

Assessment of outdoor school environments and physical activity in Ankara's primary schools

Aydin Ozdemir*, Oguz Yilmaz

Department of Landscape Architecture, Ankara University, Diskapi 06110, Ankara, Turkey

Available online 17 February 2008

Abstract

Outdoor school environments are sites for play and physical activity for many children, and shortcomings within these environments are considered significant factors that contribute to children's inactive lifestyles and high levels of childhood obesity. This study explores the associations between the physical characteristics of schoolyards and the physical activity of third and fourth year students in five Turkish primary schools. Data were collected through multiple methods, including behavior mapping of student activities during recess, physical assessments of schoolyards, and interviews with students, teachers and administrations. The findings show similarities in the landscape features and physical qualities of schoolyards, particularly in the types of play and activities in which students engage. Results indicated that active students who walk to and from schools have lower body mass index (BMI) values than passive students, and students in schools with larger yards have lower BMI values. Most of the students prefer spacious and vegetated yards. A major concern is the crowdedness of the yards during recess that limit children's activity. Schoolyards with advanced landscape features are preferred more, and this in turn affects students' positive satisfaction. Outdoor school environments have a correlation to health outcomes and should be designed to promote more activity. Improving the physical and landscape qualities of the public schoolyards should be the primary concern of the designers in order to increase awareness of natural environment and more important, increase the health of children.

© 2008 Elsevier Ltd. All rights reserved.

Keywords: Schoolyard; Physical activity; Obesity; Landscape design; Ankara

1. Introduction

Concern about childhood obesity, and its likely follow through into adolescence and adulthood, is very high on the public health agenda; one of the recommendations from health experts is to increase the energy expenditure within normal everyday activities, as well as including specific exercise periods. Physical environment can foster the healthy development of children. Understanding the ramifications of the physical environment through design and environment-behavior perspectives would focus on the determinants of the environmental variables of physical activity. In this context, investigating how environmental attributes can influence children's perceptions of those

environments and particular physical activity behaviors is a research priority.

There is a growing trend among children with obesity to be at higher risk for other health problems. There are serious long-term health outcomes due to children's lack of activity (Heelan et al., 2005; Taylor, Blair, Cummings, Wun, & Malina, 1999). Research shows that chronic diseases such as coronary heart disease, diabetes and osteoporosis can be triggered by physical inactivity, which can begin in childhood (Bailey, 1995; Berenson, 1986; Hume, Salmon, & Ball, 2005; Pate, Pratt, & Blair, 1995; Raitakari et al., 1997; Sallis & Owen, 1999; Teixeira, Sardinha, Going, & Lohman, 2001; Van Mechelen, Twisk, Post, Snel, & Kemper, 2000). Although children are more active than adults, their leisure time activities are becoming more sedentary due to inactive lifestyle and habits at home (Andersen, Crespo, Bartlett, Cheskin, & Pratt, 1998).

*Corresponding author. Tel.: +90 312 596 1512; fax: +90 312 317 6467.
E-mail address: aozdemir@agri.ankara.edu.tr (A. Ozdemir).

Promoting physical activity among children should be a public health priority, and studies should focus on the determinants of the environmental variables of physical activity.

Our understanding and knowledge of children's awareness of and attitudes towards outdoor environments and environmental issues has been largely explored through environmental psychology and environment-behavior perspectives (Cohen & Wingerd, 1993; Jaus, 1984; Kuo & Andrea, 2004; Reid & Sadi, 1997; Spencer & Blades, 2006; Taylor & Kuo, 2006). Environmental variables are important in any analysis of health behavior because of their contribution to the complex web of causality that may increase activity behavior (Humpel, Owen, & Leslie, 2002; Humpel, Marshall, Leslie, Bauman, & Owen, 2004; King et al., 2000; Owen, Leslie, Salmon, & Fotheringham, 2000; Sallis, Bauman, & Pratt, 1998; Sallis & Owen, 1997). Research on the determinants of potential environmental variables of physical activity is a growing trend (Carnegie et al., 2002; Cunningham & Michael, 2004; Humpel et al., 2002; Owen, Humpel, Leslie, Bauman, & Sallis, 2004; Saelens, Sallis, & Frank, 2003; Sallis et al., 1990; Trost, Owen, Bauman, Sallis, & Brown, 2002; Wendel-Vos, Droomers, Kremers, Brug, & Lenthe, 2007). Despite extensive research, the determinants of physical activity are not fully understood (Dishman & Sallis, 1994; Sallis & Owen, 1997; Vita & Owen, 1995). To increase physical activity, we need to consider the ways in which the environment is constructed and experienced (Baranowski & Jago, 2005; Wendel-Vos et al., 2004). Thus, designers should study more the exploration and understanding of environmental components promoting more active behavior.

Schools have long been recognized as key settings both to promote and to contribute to physical activity because children spend such a large proportion of their time there (Biddle, Sallis, & Cavill, 1998; Iverson, Fielding, Crow, & Christenson, 1985; Klesges et al., 1990; Zask, Van Beurden, Barnett, Brooks, & Dietrich, 2001). Students' perception of the school environment, either indoors or outdoors, is directly related to their satisfaction with those environments, and student satisfaction promotes more active behavior (Fjørtoft & Sageie, 2000; Herrington & Studtmann, 1998). The most common time during which children have the opportunity to be physically active is recess (Zask et al., 2001). Given that children spend considerable time in recess, outdoor school grounds provide an ideal setting for promoting children's physical activity (Mota et al., 2005; Sallis, Judith, & Wendell, 2000; Sallis et al., 1993; Vincent & Pangrazi, 2002; Zask et al., 2001).

Type of commute to school is a topic poorly understood and investigated by researchers and practitioners in terms of health outcomes. Research indicates that transportation decisions such as the design of the streets may have links to health outcomes such as obesity (Dellinger & Stauton, 2002; Koplan & Dietz, 1999; McMillan, 2005; Saelens

et al., 2003; Sirard, Riner, McIver, & Pate, 2005). Studies usually investigated these issues through planning (Kerr, Frank, Sallis, & Chapman, 2007; McMillan, 2005; Saelens et al., 2003) and safety perspectives (Bradshaw, 2001). In the case of children's commute to school, the distance from home to school could be the primary barrier to walking to school (Bradshaw, 1995; DiGiuseppi, Ian, Leah, & Diane, 1998; Frank, Andersen, & Schmid, 2004).

Today, in highly dense urban environments, children's interaction with nature is declining (Rivkin, 1995). Lack of landscaped outdoor spaces and the synthetic atmosphere of play areas have contributed to the loss of children's contact with nature (Herrington & Studtmann, 1998). Outdoor school environments associated with natural elements could become the primary places for children to gain experience with nature (Hart, 1993). Hard surfaces, however, limit young children's physical activity in schoolyards (Boldeman, Dal, & Wester, 2004; Fjørtoft & Sageie, 2000).

Research shows that students' activities in natural schoolyards are more creative than students' activities in yards that lack natural elements (Lindholm, 1995), and these environments positively affect learning and cognitive qualities (Fjørtoft & Sageie, 2000; Fjørtoft, 2004). Children prefer more complex, challenging and exciting play environments to traditional playgrounds (Cunningham, Jones, & Taylor, 1994; Maxey, 1999; Sebba, 1991; Titman, 1994). There are attempts to transform existing schoolyards from asphalt yards into environmental gardens, which promote more active behavior and friendlier atmosphere (Moore & Wong, 1997).

The landscape is an ecological system sustained by the physical factors for the benefit of children. The role of the landscape for the children to play and learn is viewed as a set of affordances (Gibson, 1986; Heft, 1999; Kyttä, 2003; Wohlwill & Heft, 1987), which is the functional meaning of the setting and its content for the children to play and perceive its benefits (Heft, 1999). Natural playgrounds bring many possibilities for children to perceive affordances; the children view nature as an exploratory platform for discovery and satisfaction (Kellert, 2002), which is supported by the independent mobility of children (Kyttä, 2004).

According to person-environment fit theory, individuals' behavior, motivation and mental health are influenced by the fit between the characteristics individuals bring to their environments and the characteristics of these environments (Caplan & Harrison, 1993; Edwards, Caplan, & Van Harrison, 1998). Children are not likely to be very motivated and satisfied, if they are in environments that do not fit their psychological needs. Then the theory predicts a decline in the motivation, interest, performance, and behavior of those students as they move into these environments (Bonnes & Secchiaroli, 1995; Edwards et al., 1998; Stokols, 1979).

The role of playgrounds should change to encompass the shrinking access children have to the natural outdoors;

متن کامل مقاله

دریافت فوری ←

ISIArticles

مرجع مقالات تخصصی ایران

- ✓ امکان دانلود نسخه تمام متن مقالات انگلیسی
- ✓ امکان دانلود نسخه ترجمه شده مقالات
- ✓ پذیرش سفارش ترجمه تخصصی
- ✓ امکان جستجو در آرشیو جامعی از صدها موضوع و هزاران مقاله
- ✓ امکان دانلود رایگان ۲ صفحه اول هر مقاله
- ✓ امکان پرداخت اینترنتی با کلیه کارت های عضو شتاب
- ✓ دانلود فوری مقاله پس از پرداخت آنلاین
- ✓ پشتیبانی کامل خرید با بهره مندی از سیستم هوشمند رهگیری سفارشات