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New Approaches to Contemporary Elderly Care Home Design

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Abstract

In a developing world today, elderly citizens need extra care and attention. Still, at a point, family members may not be able to provide proper attention to their older ones for various reasons, which may include busy schedules, the skill required, and equipment; hence, a care home becomes an option that can provide a sustainable living environment for the older people. This paper describes socialization as a major problem faced by the elderly in care homes, which causes isolation and progresses into depression; hence, it proposes a paradigm shift in design that goes beyond the boundaries of a hospital or an isolation center. The architectural solutions propose creating a safe space where the elderly can make new connections and rediscover themselves by integrating a vocational school with the elderly care homes that meet the social needs of elderly citizens, providing them with an adaptive and conducive space. Identifying the needs of elderly people is one of the factors considered very important, as it is necessary to understand that the care of elderly people can be a bit challenging because they become very sensitive as they age.

Keywords: Elderly; care home; socialization; vocational school; Türkiye.

1. Introduction

The world's population is aging as older people are increasing in number and making up a significant portion of the population in almost every country, affecting nearly every aspect of society like housing, the financial market, transportation, and security (World Population Review 2020). The World Health Organization is one of the organizations that has drawn attention to the rapidly aging population by providing statistics on population growth. Some good examples of elderly homes in Austria and Spain explain how health and architecture are being integrated into an architectural form and space; these will be studied accordingly to help achieve the goal of a suitable living facility, using building structure approaches like social spaces, lighting, colors, ventilation, equipment, and materials. These are some of the key guidelines regarding the importance of health in architecture. It is believed that elderly people should be cared for with extra help in facilities as they become frail from old age ailments.

This research aims to solve the problems elderly people face with their social lives in elderly care facilities by using architectural approaches to provide social spaces, opportunities for interaction, and mingling amongst each other. The US Census Bureau's world population clock estimated that the global population as of September 2022 was 7,922,312,800 people. The world's population continues to increase by roughly 140 people per minute, with births outweighing deaths in most countries (World Population Review 2020).

Many people imagine retirement age as a time of leisure, uncomplicated, peaceful living, relaxation, and travel time; however, this idea of retirement does not occur very often due to several factors like the economic situation, environmental features, and general quality of life, because old age brings several obstacles that should be improved by providing necessary living requirements for the elderly. Due to the world's population, there is a growing population of elderly and retired people who need better care in a sustainable and healthy environment, creating an urgent need for sustainable retirement homes (Afara et al., 2024; Amen et al., 2024). According to Expat Focus, care for the elderly falls into three categories: 1. residential homes for the elderly, which can be described as a facility that provides accommodation, feeding, and daily care services but is not suitable for elderly people with an underlined medical background. 2. care homes for the elderly, which are described as places that provide accommodation and are suitable for providing medical care for elderly people who require intensive care. 3. Nursing homes, which are similar to care homes, are also owned by the government and are suitable for elderly people who have underlying health issues and need health attention (Focus, 2023).

An elder care home is a facility where elderly people can live and be cared for when they are no longer capable of caring for themselves after retirement. Within the building, there are more amenities such as meal preparation areas,

gathering areas, recreational activities, and health care services, although most of these facilities tend to lack architectural features that enhance social interaction and awareness among the elderly, and hence there is a tendency for loneliness and boredom, which can cause depression and a short life span. Families are now skeptical about taking their loved ones or family members to such facilities; thus, they are now considered not homely enough to provide comfort according to the expected standard of people. Social gatherings and activities are factors that can create a social space that will help in breaking the communication barrier, which is the intended problem that is faced in most care homes and facilities, although not every older citizen may like to participate in group activities (Pardue-Spears, 2021). Because of this, there is an option to participate in personal craft work and keep oneself busy and occupied. Since there are fewer of these facilities that can meet the standard of living to cater for this class of people who need extra care after retirement age, there is a high level of poor or no proper inclusion of social factors considered for the elderly during the design stage of a care home project. In contrast, residential homes, nursing homes, and hospitals accommodate a small percentage of the elderly population, and aging demographics show that this number will continue to rise in the years to come (World Population Review).

Health in architecture practices minimizes health hazards through design solutions that improve industrial hygiene, air filtration, water sanitation, and so on. The goal of architecture has been variously stated as improving human life, creating a more liveable and sustainable constructed environment, and creating functional places for human activities. Through the deliberate construction of space, surface, and detail, architecture can enhance our everyday experiences from ordinary to magnificent, as well as comfort, uplift, and delight people. It can generate order and inspiration from architectural materials, which can later be applied to human activities. The power of design to influence the physical and emotional health of people who live, work, and play in the spaces produced by architects is implied in these objectives.

When designing for the elderly, aging mostly refers to people between the ages of 65 and above. During this period, retirement occurs in different aspects of life, and special care is required for people who fall under this age group. This constructed setting aims to promote good physical health. Reduced eyesight, poor hearing, mental acuity, mobility, social isolation, and other ailments are some of the factors that affect the elderly. In an aging society, a healthy architectural design that decreases the risk of harm and meets the everyday needs of people with disabilities becomes more significant. This research aims to develop a better functional environment that improves the quality of life while making the accommodation safe and homely to make them feel at home, hence presenting a contemporary elderly housing model while considering major social needs that provides a space where user interaction and social needs will be met among the users.

2. Materials and Methods

Several approaches were utilized during the analysis to identify the needs and solutions of elderly citizens who live in elderly care homes in Türkiye. Several case studies were examined, some existing studies were reviewed and lastly, the behavioral background of elderly citizens was studied.

Case study:

Data collection was carried out from several existing projects across continents, such as Türkiye, Japan, Austria, Spain, and France. These existing case studies tried to create an environment that could suit the needs of elderly citizens through several design innovations, which includes Suggesting social spaces such as a social hall, a dining hall, an outdoor garden sit-out space, and bedroom spaces for two people to enhance conversations and interpersonal contact. The use of terracotta, wood, and red concrete was combined to create a friendly ambiance that gives the elderly residents a relaxed feeling of being at home.

One of the project's main objectives was to medicalize the architecture of the building to satisfy the elderly occupants in their daily lives. As a result, an option was considered: little warm "home" rooms that differentiated from the massive cold "hospital". The idea is for residents to feel at ease and at home (with the option of bringing their furnishings), with wood and light streaming in through large windows to the south and transparencies bringing the courtyards' natural beauty inside. Heat recuperation, together with filters and improved building airtightness, as well as energy efficiency gains, provide optimum air quality for this application.

Literature Review

Some studies were reviewed, and after collecting and analyzing the data, Literature Review A examines aging and its connection to the environment, as well as the relevance of housing for the elderly. It also suggests a project in Ümitköy, Ankara, as an illustration of how to make older people and their homes cohabit successfully, and some relevant factors

in designing a living environment for the elderly in Türkiye are discussed. To highlight these factors, the major focus was on two important issues; The Universal design and its guiding concepts; and second, searching for the characteristics of a living environment for other older people to offer a homely environment, which was assessed from the perspectives of older Turkish citizens.

These are some of the approaches that were used to solve the problems faced in designing a living environment for the elderly:

Being able to serve all types of people, whether or not they have a disability.

Offering three distinct living options to meet the unique demands of all users, providing them with the necessary comfort.

Common areas and private apartments (for privacy) supply natural light with a big glass façade, establishing a buffer zone between the complex and the congested boulevard to ensure the security of the elderly, The use of areas with the proper dimensions for those who might have disabilities

Literature Review B suggests that to satisfy social interaction, there is a need for public spaces such as a 'Hall' to create a purpose for interaction and socializing. The setting should allow people to have some level of control over space and interactions, also, the environment should support a diversity of social interactions between its users. The provision of a range of quiet, semi-silent, and socially engaging public areas, as well as giving occupants flexible access to these various settings, should promote people's sense of control over their social connections, as well as the quantity and quality of those interactions. It also encourages a design that takes into account the perceptual, physical, and cognitive abilities of older adults, as it has been discovered that there are performance gaps between younger and older people when it comes to technology accessibility.

Literature Review C termed social isolation as the major problem faced in care homes. Technology was implemented in this case to solve the problem of loneliness in care facilities for the elderly. After the COVID-19 pandemic, social isolation became an important awareness in most elderly care homes because people aged 60 and above recorded a high death toll and there was an emergency call for isolation.

This paper focuses on understanding and identifying the architectural building style that affects the living quality of elderly people in care homes, and finally, resolving the factors that may affect the living conditions in an elderly care home through suggestive architectural design techniques that can help to develop a better functional environment that improves the quality of life while making the accommodation safe and homely. Hence, presenting a contemporary elderly housing model while considering major social needs that provide a space where user interaction and social needs will be met among the users becomes a paramount case. When referring to social needs in an elderly care facility, it is important to know that the level of understanding is reduced and the environment might seem new according to the user type; in this case, there should be careful attention given to the elderly class people who are now of an age that needs gentle care and socialization, which then becomes a problem compared to the family setting they are used to having. Some people come from large family houses, and some come from small family houses where interaction is easy and social life is better. With time, it becomes a problem to switch the space they are used to having, and this can cause a serious setback in their mental health.

The elderly can have interactive sessions and get involved in activities from time to time with the design setup system. history of elderly people in Turkey shows that most people have talents and interests in handcrafts like painting, drawing, pottery, and most especially knitting and sewing. When there are activities like this close to the facility, there is hope for elderly people to get occupied and busy during the daytime when there is less or nothing to do in the facility, This can be a measure of fun or relaxation, With the information given, this paper exhibits the architectural design features that can make it possible for elderly citizens to feel at home away from home in a contemporary elderly care home.

Behavioural Background

Government reports and background checks have helped in understanding the history and behavior of elderly citizens in Türkiye. Understanding the needs of elderly people helps in getting a clear design technique on how to achieve a sustainable environment.

As old age comes, there is a high tendency toward loneliness, especially when family and loved ones are not around, By solving this problem, the facility should feel like a home away from home. Designing a vocational school to relate to the elderly to eliminate loneliness and keep their social and mental health stable. A vocational school is a type of institution that teaches specific technical skills. By merging a vocational school, the students can work in the facility part-time, make some money during their free time, and interact with and assist in the care home from time to time.

Similar to other Mediterranean countries, Türkiye has a strong family-oriented culture. The family members have various social relationships and close ties with their relatives and neighbors. According to research, 46% of Turkish elderly citizens prefer to stay with their sons when they are old, even if the care mostly comes from the daughters-in-law. For some traditional reasons, they prefer to stay with their sons, while 9% choose to stay with their daughters, 14% choose to stay in a care facility, and 27% prefer to stay in their homes and get home care and support (Aysan & Aysan, 2016).

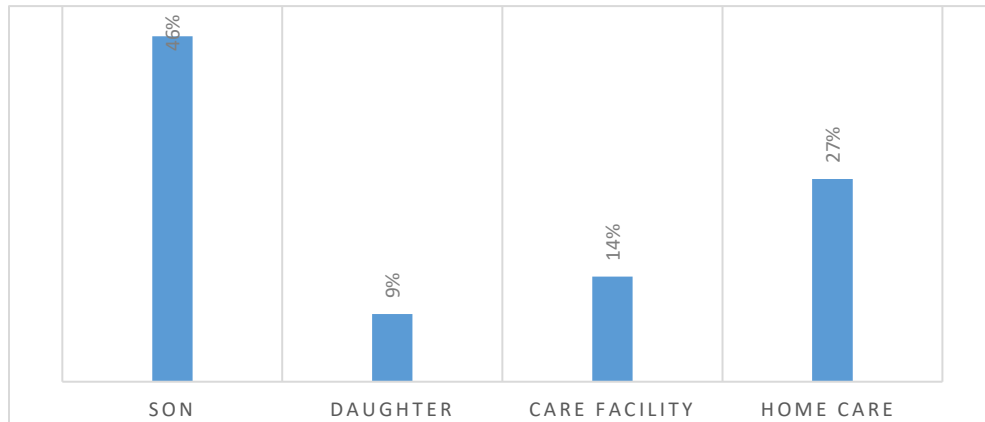


Figure 1. Bar chart of who elderly citizens in Türkiye prefer to live with

- i. Social needs: Human are social creatures by nature, and their basic needs reflect this. One of the most important social demands involves love, unity, friendship, and belonging. These needs motivate people to engage with one another, build a sense of belonging, and build shared values. For one to maintain a healthy mind and a calm life, these fundamental demands must be met. If not, dissatisfaction and hopelessness creep in and make life unpleasant. Some examples of social needs are Love, intimacy, friendship, family, and a sense of belonging.
- ii. Physiological needs: These are biological necessities such as air, food, drink, shelter, clothes, warmth, and sleep that are necessary for human survival. The human body cannot function at its best if these demands are not met. Maslow regarded physiological needs as being more significant than all other wants because, unless these needs are addressed, all other needs become secondary.
- iii. Physical needs: some examples of physical needs can be termed basic human necessities that we can use to live healthy lives.

3. Results

Considering the aims and objectives of this study as it explores the impact of architectural design techniques that improve living conditions, safety, and homeliness in elderly care homes, it focuses on addressing social needs and providing interactive spaces for elderly users. Last but not least, the study highlights the importance of handcraft activities for relaxation and stimulation.

The study suggests elderly care homes should have features such as water-saving systems, organic gardens for fresh produce, renewable energy production from solar panels, green spaces for therapy and recreation, and environmentally friendly building materials. To support the physical, emotional, and mental health of its inhabitants, it also places a strong emphasis on social activities, community involvement, and individualized care plans. The intention of creating a social space for elderly citizens is to factor health into architecture in a way that architectural designs positively affect a space to be safe, healthy, comfortable, and accommodating. With this innovation, the problem of isolation and loneliness that scare people away from patronizing or seeing the better aspects of elderly care homes will be solved. Chapter one explains the problem statement, the aims, and the objectives of this thesis paper, "New Approaches to Contemporary Elderly Care Home Design.". The design techniques specifically intend to improve on bringing everyone together in a social space to help break the communication barrier.

The approach to solving the major problem suggests that a vocational school would be a great way to achieve a social environment and, at the same time, empower the elderly by keeping them busy and awakening their inner minds. This

vocational school creates a pathway for social activities and events to take place through the exhibition of arts and crafts work done by elderly people and students through collaboration or individual work. These activities can be hosted in the performing hall.

3.1 Data Analysis

Table 1. Analysis Table

S/N	Social analysis	Physical analysis	Physiological analysis
i.	The vocational school serves as a gateway for social activities such as cultural performances or a display of arts and crafts work.	The study aims to be constructive, sustainable, and conducive for both disabled and non-disabled people.	The elderly care home does not just serve as a home for elderly citizens; it also empowers the elderly to be involved in handmade craft activities.
ii.	Open garden spaces enable a sit-out time to enjoy the weather and greenery surrounding them.	The vocational school creates room for CSR, serving as an advantage for empowering elderly citizens and, at the same time, creating job opportunities for young people who will love to explore the art and craft world.	During free hours, the elderly citizens can get busy and keep their minds occupied instead of feeling bored and lonely.
iii.	Indoor spaces for socializing are considered; this comprises the dining area, the reception/waiting lounge, and the gym.	The elderly care home enhances the living condition by selecting eco-friendly materials that can provide a homely and aesthetic look to the building.	As the elderly citizens are kept busy and occupied, their mental health is in good condition. By doing so, communication gets better.
iv.	Double rooms serve as a subtle way to break communication barriers. When people live together, they get to relate well and form a bond. In some cases, some people do not love to share their private space with anyone.	Semiotics of space, which plays an important role, especially in commercial buildings, is taken into consideration as elderly citizens may need to have a level of proper description around the building.	A sense of community and belonging starts to set in when one's mind is occupied and alert.

According to Maslow's hierarchy of needs in 1943 and 1954, he argued that to meet the higher needs, humans needed to satisfy survival needs first because the higher the hierarchy, the harder it is to fulfill the needs. Maslow threw more light on the hierarchy of needs, which may change depending on the situation or a person's unique characteristics. He emphasizes the fact that some people's need for self-esteem is greater than their need for love, for instance; other demands for creative expression might be more important than even their most fundamental requirements.

Quality of Life: Elderly citizens' quality of life can be improved by participating in social activities and fostering relationships. Social connections can boost general well-being by offering entertainment, excitement, and opportunities for learning and personal development.

Physical Health: Elderly citizens who participate in social activities tend to have better physical health results. Having social interactions can lower the risk of certain illnesses and improve overall health outcomes by boosting the body's immune system, encouraging physical exercise, and promoting healthy behaviors.

Emotional Support: A strong social network within the care home can provide emotional support to elderly residents, reducing feelings of loneliness, depression, and isolation. Regular interactions with peers and caregivers can foster a sense of belonging and purpose.

Mental Health: Among the elderly, social isolation poses a serious risk factor for mental health conditions such as anxiety and sadness. On the other hand, consistent social connection can improve mental health outcomes, avoid mental health issues, and stimulate the brain.

Sense of Community: A vibrant sense of community among residents and staff at a care facility can promote collaboration, support, and companionship. People who have a strong sense of community may live in an atmosphere where they are respected and cherished.

Enhanced Caregiver-Resident Relationships: Good social connections between caregivers and residents can improve the standard of care given. Building genuine connections based on respect and trust can help with personal care, enhance communication, and raise general happiness in the care home setting. The vocational school is a medium for integrating social activity into the care home; this vocational school consists of several classrooms for different tasks, which include the music classroom and the paint and sculpture classroom. The classrooms are well equipped with the necessary materials according to their needs and specifications. At the end of this thesis, it can be concluded that:

- i. There are several opportunities for social interaction.
- ii. There is room for corporate social responsibility (C.S.R.).
- iii. Safety measures are considered buffer zones that separate the care home from the nearby neighborhood.

4. Discussion

With the literature review guide, the meaning of "designing for the elderly" was defined as the "rules and scopes" for meeting the design needs of the elderly (Erbaş, İ., 2006). The cultural way of life and living preferences were all examined, and all these highlighted factors were studied in this research. These key problems will be solved through the research method and the design method, with the help of architectural techniques that help meet the needs of the occupant type and building regulations. Furthermore, Hujala, A., Rissanen, S., & Vihma, S. (2013) suggest that creating an environment where communication barriers can be broken means that architects might try to improve well-being in different ways in addition to making things better for people by reducing unpleasantness and difficulties through some design techniques, but in this case, it also permits effective and involved activity by encouraging social interaction and use of easy technology.

Türkiye's Aging Demographics

Türkiye, which used to have a young population, is now on its way to becoming one of the countries with a larger aging population, with about 8 million elderly citizens. In contrast, residential homes, nursing homes, and hospitals accommodate a small percentage of the elderly population. There are currently about 8 million elderly people in the country, and aging demographics show that this number will continue to rise in the years to come. In Türkiye, the population is divided into male and female, with 50.2% being male and 49.8% female. In 2018, the 15–64 age group saw a 1.4% increase, while the 0–14 age group declined. The annual growth rate was 14.7 in 2018 (Population: Demographic Situation, Languages, and Religions, n.d.). Türkiye values the tremendous amount of knowledge and experience that older people bring to its society, as well as the contributions they have made and are now making to Türkiye's economy and social structure.

Over time, the General Directorate has changed how its aging-related units are organized. Therefore, the goal is to strengthen and improve the institutional structure. The Department of Older Persons' Welfare is composed of the Economics of Ageing Unit, the Support for Older Persons Unit, the International Relations Unit, and the Active and Healthy Ageing Unit, which was established in the institutional configuration created in 2020 in addition to the Department of Care Services for Older Persons. From this vantage point, current social policies on aging have adopted a rights-based approach in addition to the social services and social aid offered to older adults.

In an interview with Anadolu Agency (AA), Naharc stated that Türkiye has recently expanded its services in geriatrics, long-term home care, and palliative care for the elderly with about 400 nursing homes and rehabilitation centers for the elderly people and roughly 27,500 individuals living in them under the Turkish Labor, Social Services, and Family Ministry, while some people prefer in-home care from their families or professional caregivers (Sabah, 2020).

4.2 History of Care Homes in Türkiye

There are 426 private and 27,500 state-owned assisted living facilities in Türkiye are run by the Turkish Labor, Social Services, and Family Ministry ("Care Homes in Turkey | CMS Expert Guide," n.d.). In addition to these nursing homes, the elderly in Türkiye can apply for home care services, and the state appoints a doctor who visits their private homes weekly. As these centers are state-funded, they can have some limitations in the care of the elderly, but what they offer covers almost all parts of care for the elderly, as they include various benefits from monitoring medication and access

to doctors to special social activities (Sabah, 2020). Türkiye is a country that values its senior citizens highly, and the elderly citizens in turn, benefit from this respect as well because they receive the best care possible in hospitals and assisted living facilities. The first Turkish facility for caring for the elderly was founded in the 11th century during the Seljuk era. Regardless of color, religion, or ethnicity, the historical organization "Darülaceze" seeks to save the impoverished from destitution by offering them adequate housing (Kırdı, n.d.).

The word Darülaceze originates from Arabic, which means "the name of poor people." Darülaceze was home to people of different backgrounds, like the handicapped, widows, paralyzed, and generally people in need of means of survival. Darülaceze was not just a home for people of different races, religions, and cultures; it also created an avenue for people to acquire skills and make a living.



Figure 2 Darülaceze

4.3. Case Study Matrix

The case study matrix compares and contrasts the different case studies on different levels of values that make the projects unique in identifying the needs of elderly people in elderly care homes and coming to terms with meeting the needs as the outcome.

Table 2. Case Study Matrix

Project name	Architect	Location	Social values	Sustainable goals
Peter Rosegger Nursing Home	Dietger Wissounig	Austria	There is access to a public park proposed by the City of Graz facing the east side of the property. There is also provision for two private gardens on the premises	Timber was used mostly throughout the building.
Nursing Home Passivhaus	CSO Arquitura	Zamora, Spain	One of the project's main objectives was to medicalize the architecture of the building to give a little warm house feeling	The structure is constructed utilizing a prefabricated wooden framework system that is constructed in a workshop in Barcelona, then transported to Zamora in trucks and installed. Solar panels are mounted on the rooftop to supply power to the building.
Housing for the Elderly	Dominique Coulon & associates Coulon, Oliver Nicollas, and Gautier Duthoit)	Huningue, France.	The facility has been designed to promote interaction among the residents by designing communal living areas that are as spacious as feasible and have lots of natural light. Spaces have been created to promote conversations and interpersonal contact.	Terracotta, wood, and red concrete combine to create a friendly ambiance. It also has a link to link to the heritage of the Rhine by catching the light and emphasizing its rustic port location.
Sakuragien/Aomori Elderly Residence	Waiwai	Japan	it was designed to balance the sensitive demands of the elderly with the nearby surroundings, including the area's tree farms and heavy winter snowfall.	The shape of the building is influenced by a native plant that is popularly known in Japan as 'Sakura'.
Suadiye Nursing Home.		Kadikoy, Türkiye	This nursing home aims to improve the quality of life by creating a safe & spacious environment to help the physical and mental health of the elderly people living in the nursing home.	The building materials used in the construction of the building include glass and concrete.

5. Conclusion

Architecture covers a broad range of factors that should be considered while designing to satisfy and meet the basic needs of building users. Some of these factors are considered: the social, physiological, and mental well-being of

the building occupants and its near surroundings. The impact of these roles plays a major role in satisfying and meeting individual needs. In this paper, the problem of building style that affects the social life and well-being of elderly people is highlighted as a major factor in elderly care homes, and because of this, people are skeptical.

When a building space is not structured to meet the building type standard, there is no room for the occupants to feel the comfort of habitable space. Hence, in this area of study, the approach suggests examining several projects according to location, social values, and sustainable goals, comparing and contrasting the gaps and lapses in case studies that suggest various design techniques that can help in bringing elderly people together in a social space. Some of these design targets are: designing performing halls, joint dining halls, garden sit-outs, and building materials that are eco-friendly and create a warm ambiance. Secondly, literature review studies suggest various innovative ideas that can be incorporated into the design stage of the building, such as a technology room where video calls and technology amenities are stationed, understanding the behavior of elderly people to enable a universal design to suit everybody in the building. At the end of this study, this paper suggests a vocational school as a good medium to create diverse social activities in an elderly care home as part of the social liberation and empowerment of not only the elderly citizens but also the students who come by to either work in the elderly care home or learn in the vocational school as part of cooperate social responsibility (CSR).

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