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Research Article

A STUDY ON THE DETERMINATION OF THERAPEUTIC LANDSCAPE OF THE COASTLINE OF ORDU PROVINCE

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ABSTRACT. The basis of the concept of therapeutic landscape is the interaction and connection between 'Human-Health-Nature'. Healing Gardens, which increase the well-being of people, eliminate stress, and where natural elements are dominant, is the first starting point of the concept of therapeutic landscape, and in parallel with the development of the discipline of health geography, scientific studies on "Therapeutic Landscape" have started to take place in the literature. Healing gardens often refer to gardens designed to promote healing, while therapeutic landscapes are viewed as spaces that are also non-ill individuals benefit from. The high-speed overstimulation of modern society makes people prone to lack of attention and therapeutic landscapes are recognized as an important concept that helps to eliminate this condition. Uses such as urban open green spaces, recreation areas, and city parks appear as important potential areas for cities in terms of the concept of therapeutic landscape. Therapeutic landscapes have unique design principles, and these areas with potential for cities should have the design principles adopted in this context. Within the scope of the research, it is aimed to measure the therapeutic landscape potential of the coastline landscape of Ordu Province Altınordu District through the perceptions and expectations of the local people. The size of the research sample was determined as 378 people based on the ratio of 1/1000 people. The individuals in the sample were randomly selected and the questionnaire was applied face-to-face between 2022 and early 2023. Analysis and interpretation of the research results were carried out in the SPSS program using non-parametric statistical evaluation methods. Within the scope of the study, the awareness levels of the local people on the concept of therapeutic landscape were determined and it was seen that 53.3% of the individuals who participated in the study did not know the concept. The study continued by giving information on the concept of therapeutic landscape and in this context, it was concluded that the landscape of the Ordu coastline had a high level of therapeutic effect by 37.3% of the participants. The most important finding in terms of the expectations of the local people was the increase in green areas and recreational areas, as well as the increase of technological devices that will facilitate the access of individuals with special needs.

Keywords: *therapeutic landscape, perception, local people, coastline, Altınordu/Ordu*

INTRODUCTION

The health definition according to the WHO (World Health Organization), is “a state of complete physical, mental and social well-being, not merely the absence of disease or infirmity” and the fundamental conditions and resources for health are peace, shelter, education, food, income, a stable ecosystem, sustainable resources, social justice, and equity were impressed in it [40].In this context, The ‘environment and human interaction’, continues dynamically in terms of social, psychological, economic, etc. in the temporal dimension since the existence of humanity has appeared as health-environment-human interaction’.Today, the increasing population lives in cities more and more and this rate reaches 80% in developed countries. With the dense population rate, cities are turned into areas that are the source of many problems such as unplanned construction, traffic, and technology-based radiation. Changing consumption and living

habits cause a decrease in the nature-human relationship. This situation is caused by stress, which is one of the most important problems of people today, and depression problems along with it. According to the World Health Organization, “Stress” refers to the "Health Epidemic of the 21st century" While 'Depression' is predicted to be the second-leading cause of disease in the World [8, 21]. If these problems are persistent, mental, emotional, and physiological negative results may occur in the individual. The 'environment and human' relationship, which cannot be constructed correctly, is at the root of all these problems, and if it is established healthily, it also takes part in the solution. It is of key importance in terms of the 'environment-human-health' relationship. Research on the positive effects of nature on human psychology has shown an increasing development in the last 30 years [32].

In this context, "Healing Gardens", which are handled with a human-centered approach, increase the interaction between the individual and the natural environment and increase the well-being of the people with this interaction, eliminate stress, and are dominated by natural elements, have achieved gain importance. The use of the natural environment for health purposes dates back to early Asian, Greek, and Roman cultures in ancient times. In the earliest historical period, It is possible to see recordings of 950 therapeutic substances, 650 of which were herbal in his work 'De Materia Medica' of Dioscorides, a military physician in the Roman Army in the 1st century AD or that healing temples that for the gods built by Greeks [10, 20].In addition to these, the Persian garden, the Japanese Zen garden, and the Monastery Cloister gardens are some examples of healing environments seen in different parts of the world in history. Gardens were an integral part of health services for monastic communities in Medieval Europe, and the rationale for these gardens was based on the idea that combinations of aromatic/medicinal herbs from the garden, along with religious prayer, could help individuals heal [23]. The existence of healing gardens in Europe is seen in health studies for the poor, sick, and disabled in the 10th and 14th centuries [10]. In the early 1990s and the late 1980s, there was a worldwide decline in interest in the approach, and the idea of healing gardens is attracting attention again today, and new studies in the field of health and landscape professional disciplines have begun to emerge [27, 36].

Environmental psychologist Roger Ulrich was one of the pioneers of the healing garden approach, and his works in 1984 and 1991 shed light on the basic principles of the concept. In his study conducted in 1984, it was determined that patients living in rooms facing dense tree areas used less medication, recovered more quickly, and had fewer complications than patients living in rooms with windows facing brick walls. In addition, in his study in 1991, he revealed the difference in the stress levels of people who are exposed to the urban environment and the natural area [32]. Kaplan and Kaplan [18] and Kaplan [17] concluded in the ART (Attention Restoration Theory) that the positive effects of watching nature can provide emotional relief by getting rid of the overloaded environment that causes fatigue. Ulrich [34] supported this concept and introduced the SCRT (Stress Coping and Restoration Theory), which argued that seeing nature, natural features, is a positive distraction that improves emotional state [31]. These two theories are important approaches that underlie the healing gardens and emphasize the cognitive benefits provided by nature. Watson and Burlingame [37] state that even small touches of nature, such as flowers in the patient's room, can increase healing, and they state that being in touch with nature supports the patient's psychological well-being and this plays an important role in promoting recovery [10, 24].

In the 1990s, The therapeutic landscape was first introduced by Will Gesler, and the combination of different physical, social, and symbolic elements may be central to the emergence of landscapes conducive to healing according to him (Gesler, [11, 12, 13].

Although the two terms are used interchangeably from time to time, they differ at an important point. Healing gardens is a more general concept and usually refers to gardens designed to promote healing but in this case, recovery is seen as an improvement in general health and is considered a state of total well-being, including spiritual, emotional, psychological as well as physical recovery. Therapeutic landscapes are the areas that people who are not sick benefit from. In this sense, Therapeutic landscapes appear as large-scale spaces that appeal to a wide variety of user profiles. William [38] states that therapeutic landscapes are important to many researchers in three main areas of research: 'known physical places for health', 'applications in health care centers', and 'areas important for individuals with special needs' and in the light of developments, these areas have been started to be evaluated in six basic categories as 'physical spaces known for health', 'applications in healthcare and sites', 'spaces of significance for particular populations', 'literary analysis of fiction', 'use within disciplines outside of geography' and ' everyday sites of varied therapeutic value' [39].

Nature itself is included under the title of 'everyday sites of varied therapeutic value ' and research conducted in recent years has focused on different landscape types such as non-wild national parks, woodlands, farms, local parks, canals and rivers, and beaches, and the sea [3, 4, 5,6, 7, 9, 14, 16, 22, 26, 28, 29, 35].

WHO predicts that urban green spaces can reduce environmental health risks due to their positive effects such as increasing air and water quality, reducing noise levels, and contributing to the climate (balancing the temperature). It also contributes to issues such as stress reduction, relaxation, physical mobility, increasing social interaction, and social cohesion. Access to nature can improve mental health and cognitive status, increase immunity and physical fitness, and reduce mortality rates. [24, 41]. Currently, there is no universally accepted definition of urban green space in terms of its effects on health and well-being. Urban green spaces may include places with 'natural elements', but may also include certain types of urban green spaces, such as street trees, and may also include 'blue area' representing water elements ranging from ponds to coastal areas. [41]. In summary, urban green spaces, especially public parks and gardens, provide resources for stress reduction and mental well-being, contributing to recovery and physical relaxation [15].

With this study, the therapeutic landscape potential of the coastal landscape of Altınordu district of Ordu province was to be measured through the perceptions of the local people.

MATERIAL AND METHOD

The research was carried out in Altınordu district of Ordu Province. Ordu is located on the Black Sea coast, between 40° 41' north latitude and 37° 38' east longitude. Its adjacent provinces are Samsun to the northwest, Tokat to the southwest, Sivas to the south, and Giresun to the east. Its surface area is approximately 5,952 km² and it has a 107 km² coastline. As a study area, Altınordu district which is the central settlement of Ordu Province located between 40° 57′ 6″ north latitude and 37° 53′ 53″ east longitude and It has a 303,6 km² surface area. According to 2021 Turkish Statistical Institute population data, the population of Ordu Province is 760,872 and the population of Altınordu is 229, 214 [30].

The material of the research consists of a 5 km long coastline landscape covering Rüsumat Park, Tayfun Gürsoy Park, and Akyazı Park located in Altınordu District of Ordu Province in the Eastern Black Sea Region (Fig 1).

The quantitative method technique was used to measure the level of knowledge and expectation. Within the scope of the research, a questionnaire consisting of 25 questions

was applied face to face to 378 randomly selected individuals and the data obtained were analyzed in the SPSS program. Based on the findings, the level of knowledge of the local people on the concept of therapeutic landscape was measured and their expectations were determined in this context.

Fig 1. *The geographic location of Altınordu-Ordu*

RESULTS

The participants's gender, age, education, employment, and lifetime in Ordu were determined according to survey data. The gender of individuals is 51,5% female and 48,5% male. The ages of the individuals are 8,8% (0-18 age), 30,6% (19-30 age), 31,5% (31-40), 37,3% (41-65), and 1,8% (>65). Respondents are generally in the young and middle-aged groups (Fig. 2). Within the scope of the study, six levels were determined for educational status. The respondent's educational statuses are 4,8% elementary school, 3,6% secondary school, 27,9% high school, 46,7% university, 10,9% master's degree, and 6,1% doctorate. The general education level of the individuals is high (Fig. 3).

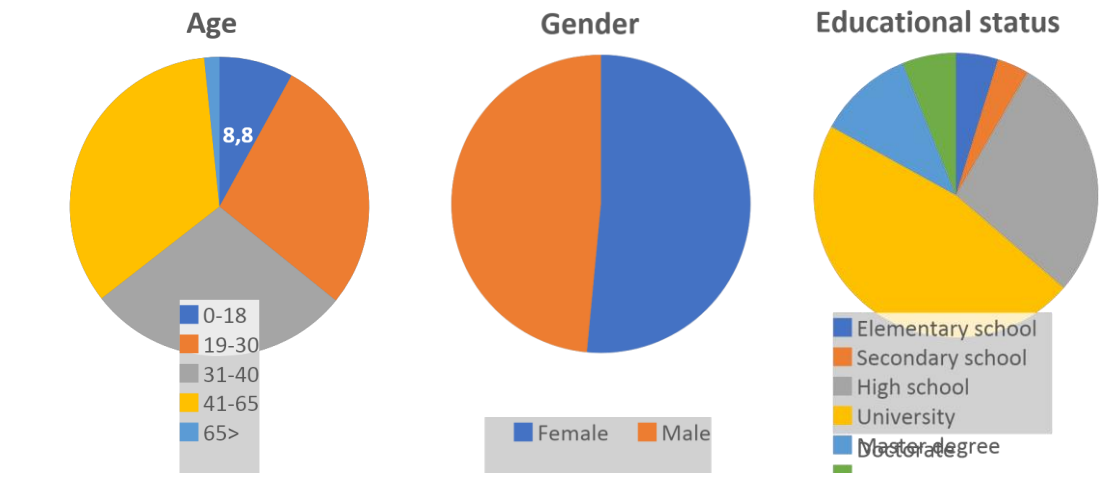

Fig 2. *Profile of the participants (Age, Gender, and Educational status)*

Finally, the participants' business positions are 54,8% government employees, 6,7% housewives, 6,1% retired, 25,1% students, and 7,3% unemployed (Fig 2).

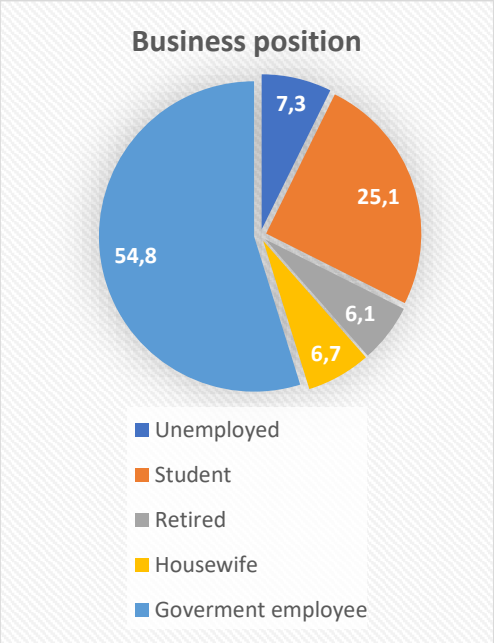

Fig 3. *Profile of the participants (Business position)*

Respondents were identified as 'Native people of Ordu' and 'Non-native people of Ordu' according to their origin to measure the perception of 'Theurapatic Landscape' accurately and effectively. In the data obtained from the survey data, seen that 74,8% of the respondents are Native people of Ordu and 25,2% non-Native people of Ordu (Table 1). Lifetime in the city plays an active role in terms of evaluating the coastline of Altınordu district of Ordu province within the scope of the therapeutic landscape. In this context, the participant profile was also analyzed in terms of lifetime in Ordu province. The lifetime profile of respondents is 16,7% (1-5 years), 20,9% (6-15 years), 30% (16-30 years), 26,4% (31-50 years) and 6,1% (51-80 years).

In the first part of the research, analyses were carried out on the concept of therapeutic landscape and the suitability of the coastline landscape for the concept of therapeutic landscape. First, the participants's knowledge level of the 'Therapeutic landscape' concept was measured. According to the results, 46,7% of individuals have information about therapeutic landscape/healing gardens and 53,3% have no information. According to these findings, *the majority* of the participants do not know the therapeutic landscape". This is a situation that was foreseen before the research, and the survey questions belonging to the other stages of the research were made after the participants were informed about the subject. Within the scope of the therapeutic landscape concept, the questions 'Do you think green areas have a therapeutic/relaxing effect?' and 'Do you think the sea has a therapeutic/relaxing effect' were asked of participants. For the first question 86,7% and for the second question 87% of respondents found the green areas and the sea to be therapeutically effective (Fig 4).

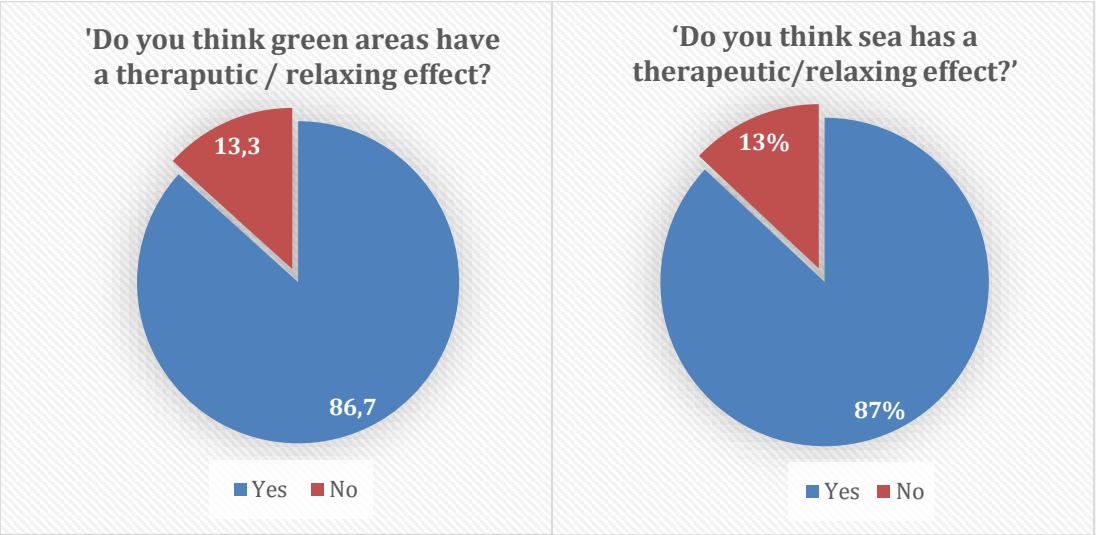

Fig 4. *Ideas of the participants on therapeutic/relaxing effect of green areas and sea*

As it is known, the therapeutic landscape user profile is very diverse and appeals to users such as disabled individuals (Alzheimer's, dementia, autism), the elderly, and healthy individuals. It contains design principles specific to each user group, and universal design principles are at the core of the therapeutic landscape concept. In this context, in the second part of the study, the participants were asked to evaluate the therapeutic/relaxing effect of the coastline landscape and the suitability of the area for individuals with physical disorders and the elderly. Also, the effect of coastal landscape design on the quality of life was evaluated.

The therapeutic/relaxing effect of the Ordu Province coastline landscape was evaluated as high by 37,3% of the participants. A relatively large group of participants found the coastline landscape to be therapeutic/relaxing. The suitability analysis of the coastal landscape for individuals with physical disabilities and the elderly is medium, with rates of 33% and 33.6%. The effect of the coastal landscape design on the quality of life was evaluated as high by 40.6% of the participants. In terms of life quality, we can say that the coastline landscape design is effective (Fig 5).

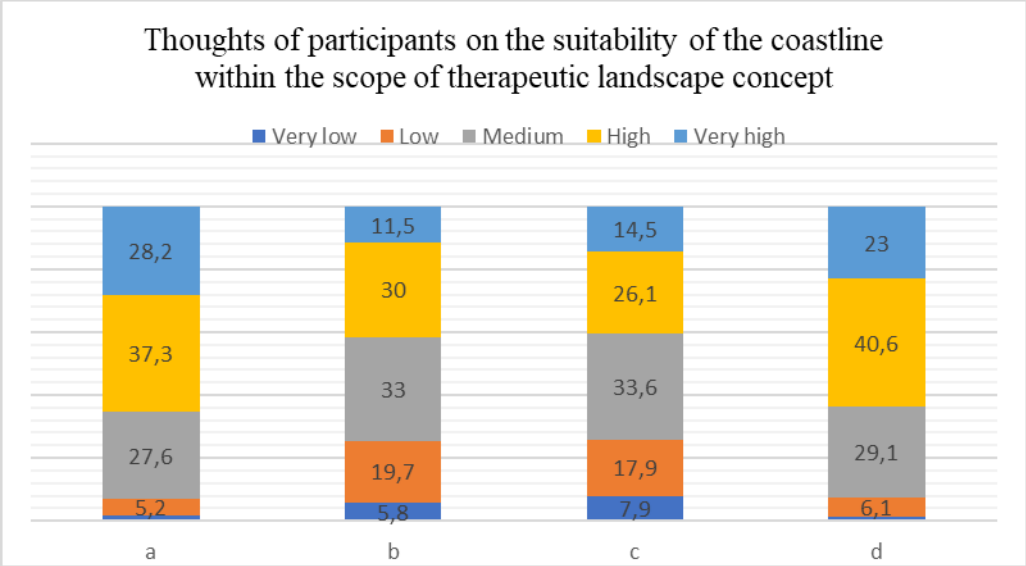

Fig 5. *The Findings of the suitability of the coastline within the scope of therapeutic landscape concept*

(a. The therapeutic/relaxing effect of the coastline landscape, b. The suitability of the coastline for individuals with physical disorders c. The suitability of the coastline for the elderly, d. The effect of the coastal landscape design on the quality of life, .)

Accessibility is a concept that is directly related to the preferability and effective use of a space or area. In this respect, the accessibility of the area was evaluated and %46 of the participants found it accessible at a sufficient level. In addition, the level of use of the coastline by nursing homes located in the study area residents and employees was determined through the observations of the participants. The use of the coastline by the residents and employees of the nursing home was also found to be moderately sufficient with a rate of 36,1%. This finding explains that the area is used effectively and actively (Fig 6).

In the third part of the study, the therapeutic landscape potential of the coastline was tried to be determined with the findings of the therapeutic landscape features of the area, the preferability reason of the coastline according to therapeutic features of the area, and the effects of coastline design on the physical and mental health of the individuals. In addition, the expectations of the users were measured within the scope of the therapeutic features that the participants wanted to be developed in the field by the local government.

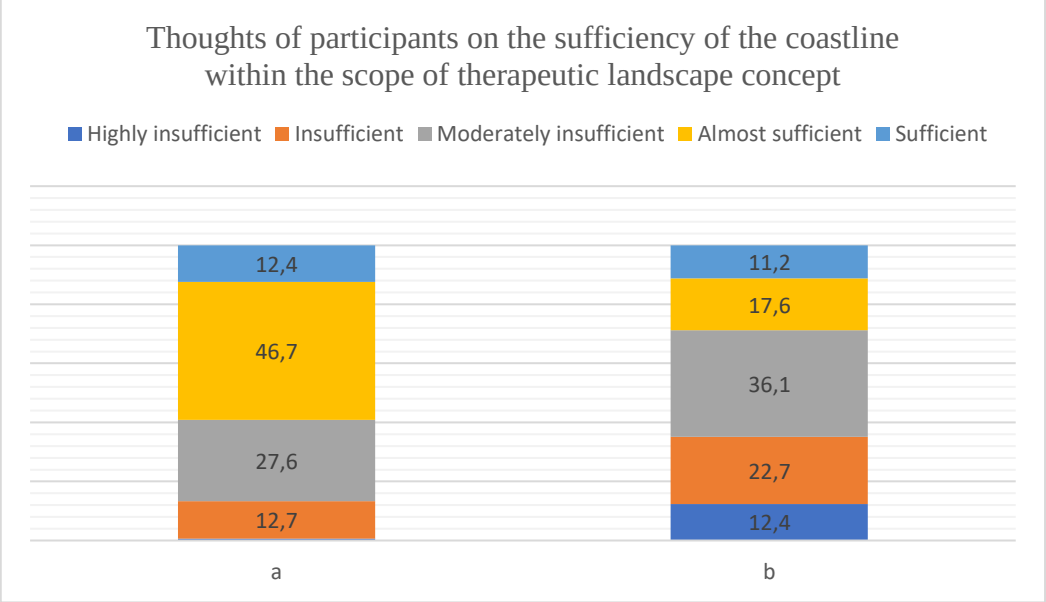

Fig 6. *The Findings of the sufficiency of the coastline within the scope of the therapeutic landscape concept*
(a.The use of the coastline by the residents and employees of the nursing home, b. The accessibility of the area)

Eight different categories (water element, wide open green areas, flora and fauna diversity, seasonal diversity, isolated and semi-isolated areas, aesthetic uses, walking and resting areas, and active recreation areas) were created to ask participants to determine which therapeutic landscape feature of the coastline is important. Among these categories, the first three options most preferred by the participants were walking and resting areas, water elements, and wide open green areas (Table 1). The uses in the coastal landscape that the participants thought to have a positive effect on their health were 83,9% walking tracks, 62,1% resting areas, and green areas with a rate of 61,2%. In addition, the emotional states of the participants while using the area were evaluated and their emotional situation was determined as 50,9% of the participants were peaceful, 28,8%

happy, 40% calm, 34,5% rested, 47,3% relaxed, 19,4% alive, 16,7% fit and 2,4% restless. Predominantly positive adjectives were the emotions most felt by the participants for the coastline landscape.

Table 1. *The Most Preferred Features Of The Coastline In Terms Of Therapeutic Landscape Concept*

Therapeutic Landscape Features	**N**	**%**
Walking and resting areas	258	78,2
Water	215	65,2
Wide open green areas	182	55,2

To determine the purpose of the use of the coastline landscape, five different categories (physical and spiritual resting, relaxation, spiritual purification, being alive and fit, and getting rid of somatic disorders) were created. The preferences of the participants in this context have been physical and spiritual resting, relaxation, and spiritual purification (Table 2).

Table 2. *The Intended Use Of The Coastline In Terms Of Therapeutic Landscape Concept*

The intended use of the coastline	**N**	**%**
Physically and spiritually resting	298	90,3
Relaxation	267	80,9
Spiritual purification	183	55,5

If we make a general assessment, the effects of the use of coastal landscape on physical and mental health were found to be positive by 96,4% and negative by 3,6% by the participants. 57% of the participants stated that the effects of activities carried out on the coastline on their health were good.

Finally, the question of 'Which therapeutic uses would you like to be increased by the local government?' was asked of participants, and expectations were tried to be measured. The most important finding in this context has been the demand for technological devices that will facilitate transportation for the disabled (e.g. Table 3).

Table 3. *The Expectations Of Participants For The Uses That Are Desired To Be Increased In Coastal Landscape*

Uses that are desired to be increased in coastal landscape	**N**	**%**
Green areas	203	61,5
Rest areas	131	39,7
Technological devices to facilitate transportation for the disabled	126	38,2

In the last chapter of the study Cross Table analysis was carried out to determine the variables according to which the concept of therapeutic landscape varies and the relationship between these variables. First, The chi-square test was conducted to determine the relationship between the educational status of the participants and the therapeutic/relaxing effect of green spaces. According to this test, there is a statistically significant relationship between educational status and the therapeutic/relaxing effect of green spaces ($p=0.029$, $p\leq0.05$).

Next step the chi-square test was conducted to determine the relationship between the professional status of the participants and the therapeutic/relaxing effect of the green areas, as a statistically significant relationship was found between the professional status and the therapeutic/relaxing effect of the green areas ($p=0.011$, $p\leq0.05$).

The results of the chi-square test conducted to determine 'the relationship between the professional status of the participants and the therapeutic/relaxing effect of the sea', and 'the relationship between the life span of the participants in Ordu and the therapeutic/relaxing effect of green areas' as statistically significant relationship and they are ($p=0.012$, $p\leq0.05$) and ($p=0,002$, $p\leq0,05$).

According to the results of the last chi-square test conducted to determine the relationship between the life span of the participants in Ordu and the therapeutic/relaxing effect of the sea, a statistically significant relationship was found between the therapeutic/relaxing effect of the sea and green areas ($p=0,00$, $p\leq0,00$).

When all the results were evaluated, it was found that the green and blue areas were closely related to therapy by the local people of Altınordu-Ordu.

CONCLUSION

The strong bond between nature and humans is effective in human psychology and health. Being intertwined with nature, feeling nature, touching the soil, or even smelling a flower can be a reason for a person to be attached to life in the strongest way [19]. Accordingly, especially today, with the increase in urbanization and technology, human life has been under the influence of negative developments as well as positive developments. Among the negative developments, increases were observed in people with depression, anxiety, distress, and many diseases. Factors such as intense stress and crowding in our cities make living conditions difficult. As a result of these effects, the concept of therapeutic landscape has become an important subject investigated by many different professional disciplines.

Especially coastal areas, recreational areas, and green areas are important components that appear in urban areas under the concept of therapeutic landscape. Within this scope, the therapeutic landscape potential of the coastal landscape of Ordu province was evaluated based on human perception following certain criteria, and the results are as follows.

Within the scope of the study, individuals were evaluated primarily in terms of their social status, and positive relationships were determined between education, occupation, life expectancy in Ordu, and the therapeutic landscape concept. In line with the analysis carried out, positive findings were determined at different stages of education, and it was concluded that especially university graduates and postgraduate graduates found the relaxing effect of green space more effective. In terms of occupational status, a significant relationship was found between the therapeutic/relaxing effect of green spaces, especially in individuals working in the public sector and retired. In the question of the therapeutic/relaxing effect of the sea, this situation was found to be more dominant in the participants working in the public sector, retirees, and individuals who continue their student lives compared to other occupational groups. The feeling of belonging to a city and the accumulation of memories about that city have effects such as regeneration and revival of memory, especially in the elderly, Alzheimer's disease, and dementia patients in the concept of therapeutic landscape, and the life span in the city gains importance in this context. This relationship was analyzed over the life expectancy in Ordu, which was asked of the individuals in the study, and the therapeutic/relaxing effect of green spaces was seen more in the participants who lived in the city for 6 years or more. Likewise, 6

years or more life expectancy is effective between life expectancy and the therapeutic/relaxing effect of the sea, and this situation is directly related to the fact that Ordu has a coastal city feature.

With the research, the therapeutic positive effect of green areas and the sea was measured and determined in line with a wide variety of questions directed to individuals, and the effect of this situation on their quality of life was also examined. In addition to the frequency analysis stated in the findings section, the concepts of quality of life and accessibility were also evaluated with a 5-point Likert scale analysis. Quality of life is a concept of great importance under the name of livability [1]. With the question asked on a 5-point Likert scale, it was determined that the participants found the effect of the Ordu Province Coastline landscape on their quality of life to be high with a score of 4.2. This finding also supports that there is a direct relationship between quality of life and the concept of therapeutic landscape. In addition, the principles of accessibility, which are the basis of landscape design projects, are also very important in terms of the therapeutic landscape concept. In this context, the accessibility of the area was evaluated with the question asked on a 5-point Likert scale, and it was determined that it had a medium level of accessibility with a score of 3.1.

Questions were created in the context of seven concepts that are important in therapeutic landscape design. These are environmental features, accessibility, structural design, circulation and movement, natural landscape existence, planting, and reinforcement elements [33]. When the results of the study are evaluated, it is clear that it has potential in terms of environmental characteristics, but the landscape design of the coastline should be revised in line with the universal design principles. In particular, the concepts of accessibility, structural design, circulation and movement, and reinforcement elements should be re-evaluated in the coastal landscape through the concept of therapeutic landscape.

Although there is no serious negative situation in terms of accessibility, it has been found to be at a low level in terms of accessibility and universal design principles (the principle of access by all user groups such as the elderly, autistic individuals, individuals with physical disorders) underlying the therapeutic landscape concept. The area usage level of the nursing home residents is at a medium level, which also supports the low accessibility level of the area. In this context, the area needs arrangements that will be suitable for the elderly and individuals with physical disorders, and more generally for all therapeutic landscape user groups. In this sense, increasing the green areas, resting areas, and devices that will facilitate the use of individuals with special needs is a finding obtained in line with the expectations of the individuals participating in the study.

As a result of the acceptance of nature as a healing factor, ıt is seen that the concept of therapeutic landscape has become an important subject for academic studies in many countries. But, although there are many academic studies conducted within the scope of the therapeutic landscape concept, there are inadequacies in terms of practice. The approach should be handled in a multidisciplinary manner and should be made widespread by being handled by public institutions, universities, non-governmental organizations, and associations [2]. As a result, this study has the potential to be a guide in terms of the applicability of the therapeutic landscape concept in the coastal city and its applicability in cities on a larger scale, and it is a study that will shed light on the subject of many professional disciplines.

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