

A Study on Egirdir Nursing Home for Assessment of Landscape Preferences

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Authors' contributions

This work was carried out in collaboration between all authors. All authors read and approved the final manuscript.

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ABSTRACT

Aims: The aim of the study was to evaluate Egirdir Nursing Home and its existing structures under Landscape Architecture Major.

Study Design: Relevant literatures were utilized in order to evaluate present landscape elements, plant design approaches and accessibility properties for the elderly, visitors and staff. Some comprehensive observations, scorings and recommendations were given.

Place and Duration of Study: The study was conducted in September 2018, in Egirdir town, Isparta province where located in Mediterranean parts of Turkiye.

Methodology: The garden status, building placement, capacity and locational information's were undertaken from site visits. However, the aerial photographs, face to face interviews with nursing home staff were conducted, and evaluation was made under the Landscape Architecture discipline. In this regard, a scoring sheet for assessment was prepared with a base on recent literature information's that the calculated scoring values were used to evaluate Egirdir Nursing Home features. After the scoring for the total of 59 features, the percentage of success was calculated with ratio of percentage of scores to possible maximum score of each feature.

Results: Egirdir Nursing Home's location is close to the residential area. However, it contains some units that design to improve elderly mural and emotional outcomes. In this sense, the garden was found to be heavy planting with many greenery textures. There are randomly planted flowers, trees

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and plants throughout garden. It was realised some landscape units and elements in the garden for increasing user satisfaction some level.

Conclusion: The Nursing home and its units are important places for the elderly. It should be a sustainable design and adapt to the needs of the community. However, its design could be easy accessibility and reachability, has controlled circulation. Evidence from many studies proposed that well-designed nursing homes and their immediate environments could confirm restorative and pleasant nature views, reducing stress and improves the emotional outcomes of users. It was found that the Egirdir Nursing Home's garden is easily accessible to elderly and staff. In terms of plant materials, it is seen that the garden areas are partially adequate for aesthetic and functional way. Since the garden has some landscape elements and objects, it is also covered many type plants including trees, shrubs and some aromatic plants. In overall evaluation, it was found to be 67% success in overall and it could be classified as 'successful' unit in terms of Landscape Architecture discipline.

Keywords: Egirdir nursing home; elderly; garden; landscape design; plant design.

1. INTRODUCTION

In the early 17th century, the orphans, mentally ill and poor people (elderly) were placed into some living commons called 'poorhouses' in the USA. These gave them a place where they could be given shelter and daily meals. However, these poorhouses were then replaced with a different type of residential living for the elderly called 'nursing- or convalescent homes' [1].

However, thanks to advances in medical science, the life standards and life expectancy have been increasing, resulting in increasing the number of elderlies [2]. In this sense, it has been estimated that increasing longevity contributes to population ageing. Globally, life expectancy has been projected to rise from 68 years in 2005-2010 to 76 years in 2045-2050. In the more developed regions, the projected increase is from 77 years in 2005-2010 to 83 years in 2045-2050, while in the less developed regions the increase is expected to be from 66 years to 74 years [3]. Moreover, according to the Turkish Statistical Institute (TUIK), 8.3% of the total population was over 65 years in 2016 in Turkish folk. If population growth rate has continued in current rate, the proportion of elderly will be estimated to reach 10.2% in 2023, 20.8% in 2050 and 27, 7% in 2075, respectively [4,5].

However, the process of ageing usually declines in cognitive, physical functions, productivity, independence and social experiences of people. Although the World Health Organization (WHO) is defined as the elderly group over 65 years old that the reduction of the ability to adapt to environmental factors, there are differentiations among countries and societies [6]. In this regard, there is no general agreement of which age

group may be considered as elderly. But there are some approaches that employees older than 50 years could be considered as elderly or older workforce [7-9].

At present, nursing homes have become an important place where the older and disabled people could receive any necessary medical care and receive daily needs that change towards the traditional family structure [10,11]. But those special places are also a type of care units that provide nursing care for elderly or disabled people. However, some social activities may be offered, aimed to meet each resident's physical, social, spiritual, and emotional requirements, including hosting birthday parties, celebrating holidays, musical events, outdoor activities, arts and craft practices, religious services, so on. Moreover, volunteer involvement is also an important part that could act as a link between the nursing home and the outside community.

The nursing homes are generally licensed and strictly regulated under governing legislation. Compliance with the governor legislatures have reviewed regularly for adherence to strict standards such as; building specifications, nutrition and dietary plans, medical services, nursing and personal care rules, religious and spiritual practices, and recreational programs, so on.

Because many important events and social programs have conducted, nursing homes and its near environments (gardens) needs to be designed according to the functional and aesthetic design principles that should support the elderly to be both spiritually and physically healthy. Hence, some design criteria's such as; comfort, easy access, incongruent urban or

sounds (traffic), crowding, perceived insecurity, or other built features must be taken into account for effective utilisation [12,13]. However, one of the most critical design approaches is to create a healthy environment in which the elderly feels well [14].

However, the nursing care is usually necessary for many elderlies. Therefore, these places may provide short- or long-term rehabilitative stays that required providing staff to adequately care for residents. Although many nursing homes generally offers daily housekeeping services, physical therapy units and planned activities with focus on daily living practices (i.e. bathing, dressing, eating, grooming, occupational and physical therapies), it may also be necessary following an injury, surgery or illness in order to regain skills and to receive support with staying as unthreatening, comfortable, and stress-free as possible.

The aim of the study was to evaluate Egirdir Nursing Home which is located in Isparta province, Turkiye, in terms of landscape design principles. After the comprehensive observations and interviews, some recommendations are given for better design practices of Nursing Homes.

2. MATERIALS AND METHODS

The material is a case study on Egirdir Nursing Home, which is located in Egirdir town, Isparta province, Turkiye. It has primarily regulated under the Isparta branch of Ministry of Family and Social Policies. It is located in the residential area with covering area of 3200 m² and was opened in 2009. It has been accepted older people that aged 60 and over. Currently, a total of 39 individuals (33 males and 6 females), live in that home. Its near environment contains residential homes, Egirdir Lake, mosques, schools and intercity road. The location and aerial photograph of Egirdir Nursing home shown in Fig. 1.

The study was conducted in September 2018 in order to evaluate existing landscape elements, plant design approaches and accessibility properties for the elderly, visitors and staff. In this regard, incorporating visual analysis of the site and systematic information gathering through interview were employed. Some questions on landscape design topics relied on site analyses, because it was the way to access the information from staff and way to learn what nursing home

like. The interview with administrative (authority) staff consisted of some relevant questions and took approximately 60 minutes.

The study area and its near environments were observed throughout day and the visual information's were supplied during site visits. Comprehensive observations were made within the scope of landscape architecture design principles. However, a scoring sheet for assessment was prepared with base on recent literature information's for the nursing home design principles to meet the need for functions [14-19]. In this approach, 59 design criteria were established and evaluated for Egirdir Nursing Home (Table 1).

Tarakci Eren and his group (2017) have already established a useful method for scoring and assessment of a Nursing Home [19]. Their approach has found to be useful and utilized in this study. In this regard, the calculated scoring values were used to evaluate Egirdir Nursing Home features and design principles that are taken the multi-parameter system. In this procedure, each feature valued from 0 to 3 in the following specifications:

- If there is no feature, scored: 0,
- If there is a poor feature, scored: 1,
- If there is a middle level feature, scored: 2,
- If there is high level feature, scored: 3.

After the scoring all features, the percentage of total scores was determined according to following formula [19].

Success (%): (Score for relevant criterion / Maximum score for relevant criterion) x100

In this calculation, for the total of 59 design criteria's, the maximum score to be taken on the current score (**59x3: 177**) was determined. Then the percentage of scores was calculated for each feature [19]. The following success situations were found to be useful:

- **Unsuccessful**: If score in below < 31%,
- **Inadequate**: If score in the range of 31-45%,
- **Partially successful**: If score in the range of 46-60%,
- **Successful**: If score in the range of 61-85%,
- **Very successful**: If score in the range of > 85%.

3. RESULTS

Egirdir Nursing Home is that the only nursing home in that town consists of a single building in Yazla neighbourhood of Egirdir town, Isparta-Turkiye. Fig. 1 shows the general aerial view and it's near environments.

It is a general opinion that the building design approaches are directly influenced by the user demand and expectations from facility. However, the nursing home configuration is also influenced by size, capacity and budget.

Fig. 2 shows the general locational photographs of Nursing Home. It has realised that there is no any heavy traffic for building vicinity but a slope to reach the main entrance of the building (Fig. 2A and B). So, it is a problem for older people to reach building especially during cold seasons that might be a slippery ground. The main building has contained a fire escape (Fig. 2C) and a stairway to the garden from the back side of building (Fig. 2F) and also a stairway to intercity road (Fig. 2E). In this specific design property, it has provided an efficient locational placement and follows modular concepts of building planning.

The location of a nursing home and its near environment are very important for elderly. Fig. 3 shows the general location and near surroundings of Egirdir Nursing Home. Its near environment has religious facilities (mosques), a primary school, a vocational school and residential homes (Fig. 3 A, B, C). In these locational placements, staff and some of the elderly who live in the nursing home could be able to reach the town center or many common places by walking. However, it has an attractive view on Egirdir Lake that residents and staff could be enjoyed by simple looking to surroundings (Fig. 3B and C). A seating element was placed for lake and residential area view (Fig. 3E), hard surface pavements was found on the garden (Fig. 3E) and terrace (Fig. 3F). Moreover, a high terrace that close to a dining hall could provide a pleasing image on sightseeing to near environment including some elements and objects. The open space besides the main building was especially reserved area that has been utilized for gaming or similar activities (Fig. 3D). It is important to note that this special area is very important functions that could make be positive effects and useful for elderlies who want to enjoy gaming and spent time in action that involving himself.

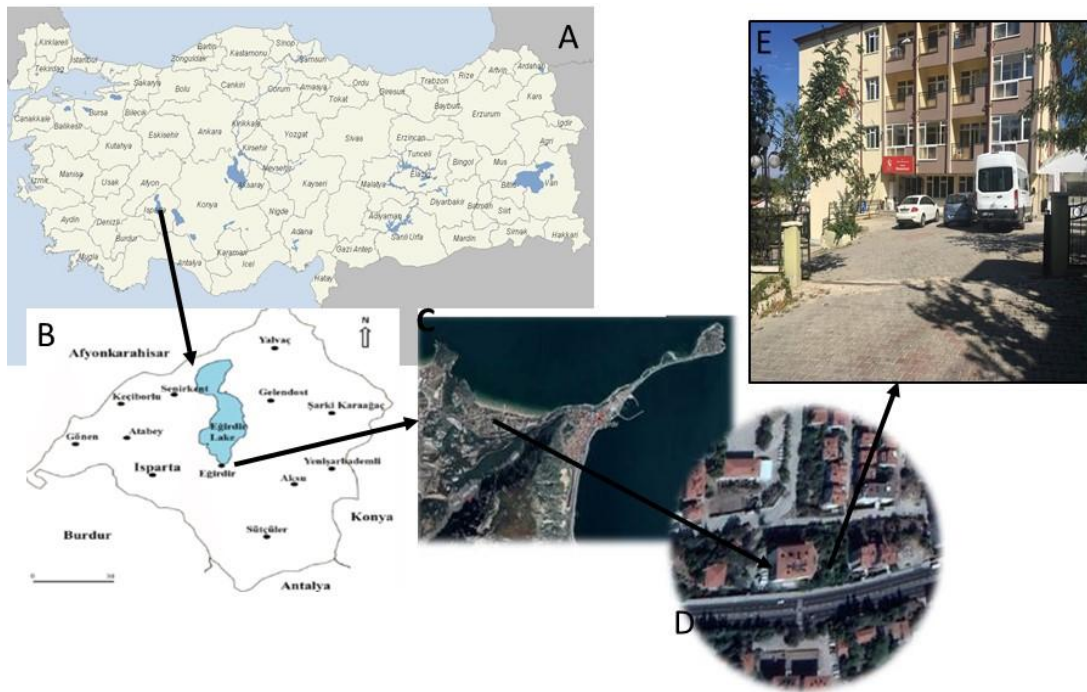


Fig. 1. The aerial view and location of Egirdir Nursing Home (A: The map of Turkiye, B: The map of Isparta province, C: Aerial view of Egirdir town, D: Aerial view of Egirdir Nursing Home, E: Egirdir Nursing Home building)



Fig. 2. General view of Egirdir Nursing Home (A: Main entrance way to the building, B: Outside view, C: Fire escape, D: Exterior walls, E: Stairs leading to the intercity road, F: Stairs leading down to the lower garden)

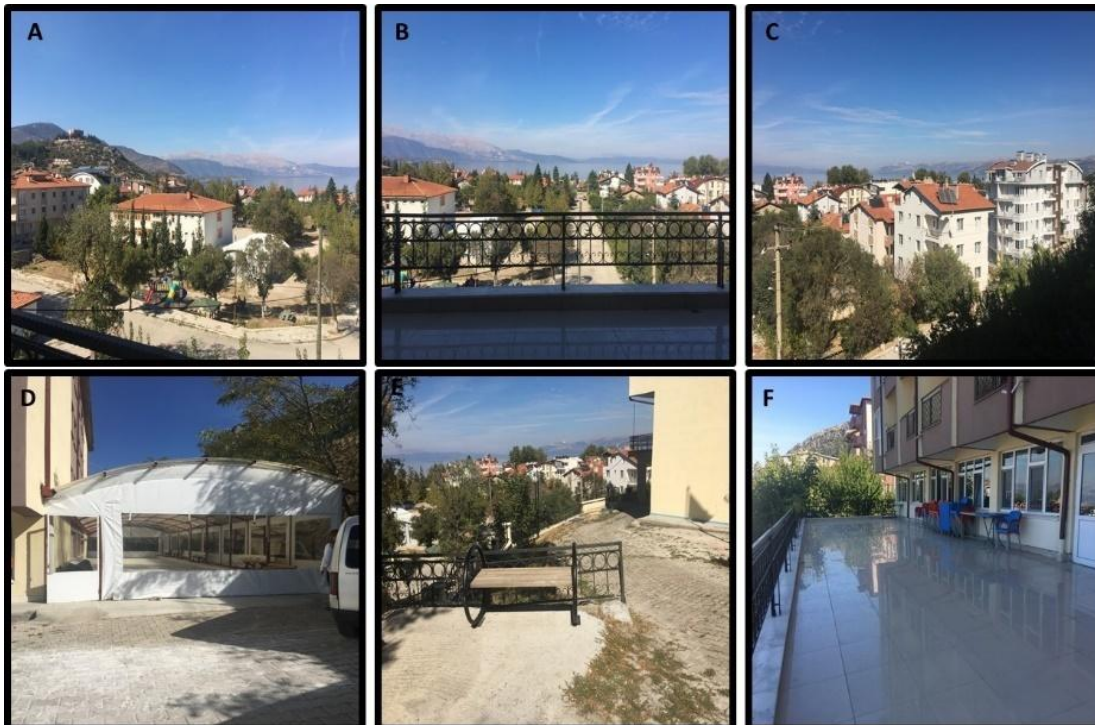


Fig. 3. The location of Egirdir Nursing Home and its open space (A, B, C: Surroundings of nursing home, D: Reserved area for gaming, E: Seating element, F: High terrace)

However, the emotional benefits of buildings could have been enhanced with colourful variety of plant materials, landscape elements and some objects in the garden. Fig. 4 shows some plants and their arrangements throughout the garden. It is clearly observed that there is very rich planting (greenery colour) around the building that it has been tried to ensure the landscaping could be seen in all seasons by elderly and visitors. Moreover, the garden is some level organised for utilisation of sunshades and half-shaded areas. In addition, it is also visible different planting application at the back of garden. It is a general rule that the walkways should be simple and clearly defined with direct route to each unit without penetrating other areas. Moreover, these routes should be flat enough to allow easy movement and sidewalks are wide enough for wheels to pass easily. In Egirdir Nursing Home's garden, the walkways were found to be well designed with rich greenery plants (Fig. 4A and B), those who want to be completely alone and surrounded by nature to enjoy this space more fully for users. The ornamental plants and broad leafy trees were preferred instead of floor covers or different planting options (Fig. 4 D and E). Some aromatic plants were found just

near to stairways (Fig. 4C) and some fruit trees also planted throughout garden (Fig. 4F).

The elderly should be realised by simply looking at garden, object and elements, or in other ways passively experiencing building surroundings where plants are prominent. Fig. 5 shows some garden objects, elements and design specifications for this house unit. The pergolas are very useful elements for resting and enjoying surroundings (Fig. 5 A,B,C,F). However, there is a pool surrounded by broad leafy trees (Fig. 5D) and a specially designed area for playing some activities and games in the garden (Fig. 5E).

During site visits, careful observations and interviews conducted with authority persons, a detailed scoring sheet in Table 1 has been prepared with base on recent literature reports for the nursing home design principles [14-19].

Similarly, the success level of features (%) was determined according to equation given in Materials and Methods section and assessments have been given in Table 2.



Fig. 4. Appearance of Egirdir Nursery House's garden (A, B: Ornamental plants on the side of walking path, C: Aromatic plants near the stairs, D: Some ornamental plants, E: Leafy trees, F: Fruit trees)

Table 1. The scoring sheet for assessments of Egirdir nursing home

Feature	Evaluation Criteria's	Score
Locational, Transportational & Land Specifications	The distance from city center	2
	Neighborhood relations or involving negativity	1
	Reachability by vehicles	2
	Closeness to busy transport network	2
	Reachability to social areas (Parks, squares, bazaar, mosques, etc.)	2
	The main entrance unit property	2
	Availability of parking lot for visitor or staff	1
	The accessibility from garden to building	2
	The accessibility to garden activities	2
	Availability and specifications of walkway	3
	The topographic position	3
Garden Design & Climatic Properties	The presence of a staircase	3
	The availability of a ramp	1
	The availability and general appearance of garden	3
	The size and dimensions of garden	3
	The specification of design for elderly people participation	2
	The attractiveness with current plant species	2
	The general landscape view properties	2
	The all-day long view features	3
	The design features for daylight utilisation through of the year	3
	The design properties for protecting from wind during activities	3
	The design properties for local or regional climate situations (sunny, rainy, snowy, etc.)	3
Equipment's & Elements in the Garden	The presence and functions of entrance door into garden	2
	The presence and functions of lighting elements	3
	The presence and functions of flooring elements	3
	The presence and functions of plastic objects	0
	The presence and functions of signs and introductory elements	0
	The presence and functions of water object	3
	The aesthetic design feature for garden equipment's	2
Event Spaces	The availability of social activity place for crowded groups	2
	The visitor entrance property to garden	2
	The seating element's availability and functional properties	3
	The availability and functions of eating elements	3
	The availability and functions of resting elements	3
	The availability and properties of free activity areas, hobby fields (planting, painting, music etc.)	2
	The availability and properties of sports and rehabilitation fields	1
The availability and properties of special garden arrangements for winter use	1	
Plant & Wildlife Arrangements	The presence and properties of ornamental plants	3
	The presence and properties of grass field	2
	The presence of fruit trees	3
	The presence of medicinal plants	1
	The presence of wildlife life (birds, butterflies etc.) in the garden	1
	The care and maintenance of plants	2
	The presence of colourful plants	1
	The presence of odourous plants	1
	The presence of variety forms for selected plants	1
	The aesthetic appearance of the fruits of plants	2
The aesthetic appearance of the flowers of plants	2	
The presence of harmful toxin containing plants	1	

Safety, Comfort & Compliance	The availability of security units at the entrance of building	0
	The surface properties of garden for walking	2
	The presence and suitability of roads, stairs and ramps for all users	2
	The presence and properties of personal privacy places	2
	The presence and properties of common use places	3
	The suitability of current elements for elderly people	2
	The protective design specifications for any disturbing incidents or unwanted social interactions	2
	The observative design specifications for nurses and healthcare personnel to elderly people when they are in the garden	2
	The easy of accessibility to garden for elderly people	2
The use ability of garden for elderly during day time	2	



Fig. 5. Some garden objects, elements and design specifications (A, B, C, F: Seating elements for resting and watching the environment, D: Pool, E: Specially reserved area for games and activities)

Table 2. The assessments of Egirdir nursing home

Feature	Score	Success (%)	Assessments
Locational, Transportation & Land Specifications	26	66	Successful
Garden Design & Climatic Properties	24	88	Very successful
Equipment's & Elements in the Garden	13	61	Successful
Event Spaces	17	70	Successful
Plant & Wildlife Arrangements	20	55	Partially successful
Safety, Comfort & Compliance	19	63	Successful
IN OVERALL	119	67	SUCCESSFUL

4. CONCLUSIONS AND RECOMMENDATIONS

The landscape designs practices made in nursing homes must be functional and useable not only all day long but also throughout of the year. Therefore, it should be planned and implemented with the expectation for elderly users, including those with ill and disabilities.

In this study, Egirdir Nursing Home and its vicinity have been examined in terms of Landscape Architecture major. In this regard, comprehensive observations, interviews and literature reviews conducted with careful observations, some recommendations are summarised in below for better design practices of Nursing Homes.

- Very heavy planting with greenery texture observed in the Egirdir Nursing Home's garden. But it was found to be partially adequate for planting practices and aesthetic way.
- There are many randomly planted fruit trees throughout garden. This may be increase elderly and staff satisfaction with the garden, and could positive effects to touch and collect fruits directly.
- There was no any plant object found on high terrace area. However, some movable pots with various plant shapes could be useful, might allow improving usability of the terrace.
- It was observed that the outdoor has visible from many of elderly bed that is one of the paramount importance for creating murals of nature scenes for outdoor views.
- The garden was easily accessible to elderly and the paving is wide enough to accommodate wheel chairs and gurneys.
- The locational selection was acceptable but there is a high slope road to reach main entrance of building. However, it could be a problem for reaching to building for not only vehicle but also walk especially during snowy weathers that could be a slippery surface. Therefore, a solution should be issued for that.
- It was realised that standard pathways and parking spaces available for visitors or staff. However, no specialised park arrangement was observed and there may be a problem during crowded hours. In this respect, parking directional rearrangements should be made.

- In garden, the broad-leaved plants extensively used, therefore a well shade has provided especially sunny days at the garden.
- The garden and the open spaces seem to designed for people to relaxing at look around and provide serenity.
- Although well designed building arrangements was observed, there is no security person for Egirdir Nursing Home. However, it is necessary for elderly and staff to be feels secure in staying this place.

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COMPETING INTERESTS

Authors have declared that no competing interests exist.

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