Full Length Research Paper

Barriers to playground use for children with disabilities: A case from Ankara, Turkey

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Accepted 15 February, 2010

The aim of this paper is to evaluate the playgrounds in terms of the barriers causing restricted use by disabled children. The investigation is carried out through a questionnaire and site surveys in the district of Keçiören-Ankara. The questionnaire was completed by parents of children with disabilities relating to physical and as well as social barriers parents and children are facing using the playgrounds. It was applied to 667 disabled child parents who are residents of the district. The site survey was carried out in 355 playgrounds in the districts. Site surveys are done by the research group by means of photographs and a checklist completed for each playground. Qualitative data obtained from site surveys converted to quantitative data by means of the criteria set by the research group. These two groups of data then combined to determine the barriers. All the statistical analyses for the surveys have been carried out by using SPSS 15.0 (SPSSFW, SPSS Inc., Chicago, IL, USA) and StatsDirect (whopharacoeco-nomics, Ver 2.2.0, USA) programme and frequency distribution have been worked out. When compiling the answers and during the site surveys it appeared that not only physical but also social barriers restrict the disabled children to use the playgrounds to which social barriers will not be evaluated in the context of this paper. The results show that playgrounds are not usable for the children with disabilities. The inadequate planning of playgrounds to the needs of disabled children and lack of awareness of municipalities and planners constitutes a very important barrier. The barrier can only be removed by rising awareness and cooperation of planners and municipalities with the disabled groups.

Key words: Ankara, playground, disability, children.

INTRODUCTION

Playgrounds are important outdoor spaces where children play during their childhood. These spaces should be accessible and carefully planned to meet the needs of all children; to play, spend their free time and reinforce their development.

According to United Nations convention on the rights of a child 1990, play is a central feature of children’s everyday life. The convention states the right of the child to rest and leisure, to engage in play and recreational activities appropriate to the age (Anonymous, 1990). Play has long been known to contribute to the cognitive, social, and emotional development of all children (Bundy et al., 2008). Play is a key element of learning. Children learn social norms and values through play with other children. Development of many skills is completed by means of play during childhood period. The research done by Frost (1997) discusses the importance of play in child development and aspects which play promotes. According to Frost (1997), children learn through play by interaction with objects and socialization with peers, especially with more mature peers, and with supportive

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adults.

Referring to the research done by Betsy (2001), Prellwitz and Skår (2007) state that, "it is a domain that is less parent-dominated than the indoor environment, an environment to explore, a source of novelty, and most of all, a venue for interaction with peers". Interaction with the peers is as important as performing physical activities at a playground. Similar to this, Brunnberg (2005) indicates, "in the process of interacting with and relating to one another, children explore the social meaning of norms and develop their social and communicative abilities", referring to the studies conducted by several researchers (Frønes, 1994, 1995, Jansson, 1996, Evaldson and Corsaro, 1998). The outdoor environment has important influences on peer interactions among children with and without disabilities and influence the type and level of play that occurs among them (Hestenes and Carroll, 2000). In this respect, playgrounds should be just as important for children with disabilities. The literature show that landscape architects, architects,
engineers, sports scientist and occupational therapists studied various aspects of playgrounds and disabled children. The topic has been reviewed in wide range under the themes of accessibility, usability, safety concerns, and playground equipment design, child’s ability to use playground, play behavior, social interaction and inclusiveness (Kienitz, 1996; Herrington and Studtmann, 1998; Erwin and Schreiber, 1999; Vedeler, 2004; Wooley et al., 2006; Prellwitz and Skär, 2007; Bundy et al., 2008). While planners and architects focus on physical aspects of playgrounds, the other researchers focus mainly on social aspects of the topic. The majority of existing literature focuses on improving the physical space by the design or equipment of the playground for children with disabilities. There are quite a few studies combining two aspects in one framework.

Doctoroff (2001) proposes some adaptations of the physical environment may be necessary to enable children with disabilities to participate fully in play. In this paper the author concludes that the creation of high-quality inclusive play environments is based on the premise that the play of all young children must be supported. Allen and Schwartz (1996) point out that, environments which allow children with disabilities to “be included easily and naturally, convey a powerful message about human values: all types of children can play together and have fun.” Herrington and Studtmann (1998) address the issue from landscape architecture point of view. The research focuses on how natural elements intervening in typical equipment-based play yards can influence child development. The authors emphasize the importance of considering physical development and as well as social, emotional, and cognitive development of the child. Prellwitz and Skär (2007) examine different aspects of playground accessibility and usability for children with disabilities and concluded that playgrounds are not an accessible or usable environment for many children with disabilities in Sweden. In this study it is also indicated that there seems to be lack of awareness regarding children’s rights in society and legislation that governs playgrounds. The article by Prellwitz and Skär (2007) discuss how children with different abilities use playgrounds to engage in play and interact socially with their peers. The article used interviews with children who are with and without disabilities. The results also indicate that playgrounds do not fully support play activities for children with disabilities and they are not accessible and usable for all. So, for children with disabilities, playgrounds had limited accessibility, usability and did not support interaction with peers. Prellwitz and Tamm (1999) conducted a research to explore the attitudes to accessibility problems in playgrounds among two groups of key persons: “creators” and “users of playgrounds”. The study was carried out by means of a semi-structured interview. One of the key findings was children with restricted mobility have been excluded from environments and the playgrounds lacked accessibility seems to have been a surprise to those who create these environments. Barbour (1999) considered the environment when evaluating playground design when she conducted her qualitative case study about children's level of physical competence. Not only did Barbour compare play behavior of children with different physical abilities, she compared those abilities across two different playground designs. Several researches are also done in school playgrounds. The research done by Wooley et al. (2006) investigates the inclusion of disabled children in primary school playgrounds. The inclusion of disabled children is discussed with respect to a series of social and organizational issues and the good practice identified relating to these issues. The social issues include the relationships the disabled children have with their peers and with the staff. All the aspects were considered as important for the inclusion of disabled children in school playgrounds. Bundy et al. (2008) address the issue by examining the impact of playfulness of children. The findings have clear implications for children with disabilities.

Both international and national policies, legal arrangements and conventions, advocate children’s rights in society. Accessibility of physical environments to everyone has been subject to many documents. In the Convention on the Rights of the Child launched in 1989, article 23 states that a child with disabilities shall be ensured access to recreational opportunities in a manner conducive to the child’s achieving the fullest possible social integration and individual development, including his or her cultural and spiritual development (Anonymous, 1990). The Turkish Constitution covers the educational, social security, labor and health rights of citizens with a disability. There are four articles in the Constitution concerning the disabled. Disabled citizens have been specified in the article for “Social Services and Protection of the Environment” stating “Everyone has the right to live in a healthy and balanced environment.” (Turkish Constitution, 1995, Article 56, Paragraph 1) (Anonymous, 1995). Turkish Disability Act, (2005) with its article of 44 and provisional article of 2, states that, the existing social buildings of the public institutions and organizations, all existing road, pavement, pedestrian crossing, open and green areas, sporting areas and similar social and cultural infrastructure areas and all kinds of structures built by the natural and legal persons serving to public shall be brought to suitable condition for the accessibility of the disabled people within seven years after the date of effect of this Law. According to its Provisional Article 3, Grand Metropolitan Municipalities and municipalities take the necessary measure to make sure that the mass transport services in the city provided or controlled by them shall be brought to suitable condition for the accessibility of the disabled people within seven years after the date of effect of this Law. In addition, Turkish
Disability Act, with its article of 19 and the article 42 of the Condominium Law no 634 state that premises that persons with disabilities are living shall be ameliorated in order to ensure accessibility of persons with disabilities to physical environment (Anonymous, 2005). Despite these laws, legal arrangements and conventions, research indicate that physical environments and as well as playgrounds accessibility and usability has not been successfully implemented. There are yet many things to be done to remove the barriers for disabled persons.

In many respects, to meet the needs of the child and provision of appropriate space and materials to play is extremely important for child development. This also should be considered as a child right. Nevertheless studies have identified barriers in the physical environment causing restricted participation in play activities for children with disabilities. According to Prellwitz et al. (2001) disability occurs as a consequence of the fact that society contains a series of disabling barriers which exclude those with a disability from everyday activities. Such barriers can be physical obstacles of different kinds or others that exclude disabled persons from daily activities. This can also apply to social barriers which are the attitudes raised by society without disabilities regarding individuals with disabilities. In World Health Organization’s (WHO) international classification system, ICIDH-2 states that inaccessible environments, both physical and social, can have a disabling effect, and that persons with disabilities should have a right to participate in community life (Anonymous, 2001). This article is a part of a research which is granted by TUBITAK (The Scientific and Technological research council of Turkey) aiming to determine physical and social barriers that exclude children with disabilities to use the playgrounds discussing these barriers that can exist to inclusive play (Talay et al., 2008). In this article we exclude the evaluations done for determining social barriers and we only address the physical barriers which create obstacles in using the playgrounds by children with disabilities. The research has been conducted by means of site survey and interviews in order to combine both point of views of the aspect which is mainly expert and user. Within the scope of this study, in the evaluation of determining the barriers in the playgrounds via control lists, only children with restricted mobility has taken into account.

MATERIALS AND METHODS

This study has been carried out in Turkey, city of Ankara, district of Keçiören. City of Ankara has been accommodating a population of 4 466 756 and 843 535 of this are living in the district of Keçiören (Anonymous, 2007). In the selection of the district of Keçiören as sample area for this study, district’s heterogeneous property with regard to cultural and socio-economic structure and accommodating various fractions of the community, in recent years with urban planning and design studies it’s becoming one of the most changing residential areas have played role. Besides all, in spite of intensive dwelling structure of district, Keçiören is a rapidly developing area in terms of new establishing green areas and parks. In this study, concerning all the above properties, the possibility of evaluating different views of people, living in different physical environments in different cultural and socio-economic structure have been provided.

Methods used in this study are explained in detail under two headings as “data collection methods” and “data analysis method”.

Data collection methods

The data for this research was collected by two means; questionnaire and site surveys.

Questionnaire

One of the data collection method used in this research, was a self-administrated questionnaire. The sample population in this research is the parents of children with disabilities. The steps of the research in this phase are as follows:

Setting the considerations and criteria

The questionnaire’s sections include questions regarding subjects as: socio-economic information, problems being experienced in playgrounds, communication with people without disability and information on the family’s disabled child.

A “pre-questionnaire” has been performed and in consequence the questionnaire to apply has been shaped. During the preparation of questionnaires support has been taken from the “Turkey Disabled’s Education and Solidarity Foundation (Anonymous, 2006).

Setting the method of questionnaire

Steps followed in the application of questionnaire are: determining the target group (families having children with disabilities) and forming the frame (12 year old and under individuals). According to “Keçiören Disabled Map Project for a Disabled-Free Keçiören 2006” which has been prepared by “Turkey Disables Education and Solidarity Foundation”, 4506 disabled people live in the district of Keçiören. From this 4506 people, 12 year old and under individuals have been selected.

Determining the type and size of the sample

“Probability Sampling” method is which has been proved by many researchers to be an appropriate sampling method for the questionnaire researches has been selected (Baş, 2006). The questionnaire number to be applied on representing of 1815 has been statistically determined as 678.

Application of the questionnaire

Taking into consideration of sensibility of families having individuals with disabilities and the requirement of experts during the application of the questionnaires to the families help has been received from the “Turkey Disabled’s Education and Solidarity Foundation” on this matter. Taking account the probability of
insufficient percent of questionnaires returned, the questionnaire was sent out to 1000 disabled children parents and evaluation has been made upon 667 questionnaires returned.

**Site survey**

The site survey was carried out in 355 playgrounds in the district. Site surveys were carried out to determine park's physical conditions, location, access possibilities for disabled etc. This investigation is carried out in two steps.

**Investigation and evaluation within the scope of control lists**

Control lists have been developed for determining the physical barriers for disabled children in playgrounds. The list has been prepared in two parts as "evaluations for the entire park" and "evaluations for the playground". This "control list" allowed a detailed investigation relating to area’s all spatial and physical properties starting from the entrance of the park and accessing to playground.

The "Control list", is composed of two main parts: These are: for the entire park and for the playground in the park. Evaluations have been made in main titles and within the frame of definite number of criteria. To evaluate the entire park; the general assessment of entire park (3 criteria), the general access areas (9 criteria), social elements/facts (4 criteria), security (5 criteria); and for the playground; playground entirely (3 criteria), area quality (9 criteria), location of the playground (3 criteria), security (4 criteria) have been set. In the context of this paper only selected number of criteria has been evaluated.

**Observations by site investigation and photograph**

During park investigations, if needed, personal observation and opinions have been noted in the control lists. These observations include personal evaluations of experts, matters they highlight, instant assigments etc. Besides, verbal contacts sometimes made with park users have also been evaluated. Within the scope of these park investigations, each park has been photographed in detail and marked on the map.

**Data analysis methods**

In the analysis and evaluation process of data compiled, a round table meeting has been held, which experts from different professional disciplines, researchers and families having children with disabilities attended. In this meeting, results of questionnaire and site survey have been presented and shared by the attendants.

**RESULTS**

Evaluations relating to physical disabilities have been made by taking into consideration the "site survey" via control lists and photographs. Besides, results of "questionnaires" have contributed to the determining of physical barriers. Within the scope of "site survey", besides, main determinations relating to convenience evaluation as to children with physical disabilities are as follows:

**Relating to entire park**

In regard to "accessible entry point" suitability for children with physical disabilities is at a rate of 29.2% while "parking lot" is appropriate for only at 2.2%. "Ramps" do exist sometimes but they are appropriate only at a rate of 20.5%. "Barriers" either do not exist or they are appropriate only at a rate of 3.2%. "Circulation" is appropriate at a rate of 30.8% besides "pedestrian ways" are insufficient for disabled in terms of width and properties. Ground surfaces are appropriate for the use of children with physical disabilities at a rate of 56.2%. "Water surfaces" in the parks are appropriate at a rate of 13.5%. "Non sheltered points" do exist in most of the parks but even so the rate is high with 45.9% (Figure 1).

**Relating to playground**

"Distinctiveness" of the playground area for children with physical disabilities is at a rate of 40%. There is no particular consideration in terms of "plant selection" and the rate is 25.9% while the rate for "green surfaces" are 25.4%. There is a considerable low rate for "sand surfaces" with 0.5%. The rates for some facilities such as "WCs" (30.3%), "fountains" (20%) and "rubbish bins" are (64.9%) considerable high compared to other features and design elements. "Location" convenience rate is 47.6%. When it comes to the rates for "barriers" (27%), "signboards" (2.2%) the rates are quite low. "Ground surfaces" of the playgrounds are appropriate for children with physical disabilities at a rate of 41.4% (Figure 2). The results of the "questionnaire" applied to the families of the disabled children can be summarized as follows:

Respondents of the questionnaire are between 20 - 40 years old individuals by a majority. Large part of the questionnaire is answered by mothers (60%). Most of the respondents are primary school graduates (47%). High-school graduates take second place (26%). Income of most of them is between 500 - 1000 YTL (36%). Namely, low income group is predominating. Respondents express that they usually bring (Yes 37% /Sometimes 44%) their children to parks. Respondents who do not bring their children to parks express the cause as unsafe and unsuitable condition of parks for children. They think that they can benefit more from parks if safety is raised (21%), appropriate ground cover is applied (17%), playground elements and other constructive elements is adapted for the use of disable and transportation is eased. Surprisingly only 46% of the respondents think that playgrounds do not meet the needs of the children with disabilities. Community’s negative point of view to disabled (23%) and negligence of municipality in establishing suitable medium (physical and social) are thought as factors affecting disabled integrating with community. In regards to integrating of disabled child to
community, the respondents think to share the role with the rate of; children without disabilities (22%), parents of the disabled (21%) and the municipality (16%) are thought to share the role. The rate of respondents being pleased and encouraging their disabled children to play with their peers without disability is quite high (62%). Respondents who do not encourage their disabled children to play with their peers without disability indicates that; children without disabilities do not want to play with disabled ones (34%) and also their own children do not want to play with the disabled ones (22%). Most of the disabled children have (59%) friends without disability. Respondents desire their children play with their peers without disability (69%). In regards to acceptance of disabled children respondents think; disabled children in the playgrounds are accepted by their peers without disability at the rate of 43% and by their families at the rate of 38%. Respondents' rate of awareness on the laws and regulations concerning disabled are 53%, and regarding studies of nongovernmental organizations is 64%.

**DISCUSSION**

Playgrounds are places that children with disabilities can spend time with their peers without disabilities. These places are also areas being used in which activities take place that play an effective role in the raising of level of tolerance and awareness beginning from childhood within the frame of social integration and cohesion. Effective interventions to increase the social interactions between children with and without disabilities must be developed and implemented in these settings for both groups of children to socially benefit (Terpstra and Tamura, 2007).

Referring to the study done by Petrie and Poland (1998), Wooley et al. (2006) state that, "play opportunities have been identified as particularly being important for disabled children to make friends". Opportunities for playful peer interaction can foster the development of social cognitive skills, peer acceptance, and the many social and intellectual benefits associated with acceptance. It is not surprising, then, that playground time is valued in education as a means of fostering social interaction (Yuill et al., 2007). It is essential that children be accorded the right of playing and living in an environment without barriers and restrictions be abolished especially in playgrounds. As in all outdoor environments some physical and social barriers exist that confine these areas’ using possibilities. Determining these barriers will help to increase the possibilities and fulfill the needs.

Determining physical and social barriers and developing strategies allowing a child to get access to the play group and be accepted by the peers is highly important. Gaining entry to a play group is no easy social task and requires social competence on the part of the child (Vedeler, 2004). In this regard, barrier free areas will ease this difficulty to some extent. Within the scope of this research, physical disabilities are determined to cause considerable constraints in the use of the playgrounds. The barriers that disabled child comes across when he/she takes step from indoor to outdoor until reaching to park also continues in the park entirely and in the playground. Results of the observation, investigation and questionnaire carried out in this context to determine the physical barriers have put forward that physical disabilities severely restrict the lives of the individuals and their families. Physical barriers relating to outdoor usage are the barriers which the disabled child comes across during his/her all outdoor space usage. In this context, playgrounds are also not different from all other outdoor space usages. However, herein, it should be taken into consideration that playgrounds have a special status among others and improving sensibility beginning from these places would contribute to socialization and cohesion processes.

Research findings show that playgrounds are designed regardless that disabled children are part of the society and just like other children they need to play, socialize and spend time outdoors. A large portion of almost all investigated playgrounds is not appropriate for the use of disabled children from many aspects. The fact that the playground and play equipment are not designed for children with restricted mobility is given as an obstacle.

Nabors et al. (2001) state that, playground toys and materials should be safe, durable, versatile, and accommodate different ages, abilities, and interests. To foster cooperative interactions between children on playgrounds, they should be provided with toys that encourage social interactions rather than those that encourage solitary play (Beckman and Kohl, 1984; Martin et al., 1991). The playground equipment should be designed allowing all children the opportunity of integrated play.

One of the other reasons why children with restricted mobility cannot use playgrounds is quite simply the ground cover. Sand or gravel makes it difficult for to enter the playground area. Also accessible paths should lead to playground. Accessible surfacing such as rubber tiles rather than gravel or sand which are impossible for especially wheelchairs to traverse. Evaluation within the scope of control lists is carried out by sampling the children with physical disabilities. The other disability groups are not considered. This can be evaluated as a constraint of the study, on the other hand, emerges as an obligation in terms of study practice and obtaining reliable results. Difficulty of studying relating to disabled stems from this point. In this context, the diversity of designs to be made for disabled children and lack of information of the designer on disabled groups come to the fore. Herein, the most noteworthy factor is the diversity of types and levels of disability and accordingly the difference of restrictions and necessities for every class. Herein, ideal
situation is never to target the creation of spaces designed for disabled child. The ideal is not to create the spaces we call as disabled parks and isolated also in name but to make suitable the existing spaces for common use. Common use space is a considerable step that will carry disabled children from their restricted life indoors to outdoors. However, social barriers should not be ignored in integrating disabled child with community or community with disabled child. Outstanding barriers standing in front of the social cohesion are not sharing of individuals with and without disabilities the same environments and community's lack of information, education and awareness especially beginning from childhood. Families express that the most noteworthy role relating to integrating disabled with community is the family of the disabled and disabled individual.

In this context, one of the parties is disabled children and their families. It is a fact that these individuals typically experience community’s prejudiced attitude and behaviors. Negativities such as prejudiced approach, exclusion, being disdain obstruct these people’s lives. One of the results this situation comes in view as difficulties that disabled experience in integrating with other individuals with the feel of exclusion. Families think that their children are not wanted by their peers without disabilities and are excluded. Questionnaire findings applied to families having disabled child show that they bring their child to playgrounds. Accordingly, most families seem to be willing on their children’s sharing the same environment with others and express that they enjoy their children playing with their peers without disabilities and they encourage them. Families do not encourage their children on this matter state that the greatest barrier is reactions of the disabled children and their families. The opinion of not being accepted of the disabled children by peers and their families reflects to results. As Brunnberg (2005) states by referring the studies of several authors (Hayden, 1999; Matthews et al., 2000), adults determine the design of playgrounds, but in most cases the children decide what to do there. For both adults and children, connections with special places can be material as well as social and inventive. There is a link between the social and the spatial. A special place may equally produce social relationships or be produced by such relationships. Families define the problem relating to integrating of disabled with the community as social, physical barriers, viewpoint of the community to disabled and insufficient studies of related institutions such governorship, ministry. Beyond doubt, all these issues are closely related and should be tackled in coordination. As Ryan (2005) discusses there is limited emphasis upon the experiences of disabled children in public spaces, both within children’s geographies and geographies of disability, whilst there is a large and growing body of work focusing upon both the experiences of disabled people in public spaces, and on children’s geographies, a particular emphasis upon the presence of disabled children in public spaces has been largely overlooked. It is clearly seen that creation of living areas without barriers and benefiting of children from them is possible only if physical and social barriers are tackled together. Results of the research have put forward powerfully the physical barriers. Local governments should be informed and conscious on the issues of effects of games, playgrounds on children with and without disabilities and their families and how the playgrounds should be designed. Nowadays, instead of the playgrounds typically adopted and reflected to applications that addressing to the disabled accordingly excluding him/her, the awareness of designing of the playgrounds in which children with and without disabilities can play together should be created.

Conclusion

The aim of this research was to evaluate the playgrounds in terms of the barriers causing restricted use by disabled children. The results indicate that due to physical barriers playgrounds are indeed not usable for children with disabilities. The results also show that the parents want their disabled children to play more often with non-disabled children and willing to encourage their children to use the playgrounds for physical activity and to interact with their peers. Barriers in physical environment remove the opportunity of unconstrained interaction of disabled children with other children and this affect the physical, cognitive, emotional, social development of them.

Today, as is the case in many societies, the problem for disabled in Ankara is limitation of possibilities of participation to social life. Furthermore, some practices such as “Park for Visually-Impaired People”, “Park for Disabled Children” etc. which can be considered as “stigmatization” (Barış and Uslu, 2009).

The playgrounds should meet the needs of all children, enable and enhance social interaction. This can be done by developing inclusive approaches in designing the playgrounds. Two major challenges can be presented here. One is, “the playground should be designed to ensure increased play activities and allow all children to interact with each other”. And the other is, “the playground equipments must be developed to be accessible to all”. Inclusive approaches should involve also social inclusion in a playground. Social barriers may be a strong reason to avoid the disabled children to use the playgrounds even so these areas would be physically convenient for their use. Awareness rising and changing attitudes of the children without disabilities towards children with disabilities play an important role in this. Designing the playgrounds and the playground equipment are the other aspects to be considered. Design of the playgrounds should encourage social inclusion by
means of play activities and types and playground equipment should be designed to allow all the use of all children independently and on equal terms. Insufficient knowledge of the local governments and lack of awareness of the needs of children with disability can be considered as an obstacle in developing inclusive approaches. In this context, there is a need to bring persons into contact that possess such knowledge and the user of the playgrounds for better understanding of disability, environmental barriers, and to explore the specific knowledge of design and activities. In addition to this, the legislation regarding physical environment should be carefully implemented by the relevant bodies and local governments. Studies of the universities and non-governmental organizations on these issues should be supported, scientific/academic studies should be transferred to local governments and local governments should be supported financially in order to create and sustain such spaces.

REFERENCES