

# GERIATRIC FRIENDLY INTERIORS: ENCOMPASSING THE ELDERLY IN THE DESIGN PROCESS

Ashima S<sup>1</sup> Sandeep Singh<sup>2</sup>

<sup>1</sup> B.DES, Student, Interior and Furniture Design, School of Design-II, Lovely Professional University, Punjab,

<sup>2</sup> Assistant Professor, Interior and Furniture Design, School of Design-II, Lovely Professional University, Punjab.

## Abstract

To generate effective designs for the aging population, ergonomic designs that are followed by accurate anthropometry are to be considered. After retirement, people tend to move into their comfort zones which gradually results in the retardation of brain activities as well as physical activities. “GERIATRIC “GERIATRIC FRIENDLY INTERIORS”- Geriatrics is a medical term that is related to the overall healthcare (both mental and physical) of the elderly people (above 60 years of age). It can only be altered by adding some interesting factors into their existing living space which helps them to boost their mental and physical activities and so does keep them away from deadly conditions. And it is equally important to understand their restrictions and problems which are related to living space to achieve effective planning. Other than the limitations or difficulties faced by the aging population, it is also crucial to understand the selection of proper material while designing an age-friendly space for the elder population. Thus, it is very important to encompass the preferences of the elderly population while designing any space for their productivity, life quality, self-dependence, and wellness.

**Keywords:** Geriatric, health, Old age, Design, Interiors.

## 1. Introduction

“GERIATRIC FRIENDLY INTERIORS”- Geriatrics is a medical term which is related to the overall healthcare (both mental and physical) of the elderly people (above 60 years of age). Apart from medical conditions, it is equally important to provide a better- and high-quality space for the aging population in order to maintain their health, as interior plays a vital role in day to day lives of every individual. Designing for senior care environment is crucial as well as challenging because of the gradual loss of visual, hearing, mobility, muscle strength, reflex and other senses, as aging is a natural on-going process.

After retirement, people tend to move into their comfort zones which gradually results in the retardation of brain activities as well as physical activities. This lead to the development of condition such as Dementia (a group of disorder characterized by damage of at least two brain functions, such as memory loss and judgement). Around 65% of aged population depend on others for their daily maintenance. A study says that, human body gets adjusted with the surrounding area depending up on the type of life style they follow which will have an impact on their body structure and functionalities. It can only be altered by adding some interesting factors into their existing living space which helps them to boost their mental and physical activities and so does keep them away from deadly conditions. Thus it is very

important to encompass the preferences of aged population while designing any space for their productivity, life quality, self-dependence and wellness. And it is equally important to understand their limitations and problems which are related to living space to achieve an effective planning. Other than the limitations or problems faced by the aging population, it is also crucial to understand the selection of proper material while designing an age-friendly space for the elder population. To generate effective designs for the aging population, ergonomic designs that are followed by accurate anthropometry are to be considered.

## 2. Methods:

### PROBLEMS FACED BY ELDER PEOPLE IN INTERIORS

Interior space has a vital part in upbringing quality of life of elderly because of their progressive loss of capabilities which makes it difficult to perform. Most of the interiors are not designed 'geriatric friendly' which makes them hard to come up with the surrounding space. Interior space affects the aging population mainly in three ways, such as: -  Physical  Psychological  Performance (due to design factors)

These three main factors are further categorized into different forms, which are essential to understand and include while designing an age-friendly space especially for the elderly. The below flow chart depicts the main issues faced/are currently facing by the elder population in their existing living space.

#### LIGHTING (natural and glare free light)

Problems with lighting can cause distress in elderly population regarding vision.

From the age of 40, an average person's eyesight reduces gradually which can lead them to fall somewhere and risk their life. Studies have found that (Department of health and aging), after the age of 60, a person will need three times lighter in order to get better visibility. This change in light intensity can lead to create issues like glare sensitivity. So, it is essential to provide safety lighting strategy to improve the living state of elder population.

**COLOUR** Because of the inappropriate usage of colour in interior space, visual inadequacy and obscurity occurs. Loss of vision and an increase in vision disorders are very common among elder people. Vision is very much essential to complete every task in day to day life. Colours plays a major role in interior so does it is very important to know the role of colours as it creates an assessable environment which is very crucial for elder people. Colours have the ability to attract elder people's attraction and it also helps to see and accomplish certain targets.

**FLOORING** Improper flooring and wrong usage of flooring materials leads to falling and it also increases the fear of falling. Flooring is always an unavoidable design factor. Smooth and polished flooring can cause slippery issues which is a risk for elder people. So the flooring should be always slip resistant

as well as less reflective, especially in toilets. Ramps and railings are essential while designing for the elder people.

**LEVEL DIFFERENCE** (steps and barriers)  Stairs and barriers creates problems in interior especially for the elderly as it is difficult for them to climb the stairs and difficulty in accessing the indoor areas due to the barriers in paths.

Aged population faces conditions like arthritis when they reach the age of 60 and also leads to decreased muscle strength. Studies shows that most of the death and hip fractures which may lead to death among elder population is due to falling while climbing stairs. So it is preferred not to provide any stairs or other level differences in order to avoid unnecessary falling issues. Apart from stairs slopes of 12 degree, which are slip resistant can be provided in interiors for the easy access of wheel chairs.

**ACCESSIBILITY** (circulation)  Problems with interior circulation can cause issues for the elder people as it creates mobility issues.

Circulation, orientation, relationship between interior and exterior spaces and easy access plays an important role while designing an age friendly interior. For improving the better accessibility for elderly, it is preferred to provide rooms accessible within closer proxemics having good circulation. It avoid the fear of falling among the elder population as it can make them dependent on others as well as social isolation which further leads to depression.

**FURNITURE** (ergonomic friendly) □ Improper furniture design can cause physical damage among old people.

After the age of 60, it becomes a challenging task for the elderly to stretch and reach out to objects as it can cause pain in body especially joint pain which gradually reduces their daily activities. Chairs which are designed improperly can lead to back pain issues as well as sharp edged furniture can cause injury. Therefore, it important to choose safe, comfortable and accessible furniture for elder people as it plays a

**VENTILATION** □ Improper exchange of indoor and outdoor air causes health problems as well as impact the liability for elderly.

Harmful pollutants like carbon monoxide and moisture in indoor areas can cause damages. Moisture can cause health issues as it creates molds and damages the insulation. So, providing a proper ventilation is very important.

**ACOUSTICS** (less echo & better quality) □ Improper acoustic design can cause damage in hearing due to echo problem and high frequency sound.

Loss of hearing is another common issue found in elder people. So, it is very essential to compensate for loss of hearing with design measures for making and creating an age friendly interior.

## **PHYSICAL FACTORS**

These are the issues faced by the elder people because of severe physical conditions and wrong impact of built environment. Studies has proven that, individuals those who face difficulty in vision also faces issues in mobility and increases the risk of falling.

**VISION** Reduction in eyesight is a common condition among elder people. It causes abridged ability to identify pictorial facts, less contrast sensitivity, difficulty to adapt with change in light intensity, glare sensitivity, depth perception and difficulty in colour identification. Studies shows that, diameter of pupils in eye reduces due to aging which lead to the requirement of more light in order to identify the shapes and fine details of any object. Glare free lighting, increasing the illumination, adequate contrast level and consistent lighting is very important while designing age friendly interiors. It is also preferred to provide adequate natural light as it balances the circadian rhythm as well as the endocrine system of body. Improper lighting cause's reduction in comfort, creates confusion and anger in elder population. So matte finish shades, wall coverings and soft shapes are recommended as they have an influence in sentiments and health.

Highly saturated colours such as hues of red, oranges and yellow are recommended as it's easy for elder people to perceive these colours. Colours which are having high brightness are also visible and recommended as colours enhances the potential of aged ones.

**AUDIBILITY** As mentioned above audibility is also a common factor that fades with age. Loss of hearing can lead to self-doubt, self-esteem and causes bad impact on physical health. Improper acoustics causes frustration, elevated blood pressure, sleep disorders and heart diseases in aged people. So it is very important to select interior surfaces and furnishings which have good amplification of sound level. Also wall niches, ceilings with irregular sections and use of proper flooring material is recommended.

**STABILITY** Aging is a natural process and it results in gradual increase in diseases that affects the stability of aged people. The stability of one's body has direct link with psychological factor called fear of fall. If you are not stable then the fear of falling can increase. So stability of elder people can be improved by providing sloping surfaces, slip free flooring and by providing grab bars to avoid falling.

## PSYCHOLOGICAL FACTORS

Studies shows that elder people take more time in completing simple tasks when compared to younger generation. They tend to isolate from society and moves into comfort zone which creates mental fear gradually. These can be altered by changing their normal life style like isolating from other people and it is better to engage in activities to stimulate the brain activity in early stages which can provide them a better life afterwards.

**SECURITY** Loss of mobility and energy leads to loss of self confidence among elder people, which gradually creates fear and lead to isolation and depression. Use of advanced technologies (home automation) can be adopted here to provide better safety for them. Providing them with such sources make them feel better as well it enhances their quality of life.

**FEAR OF FALL** The changes in physical ability due to aging is one of the reasons of creating distress of fall. Design aspects and physical aspects have a straight link in developing such fear among elder people. So it is important create fearless interiors by removing barriers, stairs, slippery surfaces etc... That impact the lives of elder people positively and provide them a better life.

### 3. Results:

#### **BEHAVIORAL GERONTOLOGY** (behavioral study of the elderly)

Indian elderly population is increasing steadily each year. Most of the psychiatric issues among the elder population includes dementia, anxiety disorders and depression. The aged populace was around 7.1% of total population in 2001 and is expected to rise by 10% in the year 2021. The studies show that by the year of 2050, the overall population of India will increase by 55% where the elderly population (from 60 years and above) will increase by 326% - 700%, which has resulted an increase in number of elder populations in the total population. The rapid change in Indian family system have made the situation of elder people more prone to psychological problems.

According to recent studies, the old age dependency ratio has increased from 10.9% to 13.1% as a whole, that is around 65% of the aged people depend on others for their daily living.

Prosocial behaviour is one of the existing and important among the elder population and it has been noted that people who are socially, physically, psychologically and financially are more into helping behaviour/prosocial behaviour. The prosocial behaviour helps the elderly to maintain a good mental health and helps them to live a healthy life. Because of age restrictions they may not be satisfied and happy and more vulnerable to losses like physically weak, socially dependent, psychologically harmed, daily hassles and abuse etc...

Other than lonesomeness, day-to-day and lasting stress, absence of societal backing, economical aspects such as job loss and retirement can also a cause of distress among the elder population. Studies shows that, the senior citizens face loneliness issues due to reasons such as living without help, having poor family ties, lack of participation in social and other cultural activities. Also, it is said that older adults prefer to be friendly with people of their age. The well-being of an elder person totally depends upon the behaviour or personality they possess. Studies have found that, low levels of dominance and frequent negative thinking are more found among the elder people, which shows more depressive symptoms as well.

There are several studies which proves that optimism and happiness leads to healthy ageing.

### 4. Discussions:

#### **AGEING ERGONOMICS AND GERIATRICALS**

Remarkable similarities can be found between these two disciplines. Ergonomic has an important role in human's safety as older adulthood is characterised by variation in physical and other cognitive abilities. It is normal to face changes in health, low visual and auditory abilities and difficulty in moving from one place to another place when you get old. Since we are living in an environment that expect us to be self-sufficient and independent which makes the elder population to feel that their surroundings are not designed with them in mind. The designs should suit their

needs and the interaction with the environment. By improving the surroundings of elder people through ergonomics can help them to maintain a good quality of life.

## 5. Conclusions:

### AN INDOOR SPACE FOR RECREATIONAL ACTIVITIES

Recreational activities (activities which people do for fun or in their leisure time, which is essential for our human body) plays an significant role in improving the quality of life of the elderly. Apart from improving overall health of the older population, it also helps them to socialise with other people and improve their skills in various way, which gradually enhances their mental health and help them to live a healthy longer life. Half of the Indian older population are not aware of the positive potential values of these recreational activities, which is why they tend to move into an isolation period after retirement, and eventually falling into depression.

India and China is the major countries within the region of Asia and have a noteworthy proportion of world's elderly for the reason of the increased number in population. In recent years, India is witnessing an increased number of elder people which can lead to the number of individuals at risk for chronic diseases.

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