

The Importance of Healing Gardens in terms of Palliative Care Center

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Abstract: Palliative care centers and quality of life approach has come up as interesting designs today. Especially in recent years, the importance of the designs made with medicinal plants has emerged with research on the psychological impact of the structural environment on human health. Healing garden designers have positive effects on users by creating spaces with natural and artificial elements. Created spaces ensure that people are physically and mentally healthy. Recently, in Tokat, projects related to the importance of medicinal aromatic plants as well as their development have been carried out. However, the design of healing gardens is a fairly new topic today and there is no public healing garden in Tokat. The purpose of this research was to determine the appropriate areas for the palliative care center in Tokat in the light of the available research and to explain the design principles and benefits for visitors. In conclusion, this study was described the role of the history of the region and plant diversity in planning in the design of the healing garden.

Keywords: *Medical plants, plants design, landscape, healing plants*

Introduction

With the industrial revolution, population growth began in the cities. Therefore, the number of people living in cities has increased rapidly. Today, as a result of rapid urbanization, people's interactions with nature have decreased (Akca & Yazici, 2017; Birisci *et al.*, 2017a; Asur, 2019). Therefore, the idea of living a healthy life has been begun increasingly important by getting rid of the stress of daily life (Gulgun *et al.*, 2014; Pouya *et al.*, 2014; Asur, 2018; Temizel *et al.*, 2019; Yazici *et al.*, 2018). So much so that people flee from the dense gray fabric of the cities and they turn to green spaces that give them happiness. At this point, green spaces are a center of activity (passive and active recreation needs of people) and have positive effects on their health. Therapy gardens especially have designed for finding health in old age, when health problems are gradually increasing. Therapy gardens have positive effects on the mental and physical health of the elderly people who are defined as "living encyclopedias in of communities". Therapy gardens have been used as places where people treatment healing since the Middle Ages and today it has become an important part of hospitals, rehabilitation centers, nursing homes and nursing homes for the elderly and disabled (Serez, 2011). Arslan and Ekren (2017) stated that therapy gardens began in 1798 at the Institute of Medicine and Clinical Practice in the United States by highlighting the healing effects of horticultural activities for individuals having mental disorders in the modern perspective. Later, in 1879 'a greenhouse was used for the first time for this purpose in the Philadelphia Friends Hospital'. The American Horticultural Therapy Association, the first professional institution in this field, was established in 1973 (Arslan and Katipoglu, 2011).

In summary, throughout history, people have used nature to treat mental and physical illnesses. Since the early ages, nature has been a guide in which people get rid of their troubles in their lives and attain inner peace and believe in healing power. This is a valid case for Tokat in Turkey. Tokat had high level of cultural and artistic life in BC between the years 4000-2000 due to established Hittite and Phrygian along Kelkit, Yesilirmak and Cekerek Rivers. For this reason, Gok Madrasah and Yagibasan Madrasah had an important place in history for the health (Figure 1; Figure 2)

It was built between 1157-1158 by Nizameddin Yagibasan. It was known as the first mediator of Anatolia, which was built in Tokat Niksar Castle and given medical education (Figure 1). Gok Madrasah, was a 13th-century Anatolian Seljuks Madrasah Tokat, Turkey. This splendid piece of Seljuk architecture today hosts the "Tokat Müzesi" (Museum of Tokat), an archaeological and

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ethnographical museum. This historical monument, which was used as a museum for many years, was one of the Seljuk Works in Gaziosmanpasa Boulevard, near Tashan. The structure without a book, XIII. It was built by Suleyman the Prophet Pervane in the 12th century (1277). The Anatolian Seljuks bear the most prominent features of architecture and art.



Figure 1. Yagibasan Madrasahs (**a**, Yagibasan Madrasah Tokat Center; **b**, and **c**, Yagibasan Madrasah Niksar Center)



Figure 2. Gok Madrasah –Tokat (**a**: Gok Madrasah building, **b**. Gok Madrasah garden)

Researches have been made for new solutions to find healing from past to present. The study ‘Looking through a Window Can Affect Postoperative Recovery’ was concluded by Ulrich (1984). As a result; 23 patients staying in the room with a window with a natural landscape view had decreased postoperative complaints, duration of hospital stays and painkillers in the same conditions but compared to 23 patients who were matched in window rooms facing a brick building wall. As a result, 23 patients in the room with a window with a natural landscape view had a decrease compared to the 23 patients in the room with windows facing the wall of complaints after surgery. Another study was conducted by Koura et al. (2009) on ‘‘Use of Plant Breeding Therapy for Elderly People in Urban Environment’’. As a result of their work; they thought that garden therapy activities would be effective in many diseases. Tennesen and Cimprich, (1995); Hartig et al., (1991); Predny, (1999) argued the beneficial effects of therapy gardens on elderly patients in need of care.

Palliative care centers were began new dissemination in Turkey. In this study, the functions of therapy gardens that can be established in palliative centres are mentioned. The garden of Tokat Gaziosmanpasa University Palliative Care Application and Research Center was taken as an example area. It was also emphasized the importance of the therapy garden designed with appropriate medicinal aromatic plants in the city. In this study, which includes literature researches, it is aimed to contribute to the green areas to be established in palliative care centres.

Material-Method

Material

Palliative Care Research and Application Centre Garden located in Tokat Gaziosmanpasa University hospital campus was researched as the study area (Figure 3). Palliative Care Center was opened by the General Secretariat of Tokat Public Hospitals Association In order to ensure that patients who do not have the chance of medical and surgical treatment spend their last days in a better environment, in a better way, and at the same time meet the intensive care needs of patients in need of intensive care. The unit of Palliative Care Research and Application Center has started its activities in the form of a working group since 2010 and continues to function until today by creating a multidisciplinary structure based on volunteering. The World Health Organization (WHO) firstly described the concept of palliative in 1989. The definition made in 2002 that it is as follows: "Palliative care is an approach that improves the quality of life of patients and their relatives who encounter problems arising from life-threatening diseases by preventing or eliminating all physical, psychosocial and mental problems, especially pain, by early detection and effective evaluation (Anonymous, 2018).



Figure 3. Tokat Gaziosmanpasa University Hospital

Method

In this study, literature review was conducted about the therapy gardens. Also a therapy garden was designed for Palliative Care Research and Application Center located in Tokat (Turkey) Gaziosmanpasa University hospital. Appropriate medicinal aromatic plants were identified and appropriate planning was made for the palliative care center Autocad 2018 of Autodesk was used in the project. Besides, the determination of therapy garden for palliative care centers offered suggestions for the construction. The method flow chart is given in Figure 4.

Results

Ways to design a therapy garden

According to Aslan and Ereğ (2017) therapy gardens should be specially designed areas, elderly nursing homes, health institutions gardens, city parks and green areas. Medicinal and aromatic plants have very important aesthetic and functional functions in these gardens (Arslan and Peng, 2013). Medicinal and aromatic plants used in therapy gardens and various activities are used to stimulate the senses of elderly people. For example; The senses are stimulated with the smell of pleasantly smelling plants that bloom in different seasons, with touches with different textures, with the species of plants having aesthetically valuable leaves, flowers and fruits, with the collection and taste of herbal tea and the collection and tasting of cultivated products.

Therapy gardens design principles can be summarized as follows:

- 1- The user profile should be determined and the designs to be made should be an area where the patients and their relatives and the hospital staff will cooperate.
- 2- There should be areas where patients can socialize and feel the positive energy of nature.
- 3- Noise, poor view pollution should be minimal
- 4- The balance principle should be taken into consideration in plant designs. Designs should be made away from the complexity close to naturalness.
- 5- Therapy gardens should be used in four seasons.

- 6- The winter garden should also be used in places where weather conditions are not suitable during the winter season.
- 7- Patients should be comfortable in designed areas.
- 8- The therapy garden should be physically and safety-protected.
- 9- Natural areas should be selected where patients feel safe.
- 10- Reinforcement elements should be natural wood, stone, etc.
- 11- It should be rich in plant diversity.
- 12- Wheelchair-accessible patients should be easy to access.
- 13- Plant-oriented activities should be carried out in therapy gardens.
- 14- In the palliative care center should be separated greenhouse production parcels for patient individuals.

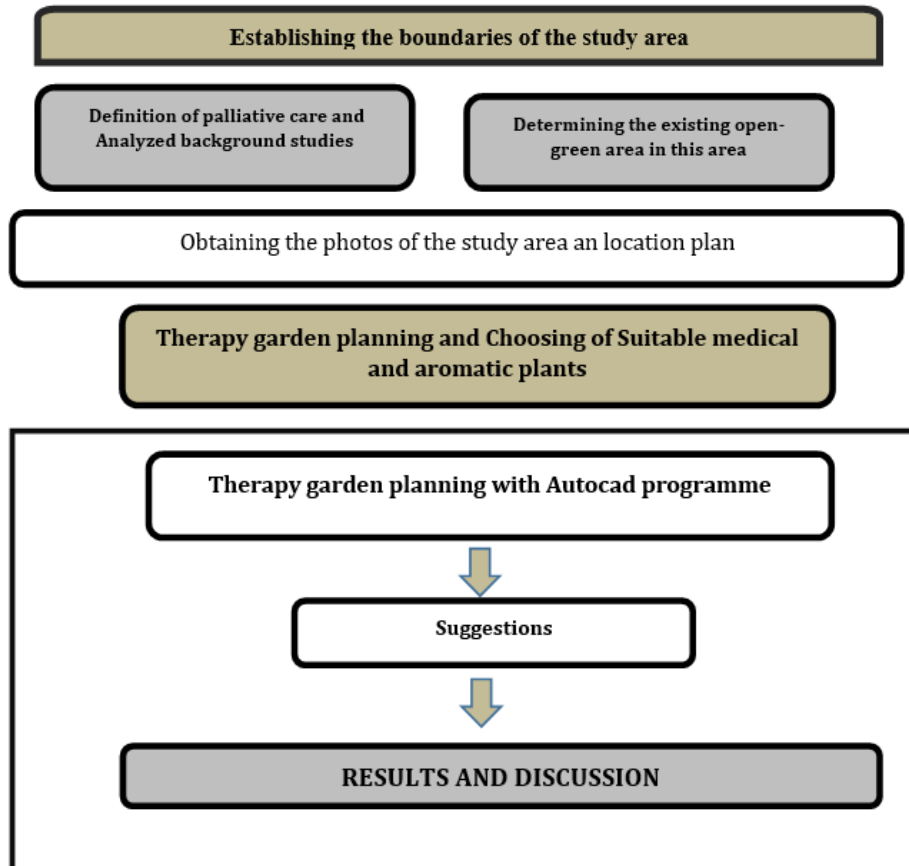


Figure 4. The diagram of the methodology

Therapy gardens design principles can be summarized for palliative care centres as follows:

- 1- Palliative current centre should be built in areas far from the city centre.
- 2- It should be established in areas that may be intertwined with nature and away from hospital psychology.
- 3- Activities that will positively affect the psychology of the patients should be organized.
- 4- Since the patients in the palliative care centre are mainly chemotherapy patients; more importance should be given to hygiene
- 5- Chemical fertilization and spraying should not be done in plants.
- 6- Activities such as planting, production, harvesting and motivating activities for patients and their relatives should be carried out.
- 7- Determining the visual quality value in the planning of an area and determination of the aesthetic value are always important in the studies about evaluation of landscape quality. (Asur & Alphan, 2018). Therefore, the selected living and non-living materials are important in therapy gardens.

Medicinal and Aromatic Plants for Use in Therapy Gardens for Tokat City

Turkey has a rich flora of the large number of medicinal and aromatic plants. The number of plant taxa in our country is 11,707, of which 3649 are endemic (Avcı, 2005). Vegetative wealth in our country; located at the intersection of three phytogeographic regions. The reasons for this are the diversity of climate, bridges between South Europe and Southwest Asia flora, altitude differences between 0-5000 meters, different types of bedrock, and the origin and differentiation of many genera and sections (Donmez et al., 2016). Besides, Anatolia has a very important potential for the presence of highly aromatic and aromatic plants. Anatolia, which is the place where the grains that feed humanity, spread to the world; also contains plants have used in pharmaceutical manufacturing for thousands of years (Aslan and Peng, 2013).

In landscape design studies, planting design occupies an important place and even appears as the main element in some theme parks. In the designs, even if they belong to a theme, plant preferences are taken into consideration as well as their ecological demands and functional uses as well as their aesthetic appearance. The color and shape of the leaves, flowers, fruits, branches and shells of plants determine their use in design and enable effective compositions to be designed.

Tokat City; Due to its location in the Middle Black Sea Pass zone, it is rich in plant diversity, especially medicinal aromatic plants. The fact that the region is among the authorized regions in the production of plants such as poppy and hemp has a positive effect on the production of medicinal aromatic plants (Yazici et al., 2016; Yazici & Yılmaz, 2017).

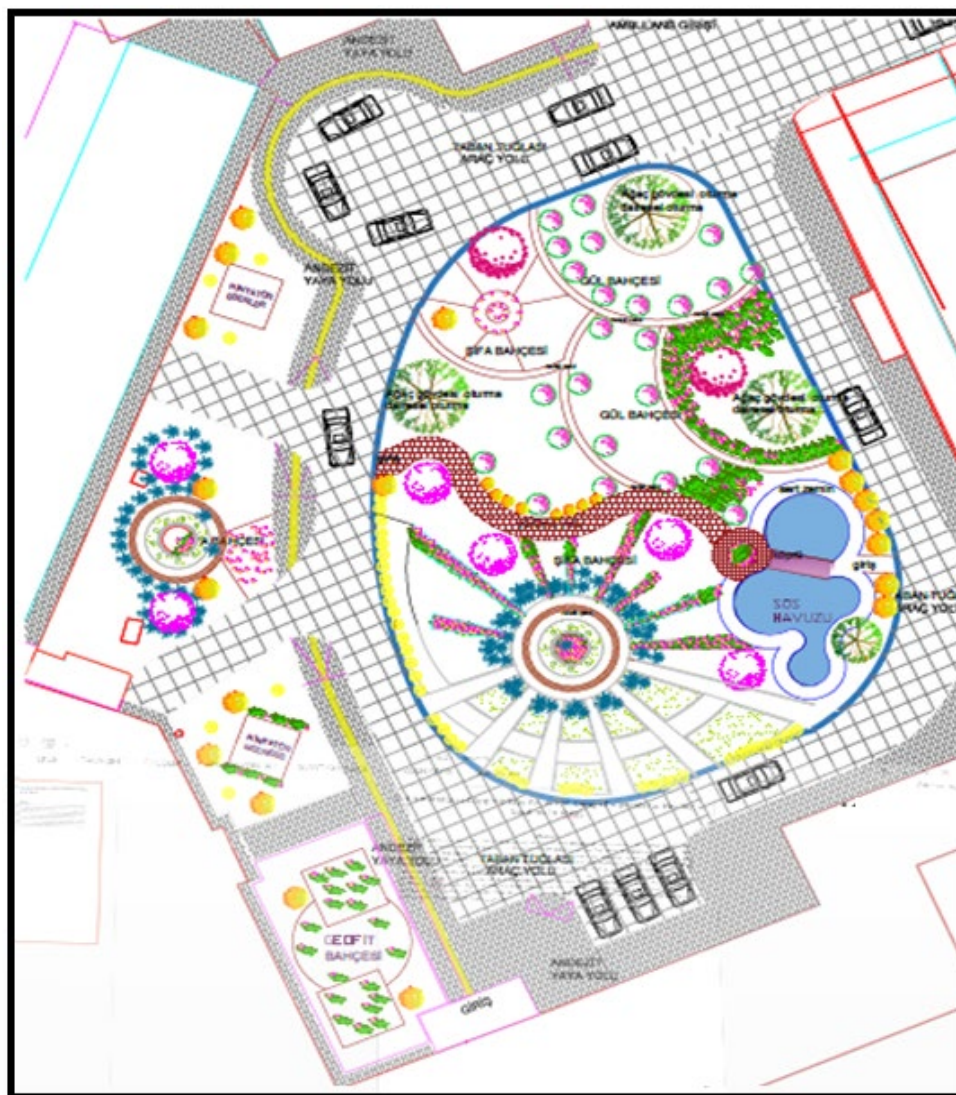


Figure 5 Therapy garden model project of Palliative Care Research and Application Center in Tokat Gaziosmanpaşa University (1/100 plan)

Table 1. Suitable Medicinal aromatic plants for Tokat

Latin Name	Usage	Latin Name	Usage
<i>Artemisia vulgaris</i>	Leaf	<i>Achillea spp</i>	Herba
<i>Carum carvi</i>	Seed	<i>Coriandrum sativum</i>	Fruit
<i>Curcuma longa</i>	Rhizome	<i>Cinnamomum zeylanicum</i>	Fruit peel
<i>Eucalyptus globulus</i>	Leaf	<i>Eugenia caryophyllata</i>	Bud
<i>Eletteria cardamom</i>	Fruit	<i>Foeniculum vulgare</i>	Fruit
<i>Hibiscus syriacus</i>	Flower	<i>Juniperus nana</i>	Leaf
<i>Lavandula angustifolia</i>	Flower	<i>Jasminum grandiflorum</i>	Flower
<i>Laurus nobilis</i>	Leaf	<i>Matricaria chamomilla</i>	Flower
<i>Menta piperita</i>	Leaf	<i>Melissaoffi cinalis</i>	Leaf
<i>Nigella sativa</i>	Seed	<i>Myrtus communis</i>	Leaf
<i>Origanum majorana</i>	Flower, Leaf	<i>Ocimum basilicum</i>	Seed, Leaf, Flower
<i>Pimpinella anisum</i>	Seed	<i>Piper nigrum</i>	Fruit
<i>Pimenta officinalis</i>	Leaf	<i>Salvia officinalis</i>	Leaf
<i>Rosa hp.</i>	Flower	<i>Rosmarinu sofficialis</i>	Leaf
<i>Sinapsis arvensis</i>	Seed	<i>Rosa damascena</i>	Flower
<i>Tillia domestosa</i>	Flower	<i>Thymus vulgaris</i>	Leaf

Designing a model project

The Palliative Care Research and Application Center which was established in Tokat Gaziosmanpasa University hospital is located in the campus. Its location and the hilly terrain of the city center have restricted the area. However, it was found appropriate to turn the green areas around the building into a therapy garden in order to avoid the negative appearance and stress of the patients in the care center. The patients and their relatives in the Palliative Care Center were evaluated as the area to provide socialization with the care center employees. The model project for the study area was given in Figure 5.

The Palliative Care Research and Application Center in Tokat Gaziosmanpasa University offers many activities. Some pictures on the official website of the study area are given in Figure 6.



Figure 6 The Palliative Care Research and Application Centre Activities (a, b, c, d, e, f) (Url 1).

Conclusion

Open-green spaces have an important role in balancing the deteriorating relationship between humans and nature and improving urban living conditions. (Asur & Yazici, 2019; Birisci et al., 2017b;

Birisci et al., 2017c). Designing a “green” system within the city and ensuring continuity is important both in terms of being an urban element and a social area. (Temizel *et al.* 2018; Gulgun *et al.*, 2016).

As a result of the acceptance of the garden as a healing factor, therapy gardens have become a serious topic for academic research in many countries and have been included in health systems. However, unfortunately, therapy gardens have not been able to demonstrate the development abroad in terms of academic or practice in our country. In this study, some principles and strategies had been determined by examining areas where healing garden design could be applied. Healing gardens have no purpose to cure. Only patients feel better during the healing process. Today, although given to importance the healing gardens in Turkey have increased, it has not yet reached a sufficient level (Figure 7).



Figure 7 The sample of healing garden (closed area) (Url 2)

Palliative care centers are important in terms of providing socialization services to the patients they host. Therefore, the work of different disciplines in beer will contribute to palliative care centers. In this context; physiotherapists, psychologists, physicians, landscape architects, architects and engineers etc. being in common work is very important for the garden to achieve the desired effect and to be sustainable. In this study, a sample project with medicinal aromatic plants in a limited area of the palliative care research and application center in Tokat is given.

Examined hospital garden is not yet fully responsive to the needs of the users. Therefore, it is not could contribute to the treatment of patients at the required level. Hospital buildings should be designed together with the surrounding area and the availability of outdoor therapy garden units should be made a necessity.

The following suggestions can be made in the therapy gardens for palliative care in Tokat:

- Social responsibility projects should be increased for palliative care centers
- Horticulture activities should be done by experts
- Expert trainers should be sensitive against patients and they communicate well them
- Therapy gardens should be accessible for everyone
- Therapy gardens should be concepts of the sustainable urban landscape and environmental sustainability
- Many professional disciplines should work together as a volunteer

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