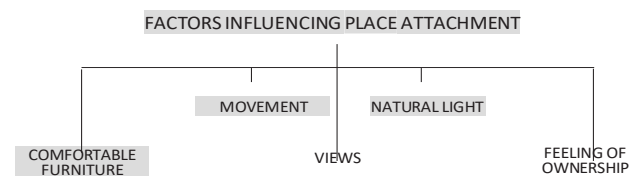


Figure 4. Factors affecting place attachment

Analysis of the case studies

The parameters for conducting analysis have been derived from the background study and theories related to the topic. These parameters are important in analyzing as they serve as factors for studying a particular senior living in detail, to understand the socio- cultural factors, the lifestyle of the community, and built form. For this study, the parameters have been divided into 4 main categories: spatial organization, accessibility and movement, natural environmental integration, and social interaction spots.

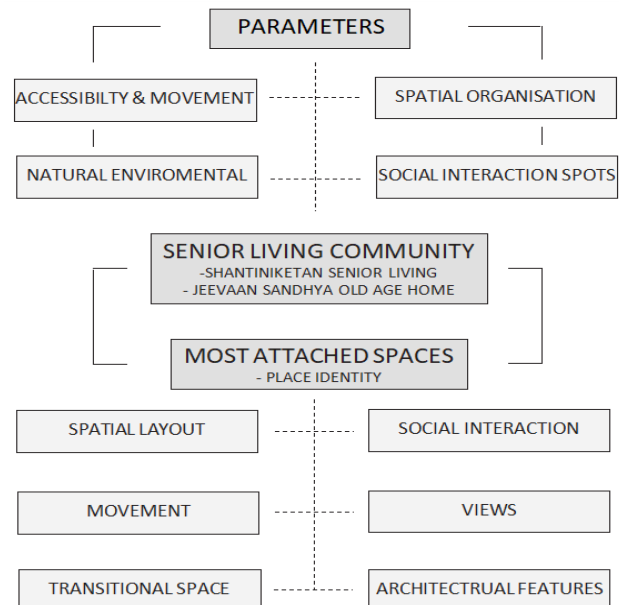


Figure 5. Framework for analysis

5. Area of study

Assisted Living Houses: With the advancement of age, senior citizens require constant medical attention and aid. Assisted living houses are a concept that allows the elderly to live with an assistant, including a family member or a medical nurse or helper. Such assisted living houses are comparatively a newer concept in India but will likely pick up shortly. The advantage of having medical assistance is that it cuts out any traveling time to hospitals, making such homes quite useful for people with medical issues and other disabilities.

Recognizing the decrease in physiological capability in all design features

1. Privacy: Older people require their own space. We must consider resident living routines, preferences, and privacy while designing senior housing.

2. Social interaction: Since older people need social interaction, being alone is highly bad for their physical and mental health. As a result, when considering the inhabitants, there should be room for social contact and resident exchanges.

3. Direction and logo system: The elderly requires a setting with clear direction and a readable marking system to direct them to event areas due to identification issues and memory decline.

4. Safety and comfort: All designs for the elderly must offer a secure interior environment that satisfies their needs for physical and psychological comfort.

5. Disability design: Indoor areas for senior activities must be well-designed for accessibility.

6. Familiarity and continuity: Senior housing designs should incorporate regional customs and provide residents with personal decorating areas to display cherished mementos from their past, such as photos.

7. Light Ventilation issues: Require sufficient light and ventilation in the residential design elements for the elderly.

Shanti Niketan senior living, Ahmedabad

The layout of Shantiniketan Senior Living is designed to prioritize ease of access and create a welcoming and functional environment for senior citizens. The community consists of two identical floors, with each floor housing 40 individual room units. The rooms are big and well-designed, with a small pantry and individual bathroom. At the entrance, a common double-height space welcomes residents and visitors, creating a sense of grandeur and warmth. The community's large corridors connect diverse sections, providing seamless mobility and easy navigation. To ensure the safety of senior citizens, especially those with limited mobility, these corridors are well-lit and barrier-free. The huge central courtyard, which acts as a focal point and gathering space for residents, is a significant aspect of the layout. The activity and

dining halls have been planned to ensure all rooms have easy access. The property has two floors. The ground floor and the first floor are identical. All the administration and activity rooms with 30 private rooms are on the ground floor while there are only private rooms and semi-open terraces on the first floor.

BEHAVIORAL ATTACHMENT

Behavioral Attachment					
Likert Scale Statements	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
How often do you engage in activities in your living space and surrounding environment?	8	4	7	14	7
How much do you feel that your living space and surrounding environment are convenient and accessible for your daily activities?	3	6	5	17	9
How much do you feel safe and secure in your living space and surrounding environment?	2	4	11	18	6

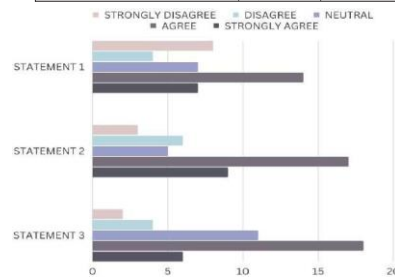


Figure 6. Field survey of behavioural attachment

EMOTIONAL ATTACHMENT

Emotional Attachment					
Likert Scale Statements	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
How strongly do you feel emotionally connected to your living space?	2	4	7	12	15
To what extent do you feel that your living space reflects your personal identity?	3	5	10	11	12
How much do you enjoy spending time in your living space?	1	6	11	14	9

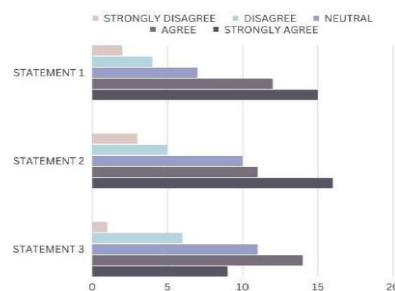


Figure 7. Field Survey of place attachment


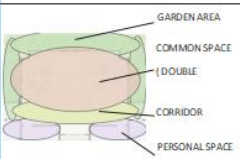

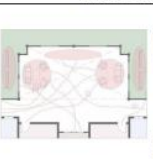


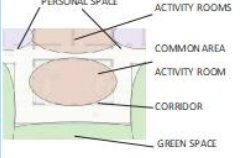

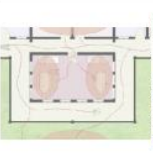
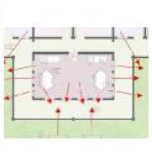

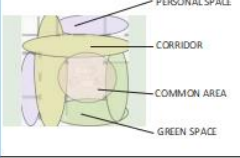




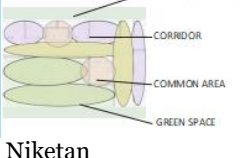
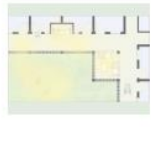

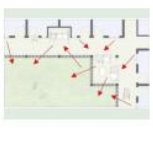
PLACE	SPACE LAYOUT	SOCIAL INTERACTION SPOTS	MOVEMENT AND ACTIVITIES	VIEWS
 <p>DOUBLE HEIGHT SITTING SPACE</p> <p>NO. OF TIMES REPEATED BY PARTICIPANTS-</p>	 <p>GARDEN AREA</p> <p>COMMON SPACE (DOUBLE)</p> <p>CORRIDOR</p> <p>PERSONAL SPACE</p>		 <p>dynamic environment with significant movement and interaction opportunities in the semi-open double-height space and the adjacent green shaded area, featuring strategically placed sitting</p>	 <p>semi-open spaces surrounding the sitting area allows for direct sightlines towards the expansive courtyard and other wings of the building, fostering a strong visual</p>
 <p>ACTIVITY</p> <p>NO. OF TIMES REPEATED BY PARTICIPANTS-16</p>	 <p>PERSONAL SPACE</p> <p>ACTIVITY ROOMS</p> <p>COMMON AREA</p> <p>ACTIVITY ROOM</p> <p>CORRIDOR</p> <p>GREEN SPACE</p>		 <p>Facilitate significant movement and foster interaction within the activity room, gym, and library by utilizing the corridor as a transitional space connecting these areas.</p>	 <p>Incorporated large windows in the activity room to allow ample natural light and views of the surrounding green spaces.</p>
 <p>SEMI OPEN CORNER SITTING SPACE</p> <p>NO. OF TIMES REPEATED BY PARTICIPANTS- 8</p>	 <p>PERSONAL SPACE</p> <p>CORRIDOR</p> <p>COMMON AREA</p> <p>GREEN SPACE</p>		 <p>Promote significant movement flow around the corridor corners by incorporating sitting spaces that seamlessly connect with the adjacent green space</p>	 <p>The sitting space outside each room offers unobstructed views of the open spaces, while the room windows facing the corridor enhance the visual connection</p>
 <p>SITTING SPACE IN THE CORRIDOR</p> <p>NO. OF TIMES REPEATED BY PARTICIPANTS-</p>	 <p>PERSONAL SPACE</p> <p>CORRIDOR</p> <p>COMMON AREA</p> <p>GREEN SPACE</p>		 <p>Major movement and social interaction in the corridor space with a swing niche and transitional sitting areas between rooms.</p>	 <p>The seating areas on the first floor offer captivating views from the corridor or balcony, overlooking the courtyard, while the rooms provide direct visual access too</p>

Figure 8. Case study of Shanti Niketan

CONCLUSION

As populations' age and urbanization accelerates, senior living communities are increasingly being designed as holistic environments that go beyond accessibility and functionality. While much of geriatric-focused architecture emphasizes universal design principles, this research underscores the importance of emotional and psychological engagement with space. The findings indicate that place attachment is a fundamental factor influencing seniors' mental health, social connectedness, and overall quality of life. Seniors develop deep emotional ties with their living spaces, shaped by memory, familiarity, cultural identity, and opportunities for social interaction.

Key findings and contributions

Spatial organization and familiarity:

Architectural design should emphasize clear, intuitive spatial layouts that enhance wayfinding, security, and comfort.

Small-scale, home-like environments with familiar cultural and regional elements foster a sense of continuity and place attachment.

This research highlights that place attachment should be a fundamental objective in designing senior living communities, rather than an incidental outcome. Architects, urban planners, and policymakers must recognize the multidimensional role of architecture in shaping experiences of aging. Designing spaces that encourage emotional

connections, social engagement, and personalized interactions will help transform senior housing into environments that foster dignity, autonomy, and a sense of home.

Future research and design initiatives should focus on:

- Longitudinal studies on how architectural features influence long-term place attachment.
- Exploring innovative, flexible housing models that accommodate diverse senior needs.
- Sustainable, climate-responsive designs that integrate traditional and contemporary elements.
- Policies that prioritize mental and emotional well-being in geriatric housing development

DECLARATIONS

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Data availability

The datasets used and/or analysed during the current study available from the corresponding author on reasonable request.

Funding

This research received no external funding.

Competing interests

The author declares that there is no competing interest.

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