

The Importance of Outdoor Practices for Children's Health and Development and for the Community

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Introduction

Whether on the street, in a park, or in a forest, one of the most favorite places for children to be is the outdoors. Parents, teachers, community authorities, and the general public should be aware of how playing outside has so much potential, so many benefits, and can be so enjoyable for everyone. What makes the outdoors a unique context for children's health and development? How the community benefits from having their children playing out? First, the outdoors is an open environment where noisy voices, large, exuberant, and risky movements are allowed, which gives children a sense of joy and freedom of being and doing (Bilton, 2010; Sandseter, 2009). Such a big scale scenario also makes children move more, sit less, and play longer (Gray et al., 2015). While outdoors, children are exposed to sunlight, fresh air, and natural and living things, benefiting their health and development (Bilton, 2010; Dymont & Bell, 2008). Moreover, the outdoors is a free, accessible, and continuously changing environment, where children can connect with nature, experiencing natural phenomena (Maynard & Waters, 2007), meeting new people and becoming familiar with their surroundings, which enables them to feel

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safe and independent to move within the community (Crawford et al., 2017).

Despite the many benefits of playing outside, the time spent outdoors has been declining due to a number of reasons, including caregivers' fast-paced lifestyles, rapid urbanization, and concerns about children's safety (e.g., injuries, stranger abduction) while playing outdoors (Tremblay et al., 2015; Veitch, Salmon, & Ball, 2010). However, not only being outdoors is safer than what parents perceive, but also staying indoors is less secure than what most parents think (e.g., spending more time in front of screens increases the risk of being exposed to cyber-bullying and violence, and of eating unhealthy snacks) (Tremblay et al., 2015). According to a systematic review of the relationship between risky outdoor play and children's health, the benefits from engaging in risky outdoor play are worth, considering the low frequency of injuries that actually occur (Brussoni et al., 2015). In this context, where beliefs about playing outside have become so ambivalent due to generalized public misperceptions, compromising the time children spend outdoors, the present chapter seeks to provide an overview of the benefits of outdoor-oriented practices for children's health and development and the for the community.

The concept of affordances

The concept of affordances (Gibson, 1979) is essential to understand the uniqueness of outdoor practices. According to the Gibsonian theory, the opportunities for play and the type of activities in which children engage, are closely related to the properties of the environment (e.g., the area, the type of surface, the number of people). Clearly, the actions afforded by an indoor area are different from those afforded by outdoor environments (Flôres, Rodrigues, Copetti, Lopes, & Cordovil, 2019). The greater freedom to move around and explore afforded by outdoor environments encourages the use and development of gross motor skills and the engagement in moderate and vigorous physical activity (Flôres et al., 2019; Green, Riley, & Hargrove, 2012). Thus, physical play interactions such as "chase and catch", "hide and seek", "hopscotch", and "duck, duck, goose" are more predominant in outdoor contexts, rather than indoors (Veiga et al., 2017). Besides, outdoor elements like trees, grass, rocks, uneven ground and slopes, digging patches, and flat areas afford risky play (Little & Sweller, 2015;

Sandseter, 2009), such as sliding, climbing heights or riding at high speed (Stephenson, 2003).

One should note that the perception of affordances depends on children's age, body size, experience, temperament, and motor competence (Adolph, 1995; Almeida, Luz, Martins, & Cordovil, 2016, 2017; Plumert & Schwebel, 1997). Therefore, the same element might afford different actions, depending on children's characteristics. For example, while a log affords a young child sitting, it can afford an older and more proficient child balancing and jumping. In the same way, while grass might afford pulling and sensory exploring to a toddler, it can afford rough-and-tumble play to preschoolers.

The outdoors contributes to motor development and physical health

The emergence and refinement of children's motor abilities are closely related to their embodied experiences (Marmeleira & Duarte Santos, 2019), including the engagement in physical play and other outdoor activities. Through interactions with the environment during physical play, children progressively gain control and ultimately mastery over their bodies, improving their motor competence (Little & Sweller, 2015; Little & Wyver, 2008). Besides, the outdoors offers a sense of exhilaration and courage while simultaneously exposing children to risk and challenge. Such context motivates children to test their strengths and limits, try new skills, to learn how to adapt to the changing environment and to negotiate risky events, therefore improving their actual and perceived motor competence (Kemple, Oh, Kenney, & Smith-Bonahue, 2016; Little & Sweller, 2015; Little & Wyver, 2008).

Building a proficient movement repertoire is of paramount importance, as children become more confident in their motor abilities, and therefore more likely to engage in structured and unstructured physical activities, not only during childhood and adolescence but probably also during adulthood (Robinson et al., 2015). The big-scale scenario, as well as the many slopes and varied pavements of outdoor settings, give children opportunities to develop locomotor skills such as running, jumping, sliding, skipping, hopping, or leaping. Such environmental elements also provide opportunities for children mastering object control skills, such as hitting (stationary or moving) objects, dribbling balls, and kicking, catching, or throwing objects.

Moreover, the various natural elements and the standardization of their disposition promote children's balance and postural control abilities, such as jumping from rock-to-rock, standing over a moving log of wood, climbing a tree, walking over a narrow passage, riding a bicycle, etc. Indeed, research shows that it is easier for children to improve their fundamental motor skills in outdoor than in indoor environments (Flôres et al., 2019; Green et al., 2012). Besides, empirical evidence supports that children with better motor competence tend to be more physically active, have better physical fitness and a lower rate of obesity, than their peers with poorer motor competence (Marmeleira, Veiga, Cansado, & Raimundo, 2017; Wrotniak, Epstein, Dorn, Jones, & Kondilis, 2006).

Physical activity is a fundamental resource for children's health and development (Marmeleira & Duarte Santos, 2019), contributing to more favorable metabolic, body composition, and cardiovascular risk profiles, as well as enhanced bone health, and reduced symptoms of anxiety and depression (World Health Organization, 2010). Compared to indoor environments, the outdoors is generally more likely to contribute to the World Health Organization (WHO) recommendations of a minimum of 60 minutes of moderate-to-vigorous physical activity per day for children (Kemple et al., 2016; World Health Organization, 2010). Compared to indoor childcare settings, preschoolers are twice as active and less sedentary when outside (Tandon, Saelens, Zhou, & Christakis, 2018). A recent study carried out in five childcare centers in the USA reported that preschoolers were significantly less sedentary (51% vs. 75%) and more physically active (31% vs. 12%) when outdoors, compared to when indoors (Tandon et al., 2018). Besides, to achieve a minute of moderate-to-vigorous physical activity, preschoolers only needed 3.8 minutes outdoors, whereas they needed 9.1 minutes indoors (Tandon et al., 2018). A study with older children (7-14 years, from Canada) reported that each additional hour spent outdoors per day was associated with 7.0 extra minutes of moderate-to-vigorous physical activity, 762 more steps, and less 13 minutes of sedentary time (Larouche, Garriguet, Gunnell, Goldfield, & Tremblay, 2016).

Outdoor play requires physical capabilities as strength, resistance, speed, agility, and flexibility for moving around and interacting with environment, therefore promoting children's physical fitness. In fact, children who live in rural areas (and thus who are more

likely to spend more time outside), usually show better scores on several physical fitness components, including strength, cardiorespiratory fitness, flexibility, and muscle endurance (Antunes et al., 2018; Tambalis, Panagiotakos, & Sidossis, 2011; Tinazci & Emiroglu, 2009).

Being outside also exposes children to the natural sunlight. Sunlight exposure can trigger a cascade of biological events that leads to the production of more serotonin and vitamin D; among other benefits, these elements have a positive influence on children's affect (e.g., preventing depression) and bone health, respectively (Baldwin & Rudge, 1995; Misra, Pacaud, Petryk, Collett-Solberg, & Kappy, 2008). In everyday language, to "get fresh air" is a frequent comment on the benefits of taking children outside, especially to "green" and natural spaces. The literature is aligned with such generalized perception, as air quality in indoor facilities is often worse than outdoors (Tremblay et al., 2015). In particular, the risk of asthma seems to decrease when children play in natural landscapes and areas with higher vegetation density (Lovasi, Quinn, Neckerman, Perzanowski, & Rundle, 2008; McCurdy, Winterbottom, Mehta, & Roberts, 2010).

The outdoors benefits social-emotional development and mental health

The outdoors is a rich environment also for social-emotional development. The freedom to move around the space facilitates children to move in and move out social interactions, according to what they are feeling or needing. Therefore, when a play interaction becomes too emotionally intense, a child can more easily move away when outside, rather than inside (Ouvry, 2003). For example, while it is quite expected that a child goes for a quick run to get some distance and calm down when playing roughly with their friends outdoors, this scenario is not as expected when indoors. Thus, the greater sense of space and freedom of mobility offered by outdoor spaces might facilitate the practice and mastery of social skills. In fact, lower levels of outdoor play have been related to poorer social competence of preschoolers (Hinkley, Brown, Carson, & Teychenne, 2018). Regarding older children, more time spent outdoors is related to fewer peer problems and better psychosocial health (Larouche et al., 2016).

Outdoor environments stimulate more physical play with peers, which is of paramount importance for children's emotional

development (Veiga, da Silva, Gibson, & Rieffe, in press; Veiga et al., 2017). The moderate-to-vigorous physical activity that characterizes physical play is accompanied by physiological arousal (e.g., racing heartbeat, rapid breathing, high muscle tone). Such bodily sensations are an important component of the emotional experience, giving important cues for children to understand how they are feeling (e.g., rapid breathing and heart beating is associated with fear). The perception and awareness and these bodily signals have been related to emotion regulation skills (Schaan et al., 2019). Emotion understanding and regulation are necessary skills for children to succeed in social situations (Denham et al., 2003). Indeed, research has shown that the more children engage in outdoor physical play, the more socially competent they are (Veiga et al., 2017).

Physical play has been also argued as an important context for social learning of children with disabilities (Veiga et al., in press). Research shows that it is the most enjoyable and favorite form of play for children with disabilities (Case-Smith & Kuhaneck, 2008). Possibly, as physical play does not require complex communication skills, fine motor skills, and long periods of attention, children with disabilities are more likely to succeed in physical play interactions rather than in pretend or constructive play (Veiga et al., in press). Besides, this form of play, involving twisting, spinning, rolling, bouncing, wrestling, is also an opportunity for proprioceptive and vestibular stimulation which helps children (especially those with sensory integration difficulties) to manage their behavior and feel calmer (Baranek, 2002; Blanche & Schaaf, 2001).

Furthermore, children can easily find plenty of natural loose parts (leaves, logs, stones) in the outdoors, including some big and bulky ones. Playing with these natural loose parts requires children to ask for help from others, thus promoting social negotiation and collaboration (Gibson, Cornell, & Gill, 2017), and has been related to increased socialization and resilience (Bundy et al., 2017; Flannigan & Dietze, 2017). Besides, unlike traditional toys, which often have a closed function, natural loose parts stimulate children to think, discover, and invent new ways and possibilities. Having natural loose parts available will enable children to solve problems, and to modify their own constructs and ideas during play (a stone can be used to throw, to stack, to simulate a car or a doll, etc.), therefore also promoting divergent

thinking, creativity, and problem-solving skills (Casey & Robertson, 2016; Daly & Beloglovsky, 2015).

The outdoors creates social capital for the community

Playing out is also important for the community. The human being is strongly driven by the need for connection and socialization with others, and one of the most relevant expressions of this need is the establishment of friendships. Children are no exception, and they often find in free play a central tool for reaching others and establishing their most significant friendships. Indeed, research shows that often friendships do not occur within the classroom, but rather in play (Hart, 2002) and other social activities outside school (Offer & Schneider, 2007). When children have the chance to interact freely with their peers who live in their neighborhood, they get the opportunity to meet and bond with their friends, neighbors, and their community. Hence, children's outdoor play is an important key in the process of creating social capital for families and the neighborhood (Morrow, 1999; Offer & Schneider, 2007; Weller & Bruegel, 2009).

When children of the same community play regularly with each other, they allow parents to observe and interact not only with their children's friends but also with their parents, i.e., their neighbors. Offer and Schneider (2007) showed that parents were more likely to connect with the parents of their children's friends and create social closure if their children had good friends. It is important to note that those high-quality friendships were mainly developed in social activities outside school. Such interactions allow parents to verify that their children's friends and their parents share the same set of values and principles, thus reinforcing mutual trust, which is fundamental for fostering strong communities.

Unfortunately, as we have pointed before, opportunities for children's free play (especially for playing outdoors) have been declining. Streets do not always offer the best conditions for children to play freely, spontaneously, and safely. Although children might find such conditions in playgrounds, those are not usually close to their homes, the route to them is not always the safest to get there independently, which makes its access often dependent on adults' schedules. Giving the importance of outdoor play and its decline, Play Streets are becoming increasingly popular worldwide, involving the

temporary closure of a local residential street to motor vehicles in order to promote its use as a safe play space, ultimately aiming to increase children's autonomy and sense of community (Meyer, Bridges, Schmid, Hecht, & Porter, 2019).

Research has shown that even such temporary actions as Play Streets, promote the notion of cohesion inside the communities where they are held (Meyer et al., 2019; Zieff, Chaudhuri, & Musselman, 2016). For example, a study focusing on four Play Street events in different neighborhoods of San Francisco (USA) showed that 94% of the parents agreed that Play Streets strengthen their community (Zieff et al., 2016). A similar work focusing on a single Play Street event showed that 30% of parents met new neighbors, and 54% of parents reported strengthened relationships with neighbors previously met (Cortinez-O’Ryan, Albagli, Sadarangani, & Aguilar-Farias, 2017). Moreover, after a 16-week program of weekly events, street play was identified by 61% local adult residents as a good way for children to make new friends, a good way for children to feel part of the community (56%), and a good way for neighbors to get to know each other better (28%) (Murray & Devecchi, 2016). Also, 20% of the parents, residents and children reported that the local implementation of a play street led to a better sense of community, and 43% of parents identified social interaction as the main reason they liked the project (Murray & Devecchi, 2016). Clearly, outdoor practices in the local community seem to bring a positive change in the neighborhood dynamics and a stronger sense of community.

As Roger Hart (2002, p.136) brilliantly points "There are two major reasons why play should be a priority for city governments: first, play is important to children's development and second, free play in public space is important for the development of civil society and, hence, for democracy."

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