

Özgün Araştırma / Research Article

**SMART URBAN TRANSFORMATION IN THE CONTEXT OF ACTIVE CITIES: EVALUATION OF
OUTDOOR EXERCISE PARKS IN DIFFERENT DISTRICTS OF ISTANBUL IN TERMS OF SOCIAL
MUNICIPALISM**

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ABSTRACT

Sports and exercise park areas organized by public administrators in cities provide the environment and opportunities for citizens to be able to feed physically and spiritually from the environment they live in, and to produce material and moral values that can contribute to the development of this environment. Exercise parks, which are among the services of social municipality and established in open areas in order to increase the living standard of the society through sports, have been one of the most used fields for physical activity. From the perspective of smart urbanization and social municipality, it is clear that sports services and parking areas offered by public authorities should be designed in a way that takes into account new approaches such as sharing economy, effective and efficient, based on data and through information management systems. From this point of view, the aim of this study is to draw attention to the fact that outdoor exercise parks should be designed based on the needs and requirements of the users. The sub-objectives of the research are to examine the usage habits and profiles of individuals who use the open area exercise parks built by the Metropolitan Municipality in Beykoz and Maltepe districts on the Anatolian side of Istanbul, to evaluate them in terms of sports management and make suggestions for improvement. For the quantitative data collection part of the research, a questionnaire was applied to 500 citizens from different exercise parks in two districts with the convenience sampling method. According to the findings, it was observed that the user profiles of the exercise parks on the Anatolian side of Istanbul differed significantly between the districts in terms of usage habits and socio-economic status, therefore it is suggested that the social municipality services and smart city applications to be offered should be diversified in accordance with the citizen profile and preferences. At the same time, it has been determined that warming up before using the exercise equipment is important for a healthy physical activity in the parks.

Keywords: local government, active life, recreation parks, physical activity, exercise

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AKTİF ŞEHİRLER BAĞLAMINDA AKILLI KENTSEL DÖNÜŞÜM: İSTANBUL'UN FARKLI İLÇELERİNDEKİ AÇIK ALAN EGZERSİZ PARKLARININ SOSYAL BELEDİYESİLİK AÇISINDAN DEĞERLENDİRİLMESİ

ÖZET

Şehirlerde kamu yöneticileri tarafından düzenlenen spor, egzersiz, oyun ve park alanları, beden ve ruhen vatandaşların yaşadıkları çevreden beslenebilmeleri ve aynı şekilde bu çevrenin gelişmesine katkıda bulunabilecekleri maddi ve manevi değerler üretebilmelerinin ortamını ve imkânlarını sunmaktadır. Sosyal belediyeciliğin hizmetleri arasında yer alan ve toplumun yaşam standardını spor yoluyla yükseltmek adına açık alanlara kurulan egzersiz parkları, fiziksel aktivite yapmak için en çok kullanılan sahalardan biri olmuştur. Akıllı kentleşme ve sosyal belediyecilik perspektifinden, kamu yetkilileri tarafından sunulan spor hizmetlerinin ve park alanlarının, veriye dayalı olarak ve bilgi yönetim sistemleri aracılığı ile etkin ve verimli, paylaşım ekonomisi gibi yeni yaklaşımları dikkate alacak bir şekilde tasarlanması gerektiği günümüzde ortadadır. Bu noktadan hareketle bu çalışmanın amacı, açık alan egzersiz parklarının kullanıcıların ihtiyaç ve gereksinimlerinden yola çıkılarak tasarlanması gerektiğine dikkatleri çekmektir. Araştırmanın alt hedefleri, İstanbul Anadolu yakasında bulunan Beykoz ve Maltepe ilçelerinde Büyükşehir Belediyesi tarafından yapılan açık alan egzersiz parklarını kullanan bireylerin kullanım alışkanlıklarını ve profillerini inceleyerek, spor yönetimi açısından değerlendirip iyileştirmesi için önerilerde bulunmaktır. Araştırmanın nicel veri toplama kısmı için kolayda örneklem yöntemiyle, iki ilçede bulunan farklı egzersiz parklarından 500 vatandaşa anket uygulanmıştır. Bulgulara göre, İstanbul Anadolu yakasındaki egzersiz parkı kullanıcı profillerinin ilçeler arasında kullanım alışkanlıkları, sosyo-ekonomik durum ve çevresel faktörler açısından anlamlı şekilde farklılaştığı görülmüştür, bu nedenle sunulacak sosyal belediyecilik hizmetlerinin ve akıllı şehir uygulamalarının da vatandaş profiline ve tercihlerine uygun biçimde çeşitlendirilmesi gerektiği önerilmektedir. Aynı zamanda egzersiz ekipmanlarını kullanmadan önce ısınma hareketlerinin yapılmasının ve yönlendirmelerin bulunmasının, parklarda sağlıklı bir fiziksel aktivite için önemli olduğu tespit edilmiştir.

Anahtar Kelimeler: yerel yönetim, aktif yaşam, rekreasyon parkları, fiziksel aktivite, egzersiz

1. INTRODUCTION

The social conditions that come with the urbanization process both prevent and facilitate the physical activity opportunities of individuals. Especially in big cities, considering the reasons such as intense work pace, density of motor vehicle transportation and sedentary nature, creating physical activity space for individuals is one of the important steps that local governments can take in this area.

One of the aims of local governments is to provide conditions that will allow individuals to lead a healthy and peaceful life. In order to achieve this goal, areas where individuals can both relax and exercise should be created in open spaces, intertwined with nature. These environments, especially created in

big cities, find a response in the literature as sportive recreation. Sportive recreation is defined as activities based on sportive activities within leisure time activities (Chase, 1996).

Local administrations are the closest administrative units to citizens in terms of public service. Since local governments are the closest managerial unit to the individuals who will benefit from the service, they perform services more effectively than central governments. The policy implementers of local governments are also municipalities. Municipalities provide social peace and balance in the society by increasing the harmony and well-being of the city with the policies and practices they develop socially. In the continuation of these concepts, social development was initiated on a small scale, while contributing to the development of the country on a large scale. The concept of local government, which aims to provide a better standard of living with the qualified services it provides to the individuals it is affiliated with and contributes to their budgets in a socially fair manner, appears as the concept of "social municipality" in the literature. Social municipality is defined as a projection of the concept of "social state", which provides social justice and balance by protecting socially disadvantaged individuals against the strong (Pektaş, 2014). Especially, social municipality is the local government structure that comes into play when the social state is insufficient (Batal, 2015). In his study, this researcher defined the concepts of social state, local governments and social municipality as follows: Local governments are a form of government that is authorized by the central government to set rules and impose obligations within certain limits. Social municipality, on the other hand, is an approach that assigns planning and regulation functions to local governments in social areas and envisages them to provide social services to their fellow citizens.

In the past, while activities such as hunting, animal imitations, and ritual dances were physical activity actions of human beings, these actions gained a protective importance against the health problems brought by sedentary life with the industrialization towards the end of the 18th century. One of the first studies on this subject was made in 1864 on deaths caused by heart diseases among tailors and farmers, and it was shown that tailors who lead a more sedentary life lost more lives from heart disease than farmers (MacAuley, 1994). Non-communicable diseases are an important cause of morbidity (being sick) and mortality (death) in society today. Municipalities have important responsibilities within the framework of active and smart cities in increasing healthy nutrition and physical activity, which are risk factors in reducing these diseases and mortality rates. The active and smart city concept, which includes service management, smart health and smart infrastructure components, is an important component and part of the healthy city concept (Edwards and Tsouros, 2008).

The definition of smart city is the transformation of existing urban structure and infrastructure through the use of information technology, sustainable management of natural and human resources, public participatory governance to increase economic and political efficiency and provide high quality social, cultural and sustainable urban development (Boob, 2015:25). Although digital innovation seems to be at

the center of the smart city concept, the main issue in the information society paradigm is the contribution of smart technology and digital innovation investments to ultimately improving the well-being of citizens. A human-friendly urban transformation should be recognized as the key to making a city smarter and preserving its cultural heritage. For this reason, the OECD defines smart cities as “initiatives or approaches that effectively use digitization to improve the well-being of citizens and deliver more efficient, sustainable and inclusive urban services and environments as part of a collaborative, multi-stakeholder process.” (OECD, 2018) In terms of the competence of municipalities, the “smart city” is essentially the organic connection between technological, human and institutional components, where social factors other than smart digital technologies are central (Nam & Pardo, 2011).

Sports is one of the most important services a municipality can offer to its residents. Sports have versatile, layered and positive contributions to those who are interested. Sports is one of the most important tools for young people to stay away from harmful habits and adopt a dynamic, constructive-creative, participatory lifestyle. However, it is not enough to just build a sports field or an outdoor exercise park. Sport is an order and a cultural structure. If this cannot be achieved, the investment to be made in sports fields will not be enough to achieve the desired results. In addition, it is necessary to provide the necessary infrastructure for sports organizations organized and attended by young people. This will also provide strength, breakthrough and participation in democratization efforts (Erdemli, 2007).

Culture, art and sports activities will create the environment and opportunities for people to be fed from the environment they live in, physically and spiritually, and to produce material and spiritual values that they can contribute to the development of this environment (Turkish Environment and Urban Ministry, 2019: 396). Due to space, budget and resource constraints, most metropolitan cities today suffer from a chronic lack of facilities and venues that prevent local residents from having equal access to sport and physical activity. To face these challenges, cities need to find new alternative and smart solutions in terms of both space and sports applications. Essentially, every square foot, every staircase, every sidewalk, every street corner, every park is a potential playground, or more broadly, a space for physical activity (World Union of Olympic Cities, 2016:2).

Especially in Istanbul, human density and traffic are among the most urgent problems of local governments and city planners. With students, employees, business owners, shoppers, and tourists circulating throughout the city during the day, the population of different parts of the city is thought to increase fivefold every day. With more than 2 million daily passengers, Istanbul faces the biggest mobility, traffic and congestion challenges worldwide. These challenges have prompted the city government to look for innovative ways to improve the quality of the city's public life and to focus on existing barriers to walking or cycling in the city (Kielgast et al., 2017:26). As a result of this study, data was collected through a survey and explained how user satisfaction, safety (both perceived safety and

actual accident numbers), commercial indicators of local businesses were affected. This assessment is an important tool for adjustments and redesign that may be needed when the time comes.

In this context, it is clearly seen that the social and individual effects of the studies carried out by the municipalities on urban planning should be evaluated. In this study, an exploratory research was planned to profile the citizens in the physical activity areas and outdoor exercise parks in two different districts.

2. RELATIONSHIP BETWEEN HEALTH AND PHYSICAL ACTIVITY IN ACTIVE CITY LIFE

Physical activity to meet basic life needs has become an action to protect health in the modernizing world. Today, the inactivity brought about by business life negatively affects individuals in terms of physical activity, and the limited physical activity of the elderly population causes them to encounter psychological, behavioral and physiological problems. As a result of the researches, it has been revealed that regular physical activity can prevent obesity with a regular working metabolism, especially cardiovascular diseases, and individuals can be healthier mentally (Bulut, 2013).

Outdoor exercise parks appear as an important environmental infrastructure for both physical activity and socialization of citizens in public environments. Especially considering the sedentary lives of elderly individuals, these parks that promote their health and mobility act as a very important tool (Levinger et al., 2020). In fact, in a study conducted on elderly individuals, it was shown that physical activity levels of individuals using outdoor exercise park equipment can be considered low and moderate intensity (Chow and Ho, 2018). However, it is known that there are some problems with the use of exercise equipment, and that the equipment used is not made in accordance with the instructions, causing various health problems and sports injuries (Chow and Wu, 2019).

One aspect that may be particularly relevant to the promotion of physical activity in parks is the provision of outdoor exercise equipment, which typically includes fixed mechanical setups aimed at aerobic fitness, strength, flexibility and balance. Outdoor exercise equipment offers people from different demographic groups the opportunity to participate in both aerobic and strength-based physical activity free of charge. For example, according to a survey of older adult outdoor exercise park users in Australia, 52% of respondents said they use outdoor exercise equipment in a park and these users are more likely to speak a language other than English at home (Stride et al., 2017). In another study of outdoor exercise equipment users in Australia (n=54; 57% women), the majority (71%) reported that they visited the park more often after the exercise equipment was installed, and 58% stated that they currently use the equipment at least once a week (Furber et al., 2014).

Outdoor recreation activities reduce the stress level (Tyrväinen et al., 2014) and disturbances caused by city noise (Gidlöf-Gunnarsson & Öhrström, 2007; Dzhambov & Dimitrova, 2014), giving citizens a sense of peace and tranquility (Kaplan & Kaplan, 2003, Song et al., 2007). Participation in outdoor recreation

is associated with lower levels of depression in individuals with disabilities (Wilson & Christensen, 2012) and in individuals over the age of 65 (Christensen et al., 2014: 542). Visiting outdoor parks in the city has been associated with better outcomes in heart rate and sympathetic nerve activities, lower levels of negative emotions and anxiety (Song et al., 2015).

In addition to the psychological benefits that outdoor exercise parks provide to individuals, they offer opportunities such as protection from diseases such as osteoporosis and type-2 diabetes (Schmitt et al., 2009; Sixt et al., 2010). Of course, the recommended exercise time to take advantage of this protection opportunity includes 30 minutes of work every day. For children and adolescents, the specified time has been reported as at least 5 days and one hour per week (Dunstan et al., 2004; Stamatakis et al., 2007; Abu-Omar & Rütten, 2008; Tucker et al., 2009). Also, a small body of research suggests that outdoor exercise equipment can provide a meaningful source of physical activity. For example, after participation in programs using outdoor exercise equipment, Korean women (65+ years) showed improvements in strength/endurance and physical function, and positive reductions in body size compared to a control group (Kim et al., 2018). An increase in muscular endurance has been reported among overweight and sedentary women (Nguyen & Raney, 2014).

Although the positive effects of physical activity on people have been reported in many studies (Jansson et al., 2019), research shows that the physical activity needed in the society is not met (Hallal et al., 2012). As a solution to this problem, local governments have established outdoor exercise parks in their regions and these parks have attracted great interest from the public (Ferdinand et al., 2012; Sallis et al., 2012). Of course, in order to provide optimum benefit from exercise parks, it is necessary to design the parks in a qualified way and to raise the awareness of the users about exercise (Şimşek et al., 2011). In order for the public authorities to provide all these, due diligence for citizens and planning based on the profiles of individuals play an important role.

3. URBAN TRANSFORMATION AND THE DUTIES OF PUBLIC AUTHORITY ON ACTIVE CITIZEN LIFE

In the context of urban transformation, the slogan of “think globally, act locally” represents a new, comprehensive and integrative approach, which is the essence of sustainable development. One of the first examples of this process, the International Healthy and Ecological Cities Congress was held in Madrid in 1995. In this context, the concept of ecology is used in the sense of regional socioeconomic change and development. The eastern part of Leipzig, for example, has been ecologically restructured with various projects initiated (Price & Tsouros, 1996). In cities like Barcelona, urban transformation as vehicle-free superblocks are oases in the densely populated urban landscape that provide space for community life, green space, sport and exercise (Reimer et al, 2019:115). Examples of integrated approaches of urban transformation (Edwards & Tsouros, 2008) that have been strategized and turned into action include Copenhagen City Health Plan (Copenhagen, Denmark), Mega City Approach: Tokyo

Healthy City (Tokyo, Japan), City Child Project: Child Friendly City (Milan, Italy), Development of Glasgow City Plans (Glasgow, UK), Housing Improvement, Public Health and Local Economy (Glasgow, UK), Green Action Plan (Krakow, Poland), comprehensive integration of environmental policies from recycling to sectors (Schwabach, Germany).

In this transformation process, the smart person is the active individual whose servant is urbanization. A smart person is a person who has high awareness, participation and creativity, is a lifelong learner, incorporates information technologies into his life, is the main element of human and social capital and is the focal point of city life. Social infrastructure, cultural interaction and addiction issues are covered within the scope of the smart human component. Social infrastructure; These are the activities and services aimed at increasing the quality of life of people and society, such as education, health, culture, tourism, art, sports, mobility and social assistance, which constitute the cornerstones of the social structure. In this context, the importance of the individual's mental, psychological and bodily action and physical activity is very critical (Turkish Environment and Urban Ministry, 2019: 23).

The importance of sports for the public was emphasized for the first time in the 1982 Constitution No. 2709 of the Republic of Turkey. Under the title of promoting sports, article 59 of the Constitution states the role of public administration: "The state takes measures to improve the physical and mental health of Turkish citizens of all ages, and encourages the spread of sports to the masses."

According to article 7/d of the Metropolitan Municipality Law dated 2005 and numbered 5216, the duties, authorities and responsibilities of the district and first-tier municipalities are as follows: "to build parking lots, sports, recreation and entertainment places and parks; to provide social and cultural services for the elderly, the disabled, women, youth and children; opening vocational training and skills courses; construction, maintenance and repair of health, education, cultural facilities and buildings and to protect cultural and natural assets and historical texture; to provide services for the development of places and functions that are important for the history of the city" According to Article 7/m of the Law, the duties, authorities and responsibilities of the metropolitan municipality are as follows: "to build, operate or have the social facilities, regional parks, sports, recreation, entertainment and similar places that serve the integrity of the metropolitan; when necessary, to provide materials and support to amateur sports clubs, to organize sports competitions between amateur teams, to award athletes who have excelled in national and international competitions or won degrees, by the decision of the city council." As can be seen, in accordance with the expression "spreading sports to the masses" in the dominant provision of the Constitution, the Municipal Law obliges local governments to build playgrounds and sports fields and prepare the necessary infrastructure.

Governors and district governors are also the youth and sports heads of provinces and districts. The services of the organization are carried out by the provincial director in the provinces and by the district director in the districts. Provincial Directorates of Youth and Sports have been established in provinces,

and District Directorates of Youth and Sports have been established in districts. Among the duties of the General Directorate of Youth and Sports, it is stated that "to build, have them built, operate and make these facilities available to the citizens, including youth centers, camps, fields, facilities and materials necessary for physical education, youth and sports activities" (Istanbul and Anatolian Side Sports Report, 2000:6-7).

Under the title of "Sports" of the Eleventh Development Plan (Presidency of the Republic of Turkey Strategy and Budget Department, 2019:164-166) of Turkey, targets such as; providing sports education from an early age, increasing the quality of physical education and sports lessons in formal education, promoting the regular participation of citizens of all ages in sports activities by developing sports opportunities on site, encouraging everyone, especially disabled citizens, to participate in sports activities, integration of school and neighborhood sports clubs in the digital environment and carrying out the monitoring and evaluation activities of these clubs, the construction and effective use of sports facilities at the national level considering the geographical location, climate and demographic structure, the restructuring of the data sets of the sports field and the creation of a data infrastructure, the development of regions suitable for sports tourism. and to carry out a comprehensive inventory analysis study for the identification and evaluation of areas, have been determined.

Developed countries constantly raise the standards of green spaces and exercise parks that should be in residential areas and seriously apply them. The most important factor in determining these standards is the importance that the state and local governments give to people and sports. Also; the geography of the settlements, the climate of the region, the density of settlement, social characteristics, financial opportunities and other conditions are also effective in the formation of these standards. It is a necessity to carry out scientific studies in order to establish standards related to regional differences. Green areas, sports and playgrounds should be classified in the light of scientific data. These areas have been arranged in accordance with the natural environment of the city and the zoning plan. Regulations regarding the scale of sports and exercise areas in Turkey are regulated by the circulars of the Ministry of Construction and Settlement. In this arrangement, the green area rate was considered as 7 square meters per person and accordingly, it was foreseen that there would be 3 square meters of sports area per person (Istanbul and Anatolian Side Sports Report, 2000:23-24).

In addition, the principles of the European Urban Charter also impose important responsibilities on recreation on local governments. Every city dweller has the right to participate in sports and recreation activities. In accordance with the provisions of the Sports for All Charter, local governments are responsible for ensuring that everyone enjoys sports and exercise facilities, regardless of social location, income and socioeconomic status, age, gender or ethnic group (Orta, 2004).

The World Urban Forum included also the objectives "to organize forums for young people to conduct empirical research on the opportunities and challenges faced by young people in the city, and to discuss

and review research results" and "developing city and country-level strategies covering skills development, job creation, sports and recreation at the end of a participatory process" (Turkish Environment and Urban Ministry, 2019: 389).

By increasing the content and diversity in sportive activities, which enable the residents of the city to be fed from the environment they live in physically and spiritually and also contribute to the development of this environment; Areas such as walking paths, bicycle ways and parking areas, skateboarding and skating rinks, football, basketball and volleyball fields, martial arts center, e-sports digital platforms, aircraft construction workshops should be designed throughout the city and more active and intense participation in sports activities should be ensured (Turkish Environment and Urban Ministry, 2019: 396).

It should be ensured that culture, art, sports and tourism services are presented in an effective and efficient manner, taking into account new approaches such as the sharing economy, based on data and through information management systems (Turkish Environment and Urban Ministry, 2019: 396-397). From this point of view, the main purpose of this study is to emphasize that outdoor exercise parks should be designed based on the needs and requirements of the users and local people.

The study by Jendrek (1988) tried to determine the differences in recreational behavior between adults and youth. The research was applied in two different regions. As a result this research, it has been revealed that young people, children and families with children use the park more. This raises the question of who we will manage the park for. If the users will be children and teenagers, the activities that young people like and belong to should be discussed at the design stage. As a result, this study is a study to find out who the real user of the park is.

4. METHODOLOGY

Survey, behavioral mapping and participant observation methods were used in previous studies on outdoor park areas. With these methods, it has been tried to determine whether the parks are used or not and which activities are used according to age and gender. For example, the park, which is the subject of the research conducted by Rager and Wentworth (1978), was divided into zones and a behavioral map was created and a face-to-face survey was applied to the users in the park.

In this study, a quantitative survey method, in which interviews were conducted to determine and mark the preferences of the participants, was preferred according to the questions in a printed inventory form. The population of the research consisted of individuals using the exercise park areas in Beykoz and Maltepe districts on the Anatolian side of Istanbul. Data were collected by visiting 10 different parks in each district. The research was conducted in 2018.

The sample of the study consisted of a total of 500 people, 260 women and 240 men, who were selected from this population by convenience sampling method. An inventory was created as a result of

the literature review and the questionnaire was finalized with the opinions of researchers and two experts. There are 9 demographic questions and 19 questions about the use of parking space in the survey, and the survey was applied by one-on-one interview method. A citizen could use more than one choice while answering the questions. Descriptive statistics and difference analyzes were calculated on the obtained data by SPSS. The relationship between the two districts was examined using chi-square analysis. In this study, the significance level of p value was taken as 10%.

5. RESULTS

When the data obtained are examined, the age range of the individuals using the outdoor exercise park areas is 51.2% between 18-30 years old, 40.6% between 31-50 years old and 8.2% at 51 years and over. It was determined that the participants usually came irregularly (54%) or 2-3 times a week (26%) for exercise and mostly on the weekends (68%), and they did not prefer to come in the afternoons on weekdays (14%). Overall, 46.2% of the participants use these parks after 16:00 and 48.8% of all participants exercise for less than 30 minutes.

When asked why this time slot in the exercise park was preferred, starting from the most important factor, 58.2% of the participants stated that they preferred the time when the park was empty, 45.4% said that the weather conditions were effective, 45% said that their own working hours are effective, 35.6% said that their children are effective and 27% other effects.

When asked about the reasons for choosing this park for exercise, 93.4% of the participants received the advice of friends or neighbors, 86.8% said that the gyms are closed and unhygienic, 82.2% said that their children can play in the park while exercising. 81.2% stated that other activities and gyms are expensive, 60% said that outdoor exercise parks are free, and 40% stated that they want to be outside.

It was determined that 69% of the participants came to the park on foot, 14% by private vehicle, 8% by public transport, 7% by bicycle and 2% by electric motor. It is seen that 42% of the participants do not know for what specific purpose the exercise equipment is used. But 38% of the participants said that they did other exercises on the same day.

21.6% of the participants stated that they had a health check before starting to use the exercise parks, and 11.8% of the participants said that they injured themselves while using the exercise equipment. 12% in Beykoz, 11.2% in Maltepe, the rate of those who experienced injury during exercise is close to each other among the districts. Approximately 78% of the injured people in Beykoz and 80% of those injured in Maltepe stated that they had back problems. According to findings, there was no significant relationship between having a health check up and being sick while using a sports equipment ($p=,893$) or having knowledge about sports injuries ($p=,852$). However, it has been determined that there is a significant relation ($p=,057$) between performing warm-up exercises before starting the exercise and

experiencing discomfort or injury during exercise. Those who do the occasional warm-up before exercising and those who always warm up experience less discomfort during exercise.

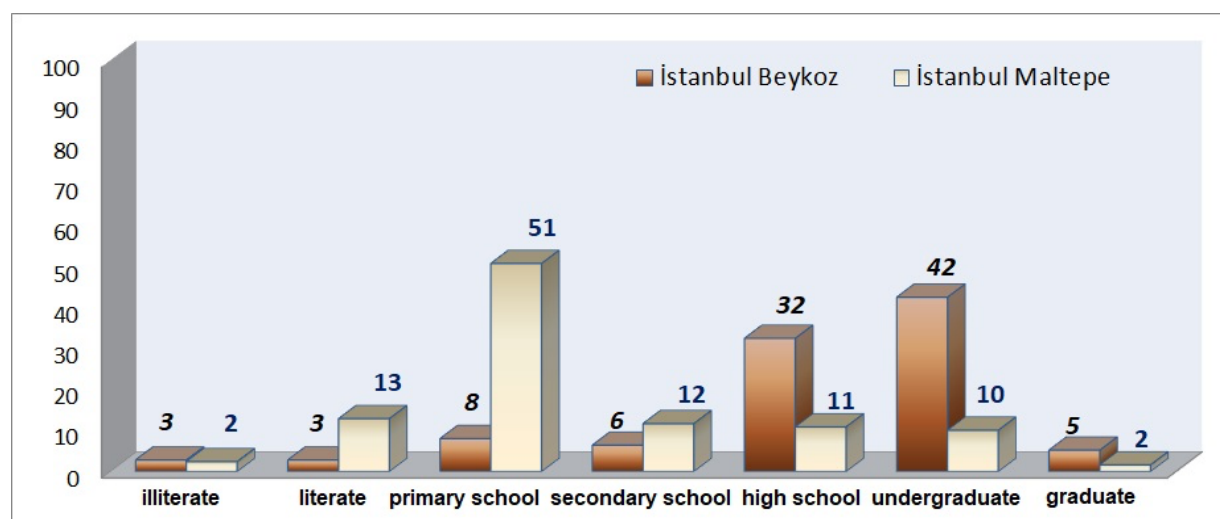
It was observed that the people who visited the parks showed a demographic difference according to the district (Table 1). Although men are more frequently encountered in outdoor exercise parks in Beykoz, it has been observed that women are more common in exercise parks in Maltepe.

Table 1: Demographic Differences of Visitors to the Park by Districts

		İstanbul Beykoz		İstanbul Maltepe	
		Frequency	Percentage	Frequency	Percentage
Gender	Female	74	29.6%	186	74.7%
	Male	176	70.4%	63	25.3%
Working Status	Working	113	45.2%	106	42.6%
	Non-Working	137	54.8%	143	57.4%
Age	Mean	34.38		30.95	

It was observed that the number of visitors to the park areas in the districts differed according to their education level (Table 2). While the education level is generally high school and university in Beykoz, there is a predominance at primary school level in Maltepe.

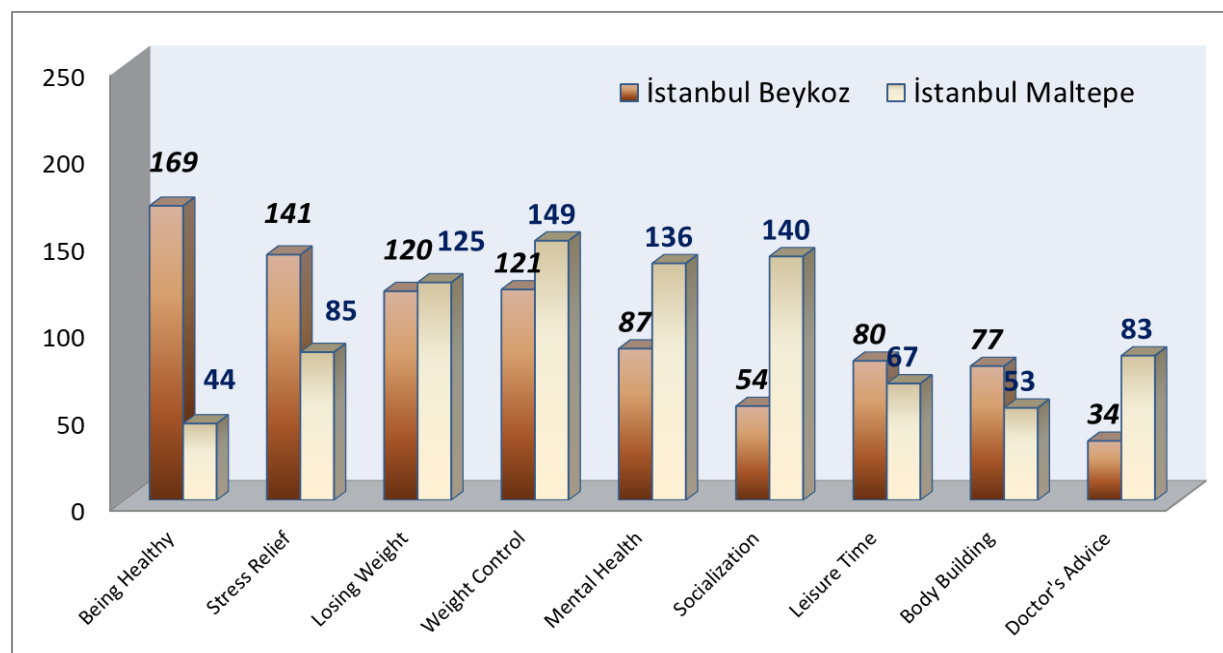
Table 2: Percentage Distribution of Educational Status of Individuals Using Park Areas by Districts



In addition to the emergence of a general picture for those who use the sports parking areas, it is understood that the preferences of the citizens also change according to the districts (Table 3). While

the residents of Beykoz prefer the exercise park primarily to be healthy (67.6%) and relieve stress (56.4%), the residents of Maltepe primarily prefer the park for weight control (59.6%), socializing (56%) and mental health (54.4%).

Table 3: Usage Habits Of Individuals Using Outdoor Exercise Parks



While the rate of those who come to the park without sports clothes and shoes in Beykoz is 33.7%, it is only 2% in Maltepe. It is seen that the visitors in Maltepe are more prepared in terms of sportswear. While those who use the exercise park areas in Beykoz mostly feel happy (44.4%) and vigorous, those in Maltepe describe themselves as healthy (56.6%), tired and feel muscle pain. Compared to the intended use of the park, this finding suggests that the people in Maltepe see the park more as a health and sports area.

When the participants stated the deficiencies they saw in the parks, they said that the maintenance of sports equipment, the instructions for the use of exercise equipment, rest and sitting bench, lack of toilet and changing cabin, the absence of a bicycle park, security staff, football field, basketball hoops, and water fountains were deficiencies, respectively. They also said that the children's playground and lighting were insufficient. The reasons for some of these are due to the fact that the parks for which data are collected for research in the districts are relatively small compared to the big city parks.

5. DISCUSSION

Local governments in Turkey overlook the physical activity venues, recreation areas and facilities, and do not work to learn the views of the residents about the recreational needs and areas, to measure their recreational behaviors and to learn the problems of the recreation parks from the eyes of the citizens

(Kara et al., 2008). As a part of human nature and active life, sport is an important social and cultural tool for civilization. For humanity, the need for sport cannot be transferred, transformed or postponed. Sports and exercise should be done at all ages and conditions. Sports and exercise are indispensable for human life and local citizenship because they are fundamental rights. Recreation activities will create the environment and opportunities for citizens to be fed from the district they live in, physically and spiritually, and to produce material and spiritual values that they can contribute to the development of this environment.

It is seen that citizens prefer outdoor exercise parks primarily for stress relief and health protection, weight loss or weight control, and then for socialization, leisure time and specific needs. However, it shows that the user profiles of the exercise park on the Anatolian side of Istanbul has a significant difference between Beykoz and Maltepe districts in terms of usage habits and socio-economic status, therefore, the social municipality services to be offered should be differentiated in accordance with the citizen profile.

When we look at the similarities, in both districts, the participants generally use the sports park areas outside of lunch hours (12:00-16:00). A similar result was found in the study of Dođru and colleagues (2015). In the study conducted by ŐimŐek and colleagues (2011), it is seen that attendance decreases in the evening hours (23%). However, the reason for this can be attributed to the continental climate of the province where this study was conducted. From this point of view, it is seen that the usage habits of the parks may vary according to the climate.

Kara and colleagues examined the use of recreational areas in the Historic Peninsula of Istanbul with a survey. 31% of the participants visited the park once a week, 28% every two weeks and 39% once a month. 41% of visitors to this area are engaged in sports activities (Kara et al., 2008). Unlike this study, the results of the research show that the participants usually come to this exercise park several times a week. The reason for this may be the difference in usage and habits of the citizens of these park areas.

In the findings of the study, most of the participants stated that they spared 30 minutes at most for exercise. This result is not similar to the study of ŐimŐek and colleagues (2011), but partially similar to the study results (in the range of 20-40/40-60 minutes) of Dođru and colleagues (2015). It is seen that the selection of the arrival and stay time of the exercise park according to the time when the equipment is free indicates that the exercise park areas and sports equipment are not sufficient.

64% of the participants stated that they did not examine the instructions about the equipment in the parks or did not see them at all. While this result is not in line with the study of Ay (2013), the results of Lapa and colleagues (2012) show parallelism with the study.

While 18% of the participants do not use sports clothes and shoes on average, the rate of those who come to the park without sports clothes and shoes in Beykoz is 33.7%, while it is 2% in Maltepe. In the

study of Doğru and colleagues (2015), it was seen that 9% of the individuals did sports with inappropriate clothes and 22% of them did sports with inappropriate shoes. While 76% of the individuals did not experience any health problems due to exercise, it was determined that 54% of the participants complained of muscle pain after exercise. 18% stated that they did not have enough information about the right exercise. Although the results seem to show similarity when looking at the average of the districts, it is seen that the usage rates differ according to the districts, therefore the findings do not fully overlap. In terms of health problems, instead of complaining about muscle pain, it is seen that back and waist pains are more prominent in the research.

Before exercise, 73% of individuals answered "I do warm-up exercises sometimes/not at all" and it was found that this situation was associated with injuries during exercises ($p>0.1$). This result is similar to the study of Ay (2013). In the study of Şimsek and colleagues (2011), it was also observed that as the tendency to wear sports shoes increased, the health problems encountered during exercise decreased. As the number of people doing warm-up exercises decreased, it was determined that there was an increase in health problems after exercise.

The result that the participants in Beykoz district use the outdoor exercise park areas for psychological relaxation rather than physical development is similar to some studies in the literature (Dishman et al., 2004, Schmitt et al., 2009). Also the fact that those who use the park listen to the advice of friends and neighbors shows that the outdoor exercise parks reinforce the fact that these areas are social environments.

The fact that 74.7% of the individuals using the sports park areas in Maltepe district are women and the answer "my child can play comfortably" among the reasons for choosing the park makes one think of the necessity of a playground for children in the immediate vicinity.

6. CONCLUSION

Research results show that citizens do not use exercise tools with sufficient awareness. According to the results, it is seen that citizens who use exercise parks should be informed about health checks, correct exercise program and how to protect themselves from injuries while using sports equipment. The fact that the injuries experienced are especially related to low back problems shows that those who exercise do not have enough information about their health status to do physical activity.

Since there is a relationship between doing warm-up exercises before starting exercise and experiencing discomfort or injury during exercise, sports professionals or written instructions should direct the citizen to warm up, especially before using sports equipment. Considering that 33.3% of the trainers working at the sports centers in Istanbul are Physical Education and Sports School students and 8.3% are students from different departments (Ataçocuğu & Zelyurt, 2016), it can be seen that sports and exercise areas are used in community service practices or internship practices of high

schools and universities. In the study of Lapa and colleagues (2012), it is seen that there is an expectation (87.7%) in this direction. Likewise, Sivrikaya (2009) made a suggestion in this direction in his study.

It can be suggested to researchers that climate changes cause some differences in the results, since climatic conditions are important according to the literature and those who use the parks generally prefer nice and clear weather, and it can be said that it would be beneficial to collect the data of such studies from different parts of the city in different seasons. It has been observed that in exercise parks, playground equipment and sports equipment are generally open and cannot be used during and after rain or snow. For this reason, partially covered and more sheltered physical activity designs can be considered in parks.

Since this research was conducted with convenience sampling method, it would be more appropriate to choose a more reliable sampling method in future feasibility studies or scientific researches.

Although the necessary social and technical equipment areas are provided at minimum criteria in accordance with the zoning legislation in urban planning, incorrect site selection decisions are observed due to the inability to evaluate parameters such as accessibility, demographic and social characteristics during the preparation of zoning plans. The simultaneous evaluation of parameters with technological methods such as geographic information systems (GIS) and remote sensing (RS) will both facilitate making the right site selection decisions and ensure that the whole city or settlement is perceived as a whole (Eminağaoğlu & Yavuz, 2010). Essentially, for a smart urban transformation, the lifestyles and socio-cultural factors of the people of the region should be evaluated as parameters in the design of outdoor exercise parks.

Unlike the young and old, it can be thought that the parents prefer to have the playground and exercise equipment close to each other, and for their children to play and socialize with other children, since they spend time with their children in the exercise parks. On the other hand, for adults who do not have children, the park can be considered to have a quieter meaning. These orientations can also be effective in designing parks differently according to the characteristics of nearby residents.

Another suggestion can be made to local governments that the guidelines for the use of exercise equipment in sports areas should be reviewed and the missing ones should be completed. In order to increase the maturity of the smart human component, inclusive outdoor spaces and urban architecture should be planned in many areas, from services for complex education, culture, sports and physical activity to meeting the needs of the disadvantaged. It is seen that the selection of the arrival and stay time of the park according to the time when the equipment is empty indicates that the exercise parking areas should be expanded by the municipality.

In different districts, the habits and use of sports clothes and shoes of those who use exercise equipment may differ even by being influenced by their environment. According to the findings, it is understood that the user profiles of the exercise park differ significantly between the districts in terms of usage habits, socio-economic status and environmental factors. For this reason, it is suggested that social municipality services, walking and cycling tracks, sports complexes and smart city applications to be offered from the perspective of smart urban transformation should be diversified in accordance with the citizen profile and preferences in the region.

REFERENCES

- Abu-Omar, K. & Rütten A. (2008). Relation Of Leisure Time, Occupational, Domestic, And Commuting Physical Activity to Health Indicators in Europe, *Preventive Medicine*, 47, 319-323.
- Ataçocuğu, M. Ş., & Zelyurt, M. K. (2017). A Qualitative Research on the Unemployment Experiences of Graduates of Sport Sciences Faculties. *Sportif Bakış: Spor ve Eğitim Bilimleri Dergisi*, Special Issue 1, 70-97.
- Ay, O. (2013). Parklarda Bulunan Egzersiz alanlarını Kullanmanın Yararları ve Zararları Burdur İl Merkezi Çalışması, Unpublished Master Thesis, Mehmet Akif Ersoy Üniversitesi, Eğitim Bilimleri Enstitüsü, Beden Eğitimi ve Spor Öğretmenliği Anabilim Dalı.
- Batal, S. (2015) Türkiye’de Sosyal Devlet Kavramının Dönüşümü: Sosyal Belediyecilik, *Türkiye Sosyal Araştırmalar Dergisi*, 19(2), 221-245.
- Boob, T N. (2015). Transformation of Urban Development to Smart Cities: The Challenges. *IOSR Journal of Mechanical and Civil Engineering*, 12(3), 24-30.
- Bulut, S. (2013). Sağlıkta Sosyal bir Belirleyici: Fiziksel Aktivite. *Turkish Bulletin of Hygiene & Experimental Biology*, 70(4).
- Chase, A. (1996). *Recreation and Leisure Programming*, Dubuque, Iowa: Eddie Bowers Publishing Inc., USA
- Christensen, L. B., Johnson, R. B., & Turner, L. A. (2014). *Research Methods, Design, and Analysis*, 12nd edition, Hoboken, NJ: Pearson Education Limited, USA.
- Chow, H. W., & Ho, C. H. (2018). Does The Use of Outdoor Fitness Equipment by Older Adults Qualify as Moderate to Vigorous Physical Activity? *Plos One*, 13(4), 13.
- Chow, H. W., & Wu, D. R. (2019). Outdoor Fitness Equipment Usage Behaviors in Natural Settings. *International Journal of Environmental Research and Public Health*, 16(3), 18.
- Dishman R. K., Washburn R. A., & Heath G.W. (2004), Physical Activity Epidemiology. *American Journal of Epidemiology*, 159, 910-911.
- Doğru, E., Kızılcı M. H., Balcı, N. Ç., Korkmaz, N. Ç., & Tekindal M. A. (2015) Açık Alan Spor Aletlerini Kullanan Bireylerin Egzersiz Bilinç ve Alışkanlıklarının İncelenmesi, *Journal of Exercise Therapy and Rehabilitation*, 2(3), 102-109.
- Dunstan D. W., Salmon J., Owen N., Armstrong T., Zimmet P. Z., & Welborn T. A. (2004). Physical Activity and Television Viewing in Relation to Risk of Undiagnosed Abnormal Glucose Metabolism in Adults, *Diabetes Care*, 27, 2603–2609.
- Dzhambov, A. M., & Dimitrova, D. D. (2014). Urban Green Spaces’ Effectiveness as a Psychological Buffer for the Negative Health Impact of Noise Pollution: A Systematic Review. *Noise Health*, 16, 157-165.
- Edwards, P. ve Tsouros, A.D. (2008) *A Healthy, Active City: A Physical Activity Planning Guide*. Geneva: World Health Organization (WHO)
- Erdemli, A. (2001). *Yerel Yönetimler ve Spor*, Radikal Newspaper Column.
- Eminağaoğlu, Z., & Yavuz, A. (2010). Kentsel Yeşil Alanların Planlanması ve Tasarımını Etkileyen Faktörler: Artvin İli Örneği, III. *Ulusal Karadeniz Ormancılık Kongresi*, Cilt IV, 1536-1547.
- Ferdinand, A. O., Sen, B., Rahurkar, S., Engler, S., & Menachemi, N. (2012). The Relationship Between Built Environments and Physical Activity: A Systematic Review. *American Journal of Public Health*, 102(10), E7-E13.

- Furber, S., Pomroy, H., Grego, S., & Tavener-Smith, K. (2014). People's Experiences of Using Outdoor Gym Equipment in Parks. *Health Promotion Journal of Australia: Official Journal of Australian Association of Health Promotion Professionals*, 25(3), 211.
- Gidlöf-Gunnarsson, A., & Öhrström, E. (2007). Noise and Well-Being in Urban Residential Environments: The Potential Role of Perceived Availability to Nearby Green Areas. *Landscape and Urban Planning*, 83(2-3), 115–126.
- Hallal, P. C., Andersen, L. B., Bull, F. C., Guthold, R., Haskell, W., & Ekelund, U. (2012). Global Physical Activity Levels: Surveillance Progress, Pitfalls, and Prospects. *The Lancet*, 380, 247-257. [https://doi.org/10.1016/S0140-6736\(12\)60646-1](https://doi.org/10.1016/S0140-6736(12)60646-1)
- Istanbul and Anatolian Side Sports Report (2000). *Istanbul ve Anadolu Yakası Spor Dosyası: Problemler ve Çözüm Önerileri*, İstanbul Anadolu Yakası Belediyeleri, Report No. 2 İstanbul.
- Jansson, A. K., Lubans, D. R., Smith, J. J., Duncan, M. J., Haslam, R., & Plotnikoff, R. C. (2019). A Systematic Review of Outdoor Gym Use: Current Evidence and Future Directions. *Journal of Science and Medicine in Sport*, 22(12), 1335-1343.
- Jendrek, M.P. (1988). Outdoor Recreational Needs Assesments; The Importance of Drawing Two Samples from the Community, *Journal of Leisure Research*, 20(2), 154-161
- Kaplan, S., & Kaplan, R. (2003). Health, Supportive Environments, and the Reasonable Person Model. *American Journal of Public Health*, 93, 1484–1489.
- Kara, F., Demirci, A., & Kocaman, S. (2008). Şehir Coğrafyası Açısından Bir Araştırma: İstanbul'un Açık Rekreasyon Alanlarının Değerlendirilmesi, *Marmara Coğrafya Dergisi*, 18, 76-95.
- Kielgast, L. V., Tsay, S., Jewell, J., Breda, J., Racioppi, F. & Galea, G. (2017). *Towards More Physical Activity in Cities*, WHO Report, European Commission Directorate-General for Education and Culture.
- Kim, D. I., Lee, D. H., Hong, S., Jo, S. W., Won, Y. S., & Jeon, J. Y. (2018). Six Weeks of Combined Aerobic and Resistance Exercise Using Outdoor Exercise Machines Improves Fitness, Insulin Resistance, and Chemerin in the Korean Elderly: A pilot Randomized Controlled Trial. *Archives of Gerontology and Geriatrics*, 75, 59-64.
- Lapa, T.Y., Varol, R., Tuncel, E.F., Ağyar, E., Certel, Z., (2012), Belediye'ye Ait Park Alanlarını Sportif Amaçlı Kullanan Bireylerin Katılımlarının ve Beklentilerinin İncelenmesi: Bornova Örneği, *I. Rekreasyon Araştırmaları Kongresi*, 851-865.
- Levinger, P., Panisset, M., Parker, H., Batchelor, F., Tye, M., & Hill, K. D. (2020). Guidance About Age-Friendly Outdoor Exercise Equipment and Associated Strategies to Maximise Usability for Older People. *Health Promotion Journal of Australia*, 8.
- MacAuley D. (1994). A History of Physical Activity, Health and Medicine. *Journal of the Royal Society of Medicine*, 87, 32-35.
- Nam, T., & Pardo, T.A. (2011) Conceptualizing Smart City with Dimensions of Technology, People, and Institutions. *Proceedings of the 12th Annual International Digital Government Research Conference: Digital Government Innovation in Challenging Times*, College Park, 282-291. <https://doi.org/10.1145/2037556.2037602>
- Nguyen, C. H., & Raney, M. A. (2014). Exercise Training with Fitness Zone Equipment in Sedentary Hispanic Women. *Californian Journal of Health Promotion*, 12(1), 83-87.
- OECD (2018). *Housing Dynamics in Korea: Building Inclusive and Smart Cities*, OECD Publishing, <http://dx.doi.org/10.1787/9789264298880-en>.
- Orta, L. (2004). *Belediyeler ve Spor, Yerel Yönetimler Kongresi: Dünden Bugüne Yerel Yönetimlerde Yeniden Yapılanma*, 3-4 December 2004, Çanakkale, 707-712
- Pektaş, E. K. (2014). Türkiye'de Sosyal Belediyecilik Uygulamaları ve Temel Sorunlar. *Akademik İncelemeler Dergisi*, 5 (1), 4-22.
- Presidency of the Republic of Turkey Strategy and Budget Department (2019). *Eleventh Development Plan (2019-2023)*, Ankara.
- Price, C. & Tsouros, A. (1996). *Our Cities, Our Future: Policies and Action Plans for Health and Sustainable Development*, WHO Healthy Cities Project Office, Copenhagen.
- Rager, A.N., & Wentworth, W.R. (1978). *Urban Park Evaluation, Environmental Design Evaluation*, NewYork and London: Plenum Press.

- Reimer, A., Ochoa, C., Basile, F. L. & Herrero, A. (2019). *Mobility and Pollution. Fearless Cities: A Guide to the Global Municipalist Movement*, Barcelona En Comú (ed.) Oxford: New Internationalist Publications Ltd.
- Sallis, J. F., Floyd, M. F., Rodríguez, D. A., & Saelens, B. E. (2012). Role of Built Environments in Physical Activity, Obesity, and Cardiovascular Disease. *Circulation*, 125(5), 729-737.
- Schmitt, N.M., Schmitt, J., & Dören, M. (2009). The Role of Physical Activity in The Prevention of Osteoporosis in Postmenopausal Women-An Update, *Maturitas*, 63, 34–38.
- Sixt, S., Beer, S., Blüher, M., Korff, N., Peschel, T. (2010). Long- But Not Short-Term Multifactorial Intervention with Focus on Exercise Training Improves Coronary Endothelial Dysfunction in Diabetes Mellitus Type 2 and Coronary Artery Disease, *European Heart Journal*, 31, 112–119.
- Sivrikaya, Ö., & Doğu, G. (2009). Düzce Belediyesinin Spor Hizmetleri için Örnek bir Yönetim Modeli. Unpublished PhD Thesis, Abant İzzet Baysal Üniversitesi Sosyal Bilimler Enstitüsü.
- Song, Y., Gee, G. C., Fan, Y., & Takeuchi, D.T. (2007). Do Physical Neighborhood Characteristics Matter in Predicting Traffic Stress and Health Outcomes? *Transportation Research Part F*, 10, 164-176.
- Song, C., Ikei, H., Igarashi, M., Takagaki, M., & Miyazaki, Y. (2015). Physiological and Psychological Effects of a Walk in Urban Parks in Fall. *International Journal of Environmental Research and Public Health*, 12, 14216-14228. <https://doi.org/10.3390/ijerph121114216>
- Stamatakis E., Hillsdon M., & Primatesta P. (2007). Domestic Physical Activity in Relationship to multiple CVD Risk Factors. *American Journal of Preventive Medicine*, 32 (4), 320-327.
- Stride, V., Cranney, L., Scott, A., & Hua, M. (2017). Outdoor Gyms and Older Adults - Acceptability, Enablers and Barriers: a Survey of Park Users. *Health Promotion Journal of Australia: Official Journal of Australian Association of Health Promotion Professionals*, 28(3), 243-246.
- Şimşek, D., Katırcı, H., Akyıldız, M., & Sevil, G. (2011). Açık Alan Egzersiz Parkları ve Kullanıcılarına İlişkin Bir Araştırma. *Spor metre Beden Eğitimi ve Spor Bilimleri Dergisi*, 9(2), 41-48.
- Tucker, P., Irwin, J. D., Gilliland, J., H. M., Larsen, K., & Hess, P. (2009). Environmental Influences on Physical Activity Levels in Youth, Health and Place, 15, 357-363.
- Turkish Environment and Urban Ministry. (2019). *2020-2023 National Smart Cities Strategy and Action Plan*, Ankara.
- Tyrväinen, L., Ojala, A., Korpela, K., Lanki, T., Tsunetsugu, Y., & Kagawa, T. (2014). The Influence of Urban Green Environments on Stress Relief Measures: A Field Experiment. *Journal of Environmental Psychology*, 38, 1-9.
- World Union of Olympic Cities (2016). *Urban Sports: Smart Cities and Sport*, A Smart Cities & Sport Publication.
- Wilson, J. F., & Christensen, K.M. (2012). The Relationship Between Outdoor Recreation and Depression Among Individuals with Disabilities. *Journal of Leisure Research*, 44(4), 486-506.