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Research Article

THE EVALUATION OF KAHRAMANMARAŞ ENGELSİZ YAŞAM PARK WITHIN THE SCOPE OF THE UNIVERSAL STANDARDS GUIDE FOR PERSONS WITH DISABILITIES

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Abstract

Everyone has the right to act independently in life. This is accepted as one of the most important conditions for accessing opportunities and services in social life. According to a report published by the World Health Organization (WHO) in 2011, approximately 15% of the world's population (more than 1 billion people) consists of individuals with disabilities. The universal design approach includes the design of spaces and products that serve all members of society equally. With the acceptance of the concept of universal design, studies for the creation of relevant standards have started. One of these studies is the "Universal Standards for Persons with Disabilities". This study was carried out in order to evaluate the "Engelsiz Yaşam Park" in Kahramanmaraş within the scope of the universal standards guide for persons with disabilities. In this context, the standards under the headings of ramps and stairs, pedestrian ways and sidewalks, parking lots and pedestrian crossings, and open and green areas in the guide and the current situation in the area were evaluated. As a result, it was determined that the current situation in terms of quality and maintenance of ramps and slope conditions, floors, parking lots, urban furniture, and materials used in Engelsiz Yaşam Park does not meet the standards, and recommendations for making the necessary arrangements were made based on the criteria specified in the universal standards guide.

Keywords: Disability, Accessibility, Urban Park, Universal Design

Araştırma Makalesi

KAHRAMANMARAŞ ENGELSİZ YAŞAM PARKI'NIN ENGELLİLER İÇİN EVRENSEL STANDARTLAR KILAVUZU KAPSAMINDA DEĞERLENDİRİLMESİ

Özet

Herkes yaşam içinde bağımsız olarak hareket edebilme hakkına sahiptir. Bu; toplumsal yaşam içindeki olanak ve hizmetlere ulaşabilmek için en önemli koşullardan biri olarak kabul edilmektedir. Dünya Sağlık Örgütü'nün 2011 yılında yayımladığı rapora göre dünya nüfusunun yaklaşık %15'i (1 milyardan fazla insan) engelli bireylerden oluşmaktadır. Evrensel tasarım yaklaşımı, toplumun tüm bireylerine eşit oranda hizmet eden mekân ve ürünlerin tasarımını kapsar. Evrensel tasarım kavramının kabul görmesi ile birlikte konuyla ilgili standartların oluşturulması çalışmaları başlamıştır. Bu çalışmalardan bir tanesi de "Engelliler İçin Evrensel Standartlar Kılavuzu"dur. Bu çalışma Kahramanmaraş'ta bulunan "Engelsiz Yaşam Parkı"nın engelliler için evrensel standartlar kılavuzu kapsamında değerlendirilmesi amacıyla gerçekleştirilmiştir. Bu doğrultuda kılavuzdaki; rampalar ve merdivenler, yaya yolları ve kaldırımlar, otoparklar ve yaya geçitleri, açık ve yeşil alanlar başlıkları kapsamındaki standartlar ile alandaki mevcut durum karşılaştırılarak değerlendirilmiştir. Sonuç olarak, Engelsiz Yaşam Parkı'ndaki mevcut durumun rampalar ve eğim durumları, döşemeler, otoparklar, kent mobilyaları ve kullanılan malzemelerin kalite ve bakımı açısından standartlara uygun olmadığı belirlenmiş ve evrensel standartlar kılavuzunda belirtilen ölçütler esas alınarak gerekli düzenlemelerin yapılması için öneriler geliştirilmiştir.

Anahtar kelimeler: Engellilik, Erişilebilirlik, Kent Parkı, Evrensel Tasarım

1. INTRODUCTION

Disability is defined as the congenital or subsequent loss of physical, mental, spiritual, sensory, or social abilities to varying degrees and difficulty adapting to social life and meeting daily needs (TDK, 2022). When the historical development and change of models for understanding disability are examined, it is accepted that the main problem for individuals with disabilities is "the inability to benefit equally from rights". Today, it is seen that the principle of "equality" has become a top principle in the legal texts of all countries. Therefore, the principles of human rights state that all people are equal, and therefore the conditions for equal enjoyment of their rights should be provided (Menteş et al., 2015).

According to a report published by the World Health Organization (WHO) in 2011, approximately 15% of the world's population (more than 1 billion people) consists of individuals with disabilities (WHO, 2011). When the situation in Turkey is examined, it is stated in the bulletin published by the "Directorate General of Services for Persons with Disabilities and the Elderly" in July 2022 that there are 2,511,950 disabled individuals registered in the national data system. Considering the unregistered disabled individuals, it is stated that there are approximately 9 million disabled individuals in Turkey, which constitutes approximately 13% of the country's population (Directorate General of Services for Persons with Disabilities and the Elderly, 2022). According to 2013 data, there are 31,248 disabled people in Kahramanmaraş, which is the study area (Turkish Statistical Institute, 2022).

Everyone has the right to act independently in life. This is accepted as one of the most important conditions for accessing opportunities and services in social life. Although disabled people have the right to benefit from public areas and move freely in these areas, like all city dwellers, problems in transportation and the physical environment make this situation difficult (Karataş, 1998; Yılmaz & Gökçe, 2014; Öztürk and Yaşar İsmail, 2015; Aygün et al., 2018). All these barriers not only restrict the freedom of movement of persons with disabilities but also hinder their access to work, education, health, and sports (Menteş et al., 2015; Çorbacı et al., 2020). Various studies have been carried out to prevent these problems and to secure the rights of persons with disabilities. Within the scope of the "Convention on the Rights of Persons with Disabilities", which was prepared in order to ensure that persons with disabilities fully and equally benefit from all human rights and freedoms and adopted by the United Nations in 2006, it is ensured that persons with disabilities can live independently, participate effectively in all areas of life and access the physical environment on equal terms with other individuals (Akşit et al., 2018; Akıncı, 2019).

The universal design approach includes the design of spaces and products that serve all members of society equally. This concept was first defined by architect Ronald L. Mace in 1985 as "designing products and the environment to be usable by as many people as possible of all ages and all levels of competence" (D'souza, 2004; Kuter & Çakmak, 2017). With the acceptance of the concept of universal design, studies for the creation of relevant standards have started. One of these studies is the "Universal Standards for Persons with Disabilities". This guide has been prepared by 120 relevant and competent organizations from 65 countries on 6 continents, members of the World Disability Foundation (WDU), as a result of a three-year study. The technical requirements within this document are referenced from regulations and guidelines from jurisdictions who design and implement accessiblity as minimum best practices for buildings, roads, transportation and other indoor and outdoor facilities, including schools, housing, medical facilities and workplaces (WDU, 2022).

This study was carried out in order to evaluate the "Engelsiz Yaşam Park" in Kahramanmaraş within the scope of the universal standards guide for persons with disabilities. In this context, the standards under the headings of pedestrian ways and sidewalks, ramps and stairs, pedestrian crossings and parking lots, open and green areas in the guide were compared, and the current situation in the area was evaluated.

2. MATERIALS AND METHODS

This study was carried out in the Engelsiz Yaşam Park in the Dulkadiroğlu district of Kahramanmaraş. The reason the Engelsiz Yaşam Park was chosen is that it is the only park in the district established with the concept of accessibility. The park has an area of 2945 m^2 and is located in the Yavuz Selim neighborhood. The park was established on a flat topography without slopes. The location of the park is given in Figure 1.

Figure 1. The location of the park (Google Earth, 2022)

In this study, "the universal design standards guide for persons with disabilities" was used. In the study, a literature review was made. Then, the accessible environmental standards in the " the universal design standards guide for persons with disabilities " were put into table form, and the fieldwork was started. The fieldwork was carried out in the Engelsiz Yaşam Park Park in 2022, and the compliance of the land use with accessible environmental standards was checked. In addition, photographs were taken from the points that were described as suitable and unsuitable in the area. An example of the created form is given in Table 1.

Table 1. Sample form created for accessible environmental standards in the "the universal design standards guide for persons with disabilities"

Accessible Environmental Standards for Walkways and Pavements			
Standards	**Accessible environmental standards and measures**		**Space usage status of the workspace**
Pavement Width	Standard measure	150-200 cm.	
	At the bus stops	≥ 300 cm.	
	In front of the shops	≥ 350 cm.	
Pavement Slope	Slope	≤ 2%	
Pavement Surface/Paving	Surface	Smooth and non-slip	
	Width of Directional Signs	60 cm.	
	Properties of Directional Signs	Simple, safe, unobstructed, and contrasting color	
	Border Height	≤ 15 cm.	
Drainage on the Pavement	Used materials	Gutter and manhole	
	Slope	2 - 2,5%	
Trees on the Pavement and Urban Furniture	Trees	It should not be an obstacle on the walking paths.	
		Under the tree, the soil surface should be 0.75-1.20 m. wide.	
	Urban Furniture	They should not interfere with walking paths and be in sufficient numbers.	
Safety on the Pavement	Security units	No vehicle	
		There should be barricades in the necessary areas.	
		There should be no obstacles on the walking paths.	

3. RESULTS AND DISCUSSION

The findings obtained from the field studies carried out in Engelsiz Yaşam Park, which is the study area, are given below.

Walkways and Pavements

Sidewalk widths are usually 150 cm. This width decreases below 90 cm in front of the stops and shops in the vicinity. The overall pavement slope is mostly appropriate, although rough surfaces can cause the slope to deteriorate. There is no water gutter or drainage system

around the sidewalk. However, there are gratings for drainage at some points. There are no tactile surfaces or guide marks on sidewalks and walkways. The border heights of the study area vary between 10 and 15 centimeters. In some areas of the walking paths, there are no obstacles such as trees, urban furniture, or sign boards. It has been determined that the number of urban pieces of furniture is sufficient according to the universal design standards guide, but it does not meet standards such as entrance-exit or height requirements for the disabled and is not suitable for use. Images of pedestrian paths and sidewalks from different points in the study area are given in Figure 2. There are obstacles such as sign boards, urban furniture and trash cans that will create barriers in terms of safety on the pedestrian sidewalk and walking paths (Table 2).

Figure 2. Walkways and pavements

Table 2. Accessible Environmental Standards for Walkways and Pavements

Walkways and Pavements			
Standards	**Accessible environmental standards and measures**		**Land use of the workspace**
Width of Walkways	Standard measure	150-200 cm.	150 cm.
	At the bus stops	≥ 300 cm.	≤ 90 cm.
	In front of the shops	≥ 350 cm.	≤ 90 cm.
Slope of Walkways	Slope	≤ 2%	≤ 2%
Surface/Cover of the Walkways	Surface	Smooth and non-slip	Rough and non-slip surface
	Width of Directional Signs	60 cm.	There are no Directional Signs
	Properties of Directional Signs	Simple, safe, unobstructed, and contrasting color	There are no Directional Signs
	Border Height	≤15 cm.	10-20 cm.
Drainage of the Walkways	Used materials	Gutter and manhole	Inadequate
	Slope	2 - 2,5%	2 – 2,5%
Trees, Urban Furniture on the Walkways	Trees	It should not be an obstacle on the walking paths.	There are obstacles
		Under the tree, the soil surface should be 0.75-1.20 m. wide.	Suitable
	Urban Furniture	They should not interfere with walking paths and be in sufficient numbers.	The number is adequate, but not accessible to the disabled.
Safety on the Walkways	Security units	No vehicle	Suitable
		There should be barricades in the necessary areas.	Not Suitable
		There should be no obstacles on the walking paths.	Not Suitable

Ramps and Stairs

It has been observed that the widths of the disabled ramps installed in the study area are suitable according to the universal design standards guide. The points where the ramps are located make it difficult to provide circulation. It has been seen that the ramp surface floors are generally in accordance with the standards, but different surface textures were not created at the start and end points. There is no handrail or protective border around the ramp. Ramps and stairs from different points of the study area are given in Figure 3. Although riser heights are suitable for the stairs in the study area, it has been determined that they are not suitable in terms of surface flooring, tactile surface use, and landing use (Table 3).

Figure 3. Ramps and stairs

Table 3. Accessible Environmental Standards for Ramps and Stairs

Ramps and Stairs			
Standards	**Accessible environmental standards and measures**		**Land use of the workspace**
Ramp Size and Slope	Width	0.90-1.8 m.	Suitable
	Slope	6-8%	Suitable
	Stairhead	2.5 m. every 10 m.	There is no stairhead
Surfaces of the Ramps	Surface properties	It should be hard, stable, and non-slip.	Suitable
		Ramp start and end points must be of different textures.	Not Suitable
Safety and comfort on ramps	Handrails	There should be handrails on both sides and should be 45 cm. longer than the ramp length.	Not Suitable
	Benches	There should be one bench every 100 m.	Suitable
	Border stone height	5 cm	Not Suitable
Size of the Stair	Ridge height (max 15cm.)	2 x Ridge height + Step width = 63 cm.	Suitable (14 cm.)
Surfaces of the Stairways	Surface properties	It should be rough and non-slip, with different colored steps and ridges, and it should be 2 cm. wide with a non-slip strip.	Not Suitable
		Directional Signs	There are no directional signs
	Stairhead Measures	1.2-1.8 m.	Not Suitable

Crosswalks and Parking Lots

According to the findings, it was seen that no pedestrian crossing was established on the main and side roads in the immediate vicinity of the park (Figure 4). There is a parking lot for 40 cars on the side of the road. Two of them are reserved for disabled parking spaces. There is a sign in the parking area reserved for disabled individuals (Table 4).

Figure 4. The immediate vicinity of the park

Table 4. Accessible Environmental Standards for Crosswalks and Parking Lots

Crosswalks and Parking Lots			
Standards	**Accessible environmental standards and measures**		**Land use of the workspace**
Crosswalks	Crosswalks establishment principles	There should be ramps at the start and end points of the crosswalk.	Not suitable
		Ramp, 0.9–4.8 m. width, and less than 8% slope	Not suitable
		Must be within sight for drivers.	Not suitable
		Street furniture, etc. in the crosswalk area. There should be no obstacles.	Not suitable
		There must be directional sing	Not suitable
		Lighting should be sufficient.	Not suitable
		Sings and lines should be clearly.	Not suitable
		The covering material must be non-slip and resistant to external influences.	Not suitable
		Pedestrian underpasses and overpasses should have elevators.	Not suitable
Parking lots	Parking lots establishment principles	3.60 m. (Width)	Suitable
		5-6 m. (Length)	Suitable
		Disabled parking (1 parking lot for every 50 vehicles)	Suitable
		Keeping warning and guiding signs for vehicle parking spaces	Suitable
		Vehicle parking lot location	Suitable

Open and Green Areas

It has been observed that the slopes of pedestrian and walking paths in the study area are in accordance with the principles of open and green space facilities. The width of the walking paths is less than 1 meter at some points. The longitudinal and transverse slopes of the side roads are suitable. The number of seating units used in the area was sufficient, but it was seen that it was not suitable for diversity. Materials different from the other flooring in the area were not used in the surface upholstery of the urban furniture. At some points in the area, urban furniture is an obstacle to walking paths. It was determined that the corners of the urban furniture were not rounded in order to prevent injury. There is no empty platform for the disabled chair next to the seating units. The number of lighting units in the area is sufficient. Images from different points in the area are given in Figure 5. The toilet in the area is not operational. There is no telephone booth for emergencies in the area (Table 5).

Figure 5. Urban furniture and children's playgrounds

Table 5. Accessible Environmental Standards for open and green areas

Open and green areas			
Standards	**Accessible environmental standards and measures**		**Land use of the workspace**
Main and pathways in Open and Green Areas	Standards of the Main and pathways in Open and Green Areas	The lighting profile should be 1.5 m. wide and 2.3 m. tall.	Suitable
		Way widths: 2-2.5 m.	Not Suitable
		Longitudinal slope of the ways: ≤ 4% Transverse slope of the ways: ≤ 2%	Suitable
		There should be a seating unit every 100 meters.	Suitable
		Surface floors should be non-slip.	Suitable
		Floor coverings should be direcivity.	Not Suitable
Urban Furnitures	Standards of the Urban Furnitures	Urban furniture should not interfere with walkways.	Not Suitable
		There should be contrasting colored signs.	Not Suitable
		Urban furniture should have rounded corners.	Not Suitable
		Surface floors should be different from other areas.	Not Suitable
		Different kinds of furniture in contrasting colors should be used.	Not Suitable
		There should be a 1.2-meter-wide empty landing next to the benches.	Not Suitable
		There should be a toilet and a telephone booth.	Toilet closed, There is no phone booth.
		The seat height of the benches from the floor should be 45 cm, and the backrest height should be 70 cm.	Not Suitable
		The trash cans should be 40 cm away from the border and 90–120 cm high.	Suitable
		Fountains should be 90 cm high.	Suitable

In this study, Engelsiz Yaşam Park has been evaluated within the scope of the universal standards guide for persons with disabilities. Although the pedestrian ways and sidewalks in the area are suitable at many points in terms of width, slope, and surface covering, according to the guide, there are narrowings, urban furniture, and sign boards that will constitute obstacles for transitions. Abrasions and collapses have occurred on the pavement slabs over time, and it has been observed that this situation affects pedestrian circulation. Curbstone heights do not comply with the standards in the guide. It has been determined that the curb heights are too high. It is thought that the reason for the high curb height is to prevent

vehicles from parking on the pavement. However, the curb heights increase the ramp slopes and make it difficult to enter and exit the area.

There is a sufficient number of urban pieces of furniture in the working area, as specified in the guide. However, urban furniture is not suitable for disabled use. There is no section reserved for wheelchairs next to the urban furniture. For this reason, it is thought that disabled people may experience great difficulties in using these areas.

Ramps play an important role in accessibility. There is no need for a ramp for general circulation in the park, which is established on a flat area. There are ramps at the entrances and exits of the working area and at the edges of the parking lot. It has been observed that some of the ramps are not compatible with the area's circulation. For this reason, it is very difficult for the disabled to use these ramps. There are no handrails on the disabled ramps. There are collapses on the ramp surfaces and deterioration of the floors. For this reason, although there are ramps in the area that can provide circulation, it does not seem possible for the disabled to use these ramps easily in terms of quality.

It has been observed that stairs are used at the points needed in the study area. Stair widths and riser heights comply with guideline standards. However, due to the collapse of the floors used on the stairs, indentations and protrusions were formed on the stairs. This situation threatens the safety of using stairs. In addition, the tactile surface for the visually impaired, which is not used anywhere in the area, is not used around the stairs. It is thought that the park is not suitable for use in terms of accessibility for the visually impaired. There are no audio or written marker units in the area. This makes it difficult to use the park for those who have visual or hearing difficulties.

There is one main road and three side roads around the study area. However, it has been determined that there is no pedestrian crossing on these roads. The absence of pedestrian crossings in the park, which are mainly used by children, is a safety problem. A parking lot for 40 vehicles has been established around the area, two of which are disabled parking lots. It has been seen that the parking lots are suitable in terms of proximity to the area, presence of signs, ramp status, and usage.

There is one fountain and one toilet for users in the area. However, the toilets are closed to use, and it has been observed that the toilets remain an idle building. This situation is considered to be a problem for users.

4. CONCLUSIONS AND RECOMMENDATIONS

Urban open and green areas, which have an important role in making the urban environment more livable, are also socialization areas. Urban open and green areas need to be designed in an accessible way so that they can serve all members of society equally. The fact that the disabled population has an important place in the world and that its numbers are gradually increasing reveals the importance of complying with the design standards for the disabled in all public areas, including urban open and green areas.

In a study carried out in Turkey in 2010, the problems and expectations of the disabled were investigated. The research participants' opinions on whether the physical environmental arrangements in their homes are suitable for the use of disabled people were collected. While

43.3% of the participants stated that parks and green areas are not suitable for use, 22.3% stated that they are suitable for use, and 34.4% did not express their views on the subject (Ministry of Family and Social Services, 2010). According to these findings, Turkey's urban open and green spaces are not accessible to the disabled. Within the scope of the study, the conformity of Kahramanmaraş Engelsiz Yaşam Park, which was established with the concept of accessibility, to the criteria specified in the universal standards guide for persons with disabilities was examined. As a result of this research, it has been determined that pedestrian ways and sidewalks, ramps and stairs, pedestrian crossings, parking lots, and open and green area use are not in compliance with these standards to a large extent. This situation coincides with the situation in Turkey in general.

The collaboration of different professional disciplines (landscape architects, architects, urban and regional planners, etc.) as well as the contributions of non-governmental organizations and volunteers is also very important in making public areas suitable for design standards for persons with disabilities.

In addition to the implementation of the newly designed urban open and green areas in accordance with the universal design standards, it is necessary to evaluate whether the existing areas comply with the design standards and to carry out improvement works in the areas deemed necessary. This study guides the evaluation of the compliance of an existing urban open green area with universal design standards.

AUTHOR CONTRIBUTIONS

Mahmut Tuğluer: Land inventory study, analysis and evaluation of data, evaluation of findings, and a discussion section. **Erdi Ekren**: Literature research, land inventory study, evaluation of the results, and recommendations section

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CONFLICT OF INTEREST STATEMENT

The authors declare no conflict of interest

ETHICS COMMITTEE APPROVAL

This study does not require any ethics committee approval.

REFERENCES

Akıncı, H. (2019). Ankara Dikmen Vadisi Parkı, Göksü Parkı ve Can Yücel Parkı Örneklerinde Parkların Erişilebilirlik Açısından İrdelenmesi, Yüksek Lisans Tezi, Ankara Üniversitesi Fen Bilimleri Enstitüsü, Ankara.

Akşit, M.A., Kuşku, M., Oktay, G. & Şaylıgil, Ö. (2018). Engellilerin haklarına ilişkin sözleşmenin sorgulanması. Türk Dünyası Uygulama ve Araştırma Merkezi Yenidoğan Dergisi, 2:261-302.

Aygün, E., Korkut, A. & Kiper, T. (2018). Engelli bireyler için kentsel dış mekanlara erişilebilirliğin incelenmesi: Tekirdağ örneği. Artium, 2:20-32.

Çorbacı, Ö.L., Turna, T. & Ercan Oğuztürk, G. (2020). Kamusal alanların peyzaj düzenlemesi açısından erişilebilirliğinin incelenmesi; Dicle üniversitesi kampüsü örneği, Düzce Üniversitesi Ormancılık Dergisi, 16(1): 105-127.

D'souza, N. (2004). Is universal design a critical theory?., In: Keates, S., Clarkson, J., Langdon, P., Robinson, P. (Eds), Designing a More Inclusive World (p.3-9). Publisher Springer-Verlag, London.

Directorate General of Services for Persons with Disabilities and the Elderly (2022). https://www.aile.gov.tr/eyhgm/sayfalar/ istatistikler/engelli-ve-yasli-istatistik-bulteni/ Access Date: 17.02.2022.

Karataş, K. (1998). Özürlüler kentlerde özgürce yaşamak istiyorlar. Ufkun Ötesi Aylık Dergisi, 2(4):10-13.

Kuter, N. & Çakmak, M. (2017). Kamusal dış mekanlarda engelliler için tasarım: Ankara, Seğmenler Parkı örneği. Anadolu Orman Araştırmaları Dergisi, 3(2):93-110.

Menteş, İ., Belir, Ö., & Yenilmez-Arpa, N. (2015). Korunan Alanlarda (Milli Parklarda) Engelli Erişimi Örneği Engelli Dostu Milli Park: Küre Dağları Projesi.

Ministry of Family and Social Services (2010). https://www.aile.gov.tr/media/5602/ozurlulerin-sorun-ve-beklentileri-arastirmasi-2010.pdf Access Date: 10.04.2022.

Öztürk, S. & Yaşar İsmail, T.S. (2015). Kastamonu kent merkezinde fiziksel engelli hareketliliği. Süleyman Demirel Üniversitesi, Mühendislik Bilimleri ve Tasarım Dergisi, 3(3):511-516.

TDK (2022). https://sozluk.gov.tr/ Access Date: 21.03.2022.

Turkish Statistical Institute (2022). https://www.tuik.gov.tr/ Access Date: 19.02.2022.

WDU (2022). https://worlddisabilityunion.com/images/contents//FILEdabfc04d877ef5e.pdf Access Date: 30.03.2022.

WHO (2011). https://www.who.int/publications/i/item/9789241564182 Access Date: 27.03.2022.

Yılmaz, T. & Gökçe, D. (2014). Parkların engelli bireylerin serbest dolaşımı açısından erişilebilirliğinin irdelenmesi, Antalya Atatürk Kültür Parkı örneği. Akdeniz Üniversitesi Ziraat Fakültesi Dergisi, 27(1):21-30.