

"Building community living housing for the elderly people in India"

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Abstract:

In today's time, health is the topmost priority of every individual. A person can take care of himself/herself till a particular point in life, but at a certain age, one's dependency on someone arises. The harsh living environment is constantly degrading the living standards and deteriorating every individual's health. So, there is a need for a place where a person can be taken care of at any point in time arises. Senior housing is one such place that provides all the comforts to elderly people. It is a homely place where people can enjoy the remnant part of their lives. Senior housing provides all kinds of facilities at the doorstep, providing the utmost comfort to the users. A large part of the population lives on their own, and there comes a time when the need for dependency increases so the senior living housing can fulfil all their needs at any point in time. The in-house services, which includes medical services, recreational areas, emergency services, and many others, serve as one of the best means of comfort to the users, and they can live peacefully and with the thought of being taken care of at any time.

Introduction:

In India, elderly population has grown from 5.6% in 1961 to 8.6% in 2011. It is expected to reach 12.4% by 2026 & 23.6% by 2050 as per the Census projection. Preference for nuclear family systems, urbanization, independent living trends in youth has led to a decline in the sense of social security physical & psychological wellbeing of the elderly. There is a large population of the elderly living on their own. The constant increasing age can become a barrier, and the need for external support increases. The model of senior living housing focuses on such aspects providing them with all the needs ranging from medical support to their daily needs at their doorstep. It focuses on providing every aid to the elderly at any time to provide them with a better sense of living. Senior living housing aims to provide a better social environment to interact with the same age group.

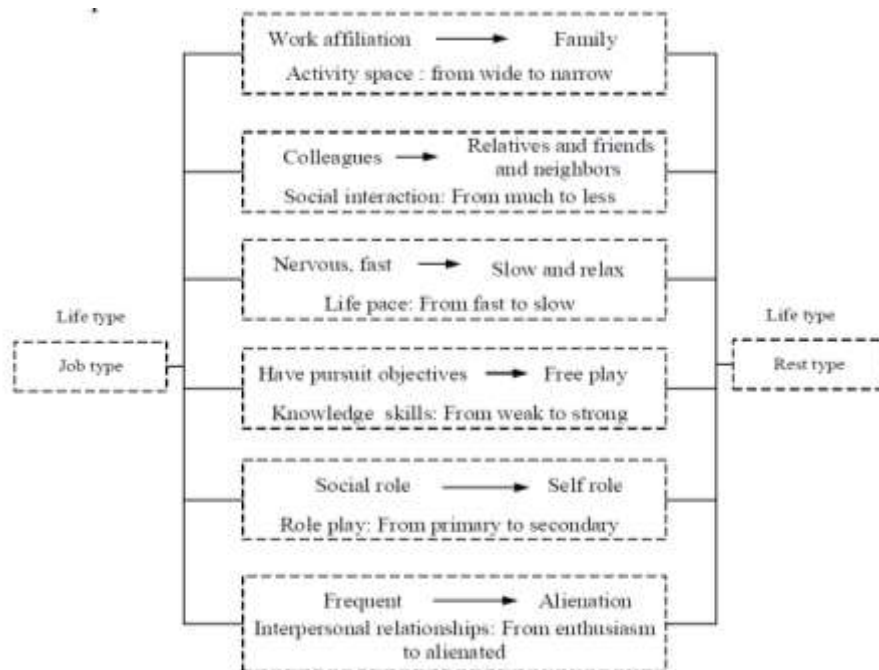
Research Methodology:

The lack of support to the senior age group increases the demand for community living housing. The children living away from their parents due to job or study-related reasons or whatsoever reasons need to make sure that their parents are living safely and being taken care of at any point in time. These significant problems lead towards the increase in developing a pleasant and safe place. Looking at these factors, the research will be conducted by understanding the different census trends on the seniors and how it affects them to move towards the community living housing. This will include monthly expenditure, age distribution, the elderly population living alone, and other demographic factors. Further one-to-one interaction will be conducted to understand their thought process and react to different kinds of spaces. A complete architectural-based research will be conducted to understand what kind of spaces, the environment, the climate will be the best suitable and which type of environment will be the most suitable and preferred for the elderly population.

Characteristics of the Elderly people:

Every age group has its requirement and needs, and it keeps changing with the increasing age. Going into old age has a major transition and is very sensitive. A good quality environment is needed as this sensitive age requires a lot of care and attention. The person's lifestyle completely changes, and accordingly, changes in design are required varying from door heights to different support handles to be put up.

Changes in the living patterns: The elders go through a large change, especially in their bodies and the different problems. The visual, auditory, tactile, walking hindrances and other physiological problems require special attention and need to be dealt with, so the design plays an important role. The spaces have a direct impact on the person's mental as well as physical well being.



Changes in the living patterns of the elderly (Yanli, 2015)

Study on the outdoor spaces:

Nature has proved itself in every way as a healing source that benefits seniors and contributes to every age group. Creating a therapeutic environment will help improve the architectural conditions and will help in keeping one's mental as well as physical health intact. During the early 21st century, research was conducted where neuroscience and architecture came up together to study their relations and how they significantly affect one another. "The mission of the Academy of the Neuroscience for Architecture is to promote and advance knowledge that links neuroscience research to a growing understanding of human responses to the built environment" (Sugandhi, 2015). The outdoor spaces have always played an important role for the elderly. The senior population spends much time outside enjoying the greenery and calmness of nature. "There is clear evidence that people are at lower risk of infection when spending time outdoors, practising social distancing and wearing masks, than when following the same precaution indoors" (Bonvissuto, 2020). Outdoor spaces have their potential benefits, including 1) Increased physical activity, 2) healing effects of sunlight, 3) Contact with the outdoor elements. These factors help comfort the body promoting better sleeping levels, improving cortisol levels and reducing respiratory infections (Babyak, 2001).

i. Integration of spaces according to climate and wellbeing

A senior living place needs to be designed to feel warm and comfortable, enjoying every comfort of spaces designed for the user. The outdoor spaces have to be given much thought while designing as these are the most used spaces for a gathering or sometimes just enjoying nature. The climate of every place varies, so the design accordingly varies for the outdoor and indoor spaces. In typical winters, the outdoor spaces should be shielded from the harsh cold climate through design barriers which generally include nature. Studying the wind directions, the sun path, and different heat zones on the site can help design a comfortable microclimate of that place. The plants and the local vegetation play an important role in the heating, cooling, and lighting a particular area. Although the plants are mainly used for aesthetical purposes, they have functional benefits. They act as windbreakers in the winter and shading devices in the summer. They will also help control air pollution, the level of carbon dioxide and increase the level of oxygen in the local air, one of the major attributes required in senior living housing. Every outdoor space should give a feeling of comfort as nature will play the act of healing.

ii. Landscape design for the elderly

One of the most important features to be incorporated while designing outdoor spaces for the elderly is a barrier-free and universal design. According to numerous researches, the therapeutic landscape is the most suitable when designing for the elderly as it provides for a sense of openness and healing. The term therapeutic landscape was first characterized in 1992 by the geographer William Gesler as a "where physical and built environment, social conditions and human perceptions combine to produce an atmosphere conducive to healing" (Bruno Marques, 2021). People's behaviour is profoundly implanted inside a place, especially around wellbeing (G, 2017). Places should be defined because they are conducive to healing and places conducive to maintaining health and wellbeing (Khachatourians, 2006). Implementing therapeutic landscapes when designing for the elderly can prove beneficial to their physiological and psychological health. The research shows the use of natural elements available while designing therapeutic landscapes.

Apart from following the technique of universal design is very important. There is a constant declination in the health of every individual, especially the elders. Two in every three senior citizens in India endure a few incessant illnesses, according to the first Longitudinal Ageing Study in India (LASI) released by the Union Ministry of Family and Health Welfare on January 6, 2020.

According to the different problems, there should be proper design considerations for every person suffering from any disease ranging from Alzheimer's to any small disease. A huge consideration is taken when designing for the elderly is eliminating steps and providing smooth moving surfaces or obstacle-free areas. The crucial thing is to keep a design that is not complex but easy to understand, and the user effortlessly communicates with the surroundings. The maximum comfort is to be provided to eliminate the feeling of tiredness while a person wants to enjoy nature. Every step towards a universal design should be well thought of from all directions. The built environment can impact the engagement profiles of older adults both positively and negatively (Demirkan, 2007). Therefore, it is essential to consider specific examples of universal design that can allow for positive changes to engagement levels and ultimately promote successful ageing (Kelly Carr, 2013). Urban open spaces and landscapes also help promote the social environment among the people living the senior housing. The lack of proper gathering spaces between nature will lead to loneliness, and it will be a complete failure to make harmonious relationships between the residents.

iii. **Site planning and accessibility**

A complex design will increase problems for the elderly rather than a simplified design. The whole process of circulation inside the site should be thoroughly planned out. There should be every kind of amenity provided to reach any part of the site, whether it be a garden or their residential unit from the entrance gate. Long-distance walks are to be avoided to minimize the physical effort. Maximum effort or long tiring walks can affect the elderly as it will become a reason for not participating in social activities or gatherings, so short distances with resting spaces after certain distances are required. The steps should be minimized or replaced with ramps that are easily accessible for the people walking down or for wheelchair access. The planning should be done so that everything is close to each other, whether shopping complexes, recreational zones, gardens, or residential areas. The roads should be planned so that they do not hinder the walking paths to avoid any mishappening. The moving paths should be objects free, thus reducing the effort in the person's physical movement.

Accessibility: The most important thing is to create an obstacle-free/barrier-free design. Old age requires a set comfortable design due to specific difficulties. There is a difference that one thing may be just normal for a young person, but it may become an obstacle for the elderly. Therefore, a reduced number of levels or steps and continuous flow design must be followed.

Legibility: is the ease with which a reader can decode symbols; in addition to written language, it can also refer to behaviour or architecture (Jerry, 1981). Full use of all kinds of auditory and tactile design means should be used. This will create a sense of direction and make the design simple without any difficulties for the elderly, especially for the disabled.

Easy to reach: It refers to comfort and convenience to reach a place. The design should be so that it helps promote the elders to participate in any activity. It is important to have proper wheelchair access from the entrance to the gardens and then to their residential units. All kinds of facilities should minimize their physical effort in moving from one place to the other.

Study on favourable interior spaces

i. **Circulation inside the building**

The Interior of the buildings plays an important role for the elderly. The major thing that comes into play is the circulation of the building. Once the user has entered the building, a feeling of homeliness should be developed rather than a new place. Becoming comfortable and habitual to an environment is one of the major factors in designing. Also, user comfort and physical mobility come into play while designing. Using building information modelling, the qualitative approach towards the indoor walkability index should be considered. All kinds of elders suffering from different disabilities will operate inside the building, so a continuous flow of movement is required. Firstly, elders who are physically impaired or, in simpler words using wheelchairs should be able to access every part of the building without any hindrance. Wheelchair accessible lifts are to be provided reaching the very floor, and the user does not have to travel much inside the building to reach their residential unit. A free-flowing design is needed blending it with the outdoor spaces. Combining the interior spaces with the outdoor spaces plays an important role in helping people to connect with nature. The users should feel the nature and enjoy it while they move to their apartments. The circulation should be planned so that different courtyards and outdoor spaces should be visible to keep the user in mind in the process of healing through nature, and then they can access their residential areas. The Interior of the residential spaces

ii. **Study on interior spaces and the furniture inside the habitable space**

Older adults spend the major time in their residential units. Comfortable living space is required which suits their lifestyle and their daily needs. Firstly, the major important part comes is the movement inside their apartment. The basic idea is to reduce physical movement. The bedrooms and the living, which is the most used space, are centrally located, thus reducing the distance they walk. Providing them with the maximum of natural light is important; thus, maximizing windows on the north and south side of the building will help a lot during the morning and late in the evening. A green outer space/ balcony is to be provided with landscape views of the outside that will help solve the phenomenon of healing through nature. The moving paths and the door sizes are to be wide enough so that a wheelchair can pass without any hindrance.

A notion of being outside while being inside is to be created to create a trapped space. One of the features that can be done is incorporating enough natural light inside the most usable spaces.

The material and the finishes play a significant role inside the habitual space. Sound-absorbing materials are always essential to increase the peace inside their space. "In senior housing, noise is produced wandering by people residing, their guests, visits by family and friends, and more staff turnover" (Rogers, 2015). The play of colours also affects the wellbeing of the elderly. Using

contrasting colours can help in finding the way for the visually impaired. It is relatively easy to figure out light and dark colours rather than cool and warm colours. A cool colour or monochromatic colour scheme may not be preferred as it will seem similar to visually impaired people. Sharp objects and furniture should be avoided as they can hurt the elderly.

People suffering from memory loss can be a challenging process to deal with for architectural design. Long corridors and different spaces away can make them forget their way; thus, a memory wall is also to be created at different places in the building that will help direct them towards their unit.

The temperature on the inside is also to be maintained naturally. Providing windows on the windward side of the building during summers will help regulate the temperature. Furniture also plays an important role. Comfortable chairs without movable armrests are preferred over fixed ones to have comfortable seating. Also, support handles are provided inside the bathrooms for the user to hold them while getting up. The interior elements are chosen that blend carefully with the interior environment.

I. Recreational Spaces

The outdoor recreational spaces are a daily part of everyone's life. In senior living housing, various activity areas are designed to keep a friendly environment that solves the purpose of keeping their schedule busy and helping them socialize among their age groups. Recreational areas include outdoor activities ranging from the gym spa to mental exercise zones. Being active and participative in activities increases the person's age and has important significance on the health and wellbeing of the person. Outdoor activities outside among the landscapes for wellbeing have promoted an individual's health (Kiran, 2014). The recreational spaces have to be designed with special provisions for the elderly, considering the different disabilities. In open spaces in or near parks, physical health benefits occur in the context of subtle mental and emotional aspects of perception (Lene Levy-Storms, 2018).

i. Study on outdoor recreational spaces

Outdoor recreational zones are to be created in senior housing to keep a sense of activeness. Different kinds of activities are taken up most basic being walking. These activities increase the fitness levels, inner health, and social interaction spaces. It is making a therapeutic environment for the mind and the body. Yoga and meditation halls are created well connected to the landscapes to help relax the mind. Most seniors prefer to relax their minds through different yoga practices. Mental exercise zones are one of the most critical areas needed to be created. The crosswords puzzles, brainteasers, and sudoku help exercise the mind, which will help prevent serious old age problems like Alzheimer's disease. Community centres are to be made where elders can socialize among themselves. Group discussions where people can talk about their lives are socializing ways. Human libraries are created differently from standard libraries where elders do not feel lonely but have people who listen to them.

Discussion

As the seniors experience a change in their lifestyle while they transit into the retirement age, external care arises, especially for those living on their own. While researching, different requirements arose according to their needs. The outdoor spaces have been studied and how these spaces can enhance living standards. A brief study on therapeutic landscapes has been done, and these features can be incorporated into the outdoor spaces to make a comforting environment. The Interior of the spaces also has to be thoroughly studied, and the best circulation is studied as the elderly are suffering from different diseases, and it develops requirements of their own. It can be concluded that there is a need for better architectural features in retirement homes that help in supporting their health and wellbeing. The site features play an important role in wellbeing. The flora of the outdoor spaces has to be studied, which helps balance mental health. The attention towards shading, water features, sun movement, natural lighting should be carefully examined to create a more habitable environment.

Conclusion

This study provides fundamental analysis and research on providing the best environments in Senior Living Housing. This research has explored the best indoor and outdoor spaces that can be created and have the most suitable environments for the elderly. It presents how outdoor spaces can be designed and planned to provide all the amenities. The elderly go through a drastic change while moving to a retirement home, so the environment should provide a homely feeling, eliminating being away from home. So, the research proceeds while considering both the person's social and physical factors while moving to a retirement home.

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