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Research Article

RISKS IN CHILDREN'S PLAYGROUNDS: A CASE STUDY OF BUCA, IZMIR

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ABSTRACT. The game is the first activity that people use to learn the life and the nature. The game plays an important role in the spiritual and physical development of the child. Children's playgrounds are the places where children can perform physical, spiritual and social activities. In terms of child health and safety, the risks of these places should be addressed primarily in the landscape design. This study was conduct to emphasise the factors that could pose a risk in children's playgrounds of some parks in the Buca District, İzmir. Partial damages were determined in the surface materials and playground equipment in all children's playgrounds during the investigations. According to the analysis; in 83.3% of the children's playgrounds, maintenance-repair should be required. In 50% of the children's playgrounds, vandalism, unsuitable surface material and design errors were detected. In the majority of the fields, suitable planting and sufficient cleaning were observed.

Keywords: *children's playground, safety, risk, maintenance, planting, ornamental plants*

INTRODUCTION

Open green spaces are areas where people feel in their own nature, reduce their stress, and do different activities such as resting, walking, jogging, and sports in intense urban life [1]. They have the opportunity to have a good time and socialize together, meeting in these areas. Especially families with children can play games and activities in nature in the open green spaces. Especially families with children can play games and do activities in touch with nature in these spaces. Children's playgrounds with special toys and types of equipment located in the open green spaces are environments where children play safely and freely [2]. Children develop their imagination by playing games in these places and experience life through games. They discover and learn about themselves, their surroundings, and the world through games [3]. Games contribute to a child's physical and mental development. Moreover, games are activities in which the child communicates and socializes with individuals [4].

The child should be provided with a safe, comfortable and suitable environment during these activities. Surface materials, toys, equipment and plants that may pose a risk to children should not be preferred in the design of children's playgrounds. Incorrect material choice, maintenance and repair errors in children's playgrounds can cause injuries to children. U.S. Consumer Product Safety Commission reported that 3014 accidents occurred in children's playgrounds between 2009 and 2014, 63% of these accidents were caused by equipment, 17% by falling, 9% by other, 4% by accident, 4% by collision and 4% by fixed elements [5]. The majority of these accidents are preventable

with the selection of quality and correct materials in accordance with the standards [6]. Surfacing material is one of the security risks in these areas [7]. These risks can be reduced by using suitable rubber materials instead of concrete, paving stones, asphalt, stony sand that may cause injury to children in the surface plating. Preferring quality equipment suitable for environmental conditions and performing maintenance and repair activities more frequently can reduce security risks. The use of wrong plant species in the design is another safety risk in children's playgrounds. There should not be plants with pointed, sharp leaves and needles around children's playgrounds. In addition, plant species with allergenic properties, poisonous bark, leaves, flowers and fruits should not be preferred [8]. Users can sometimes cause physical damage to the surface material, toys, equipment and plants in children's playgrounds [9]. These damages cause the equipment to break down or cause security vulnerabilities. These critical points that may cause danger and safety problems in these areas must be monitored and intervened in a timely manner.

With this study, it is aimed to reveal the existing risks by evaluating the factors that may pose a risk in children's playgrounds in the example of Buca District, Izmir.

MATERIAL AND METHOD

This study was carried out in Hasanağa Bahçesi, Fırat Yılmaz Çakıroğlu Park, Yörük Ali Efe Park, Şirinyer Park, Neşet Ertaş Park and Bahçekapı Park located in Buca District of İzmir province (Fig. 1). The selection of the parks was determined according to the criteria of the park usage, size, transportation and location. After the study areas being determined, the standards of the children's playgrounds were evaluated by literature review. In line with these standards on-site, data were collected on the condition of equipment, maintenance and repair, surface plating, cleaning, design, vegetation and vandalism. At the same time, the photographs of the areas were taken and the characteristics and risk situations of the areas were revealed in line with the data obtained.

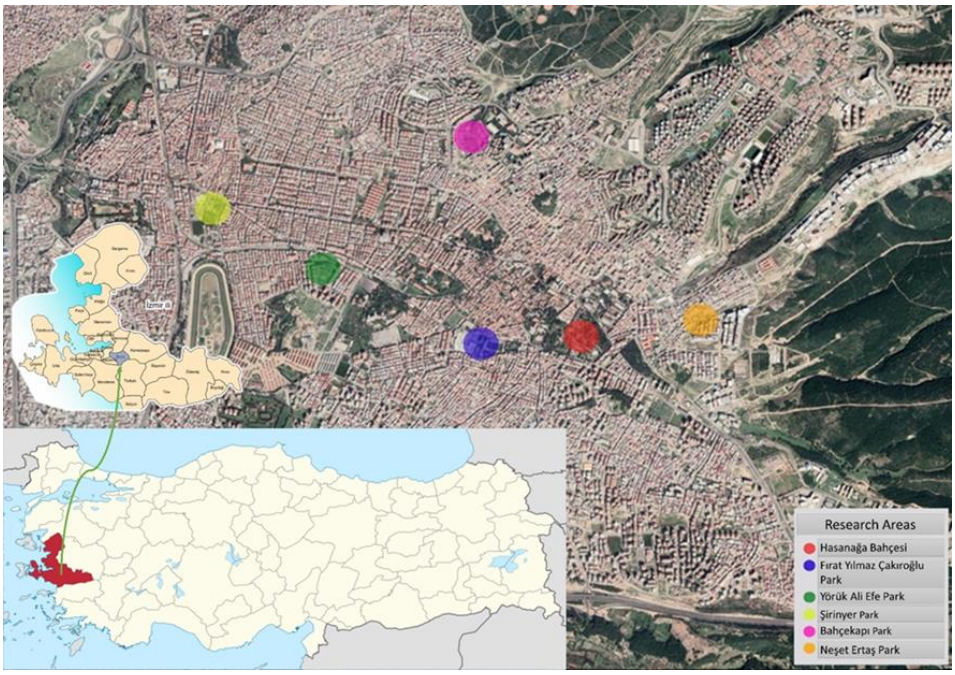

Fig. 1. *Research areas.*

RESULTS

Fırat Yılmaz Çakıroğlu Park is located on a very lively main street. There is no restrictions or obstacles such as walls, fences between the main street and the area. It was observed that the slide railing in the playground was removed from the place where it was mounted, it was not repaired, writings were written on the playground equipment and the equipment was damaged (Fig. 2).

Fig. 2. *Fırat Yılmaz Çakıroğlu Park (Original, 2021).*

Hasanağa Bahçesi is one of the most popular open green spaces that appeal to many users. Multiple playgrounds in the area allow children to freely choose between toys and play equipment. Thanks to this diversity, children can play in the area without getting bored. However, it was determined that some toys and playground equipment in the area were broken and damaged, and there were occasional tears and gaps in the rubber flooring (Fig. 3).

Fig. 3. *Hasanağa Bahçesi (Original, 2021).*

It was determined that the slide and stair railing space was kept too wide for the child's dimensions in children's playground of the Yörük Ali Efe Park. It was also observed that another wooden railing in the playground was removed and there were nails on it still (Fig. 4). Due to these risks, children's families accompany children during the game for protection purposes.

Fig. 4. *Yörük Ali Efe Park (Original, 2021).*

Şirinyer Park is surrounded by coniferous trees and receives little sunlight. Most of the park equipment was damaged, the maintenance and the cleaning of the area is insufficient. In addition, major damages were detected on the surface material of the park. The broken pieces of the equipments and the damaged surface material pose a risk to children (Fig. 5).

Fig. 5. *Şirinyer Park (Original, 2021).*

The ground of Neşet Ertaş Park is covered with sand. It was observed that pits had formed on the ground with occasional collapses. It was foreseen that the formed pits might cause children to lose their balance, fall and injuries during the game. In addition, some abrasions were detected on the climbing ropes in the playground. Maintenance should be done as this situation may cause accidents in the future. One of the two slides in the area could not be used safely due to the accumulation of water in the exit part and the other due to fractures in the same place (Fig. 6).

Fig. 6. *Neşet Ertaş Park (Original, 2021).*

The surface material of the playground in Bahcekapı Park was rubber. Damage to the handle of the game equipment and inscriptions written with spray paint indicated vandalism. No security problems was identified in Bahçekapı Park. Among the parks examined, the only playground found to be risk-free (Fig. 7).

Fig. 7. *Bahçekapı Park (Original, 2021).*

DISCUSSION AND CONCLUSION

Safety criteria should be prioritized in the planning and design stage of children's playgrounds so that children can play and socialize in a safe environment. The type of surface material used under the children's playground equipment is one of the most important safety points. Materials such as stone pavement, concrete, coarse stone sand, asphalt should not be used on the playground floor. Instead of these materials, shock absorbing, sufficiently soft, healthy materials such as rubber should be preferred. However, the use of granules obtained from car tires in the production of some rubber materials may contain hazards in terms of child health [10]. It was determined that suitable surfacing material was used in 50% of the children's playgrounds examined in this study, but this material was partially damaged. Partially damaged equipment was determined in all of the study areas (Fig. 8). It was determined that 83.3% of the playground equipment required maintenance and repair. All damage and repair requirements changed in the area according to the material quality and material preference used. For this reason, material selection should be made by considering environmental conditions, usage time and density.

Cleaning was found to be sufficient in most of the children's playgrounds in the study area. However, it was determined that the playground equipment was damaged. Vandalism was detected in 50% of children's playgrounds. Incorrect plant use was determined at the rate of 16.7%. Toilet, sink and water needs of children should be located near playgrounds, and environmental cleaning and maintenance should be done on time by local governments [11].

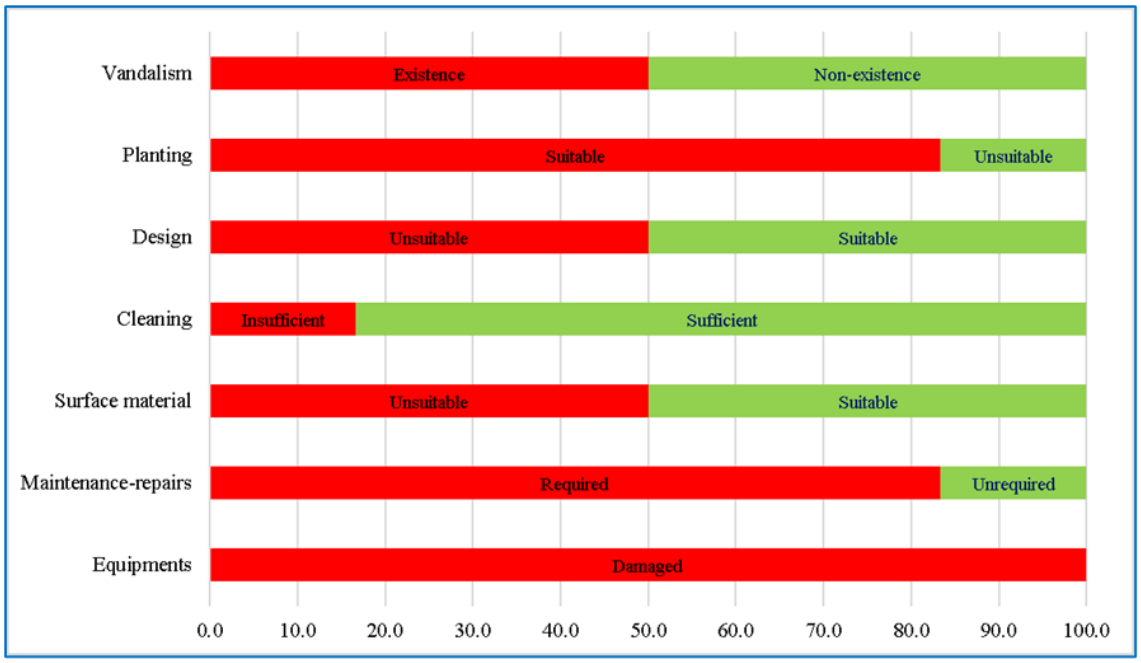

Fig. 8. *General situation of children's playgrounds.*

REFERENCES

[1] Ayala-Azcárraga, C., Diaz, D., Zambrano, L. (2019): Characteristics of Urban Parks and Their Relation to User Well-Being. Landscape and Urban Planning, 189: 27-35.

[2] Ender, E. (2017): Aesthetic Achievement in Children's Playgrounds. Journal of Bartin Faculty of Forestry, 19(1): 41-50.

[3] Köklü, A.C., Eraslan, Ş. (2020): Evaluation of Playgrounds with Ecological Approach in Urban Areas. International Journal of Eastern Anatolia Science Engineering and Design, 2(1): 33-47.

[4] Pouya, S., Savaş, S. (2020): Barrier-Free Children Play Area. GSI Journals Serie A: Advancements in Tourism Recreation and Sports Sciences, 3(1): 17-34.

[5] Anonymous, (2016): Injuries and Investigated Deaths Associated with Playground Equipment 2009-2014. U.S. Consumer Product Safety Commission (CPSC): August 2016, Maryland, USA, 25 pages.

[6] Khajenasiri, F., Alami, A., Samaei, S.E., Borhani Jebeli, M., Mehri, A., Hamamizadeh, E. (2020): Invetigating the General Safety of Playground Equipment and its Compliance with National Standards. Journal of Research & Health, 10(1): 35-42.

[7] Aşık, Y., Yücedağ, C., Kaya, L.G. (2021): Evaluation of Public Playgrounds Safety: The Case Study of Burdur City Çenter, Turkey. Düzce University Journal of Forestry (DÜOD), 17(1): 142-158.

[8] Kösa, S. (2020): The Evaluation of Some Children's Playgrounds in terms of Plant Materials and Planting Design in Antalya. Düzce University Journal of Forestry, 16(2): 105-122.

[9] Aslan, H. (2018): Determination of Landscape Design Criteria in Reducing Vandalism. Journal of Vocational Science (JVS), 7(2): 74-82.

[10] Yönez, E. (2017): Children's playground design and safety. Master Thesis, Istanbul Technical University Graduate School of Natural and Applied Sciences, Department of Civil Engineering, İstanbul, 155 s.

[11] Memiş, L., Gülcan, S. (2020): Children and Playgrounds in the Urban Area: A Study in the Case of Giresun Central District. OPUS International Journal of Society Researches, 16 (27): 633-671.