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The Benefit of Outdoor Activity for Child Development

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Review Article

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Abstract

Activities outside the home or outdoor activities are activities carried out in open spaces that allow children to have the freedom to play and relate to various natural elements. Outdoor activities offer children natural and exciting activities, and play promotes cognitive, physical, social, and emotional well-being, offering the necessary conditions for children to develop and learn. This literature review discusses the impact of outdoor activities on child development. The discussion will cover outdoor activities that have many benefits for children's development, both in terms of sensory development, motor development, cognitive development, development of emotional regulation, mood, and behavior, as well as social interaction and social skills.

Keywords: Outdoor Activities; Child Development

Outdoor Activity

Outdoor is an open and constantly changing environment where it is possible to experience freedom, rough and boisterous movement, and contact with natural elements. Thus, Outdoor Activity can be defined as an activity carried out in an open environment where children will perform gross motor activities freely in nature. The importance of play for children's healthy development is based on solid research [1].

Play promotes cognitive, physical, social, and emotional well-being as a natural and engaging activity, offering the necessary conditions for children to develop and learn. Through play, children can experiment, solve problems, think creatively, cooperate with others, gaining more profound knowledge about themselves and the world. Furthermore, from an early age, the possibility to experience several unstructured play opportunities, where the child can decide what to do, with whom, and how, promotes positive self-esteem, autonomy, and confidence.

Children benefit from sunlight, natural elements, and open-air when playing outside, which contribute to bone development, a more robust immune system, and physical activity. Unfortunately, the growing culture of fear about possible outdoor accidents influences parents' attitudes towards outdoor play, so children tend to stay indoors, occupied with structured activities, and controlled by adults. The possibility of danger, interaction with strangers, and car traffic were the factors most frequently mentioned by parents for not allowing their children to play outside, even though they recognized the importance of the experience.

The outdoor environment offers a unique stimulus that captures children's attention and interest. Wood, stones, flowers, soil, and water are explored with curiosity and a drive to learn, as they offer many possibilities for play. As

says, natural elements are open-ended materials that can respond to children's imagination and needs. In the process of reinventing and giving new meanings to objects (e.g., a stick can be a gun, a boat, or a pen), it is possible to mobilize skills related to divergent thinking, creativity, problem-solving, and others. The use of natural elements in children's play also creates a more sustainable strategy in terms of resource provision.

Benefits of Outdoor Activities for Child Development

An essential component of children's holistic development is having contact with nature. Holistic development involves physical, emotional, spiritual, and intellectual aspects of learning, which can all be supported by interacting and connecting with the outdoors. For young children, frequent and accessible contact with nature provides kinesthetic, aural, visual, and tactile sensory experiences that enrich their sensory abilities. stated that "The development of the senses precedes that of the higher intellectual faculties, and in the child between the ages of three and six, it is their formative period" (p. 143). Therefore, the primary goal in the primary classroom is to support the child's development in an environment with optimal learning conditions. The ideal environment for young children combines life experiences with nature. Such experiences incarnate in the child, allowing the child to develop, progress, and create.

Outdoor environments provide a unique range of play and learning opportunities, and a growing body of research shows that play and activities in natural environments benefit children's development and learning in many areas. In addition, several studies show positive effects of nature contact on various dimensions of children's health and well-being [2-5] cognition [6,7] Attention skills [8,9] Cognition [6,7] attention skills [8,9] motor development [10,11] and social resilience and behavior [12-14].

Evidence and literature strongly suggest that children must stay in touch with nature to lead healthy developmental lives and avoid developmental delays explained that interaction with the natural environment is crucial today as children increasingly lose touch with nature. A prepared environment, filled with outdoor experiences, will offer a rich sensory experience for the child. The accumulated literature [15] also established that contact with nature prepares the child's mind for ideal cognitive engagement with daily tasks that require directed attention and focus. Contact with nature can be presented to children in various ways, from gardening work to walks in the park. Connecting children to nature in a varied but continuous routine will provide traction and restoration for the child's mind and body.

Outdoor learning activities give children a broad perspective on things as a wide world surrounds them outside [16]. Interaction with nature is essential for child development, and outdoor play spaces support this interaction [17]. However, children growing up in artificial environments do not have sufficient sensitivity to nature [18]. The active lives of these children are restricted. Playgrounds and outdoor activities in these areas enable children to use their time effectively, both physically and mentally, when activities are designed according to their age, development, interests, and needs [19].

During early childhood, children acquire basic concepts through active engagement with the environment. Scientific content can be effectively integrated into natural, informal, or structured learning experiences [20]. Places other than classrooms are activity-based, integrative, and stimulating learning environments that provide children with emotional experiences and opportunities to work freely. Even if they are small, they allow children to notice things of natural origin more easily, restructure their emotions, gain information at their own pace, try different learning styles and offer different learning opportunities than those in classrooms. In addition, outdoor environments help children develop skills related to scientific research, such as making inferences, measuring, and observing.

Eigenschenk B, et al. [21] documented the social benefits of practicing sports and learning in natural environments in an extensive study with students from six European countries. They assumed that the main benefits of outdoor education were physical health, mental balance, education, citizenship skills, attitudes, crime mitigation, and antisocial behavior [21,22]. Other authors conducted similar research in Viana do Castelo (Portugal) for school-aged children and adolescents who were beneficiaries of nautical activities. In addition to the advantages mentioned above, they also addressed environmental awareness [23].

Found that outdoor spending increases physical activity, reduces immobility, and prevents excessive weight gain. Therefore, children need to be in contact with nature, i.e., animals, plants and land, and outdoor places are integrated into education [24-32,16]. In addition, it has been reported in the literature that educational programs that incorporate outdoor activities and start in early childhood improve cognitive, social-emotional, and physical-motor skills, awareness, ability to determine cause-effect relationships, observation skills, creative thinking skills, concentration, and imagination. [10,18,32,33].

A striking potential consequence of minimal contact with nature is that it can contribute to poor sensory development in children and developmental delays. Louv defines this

occurrence as an increase in sensory atrophy called "cultural autism" [34]. Losing connection with nature can deprive children of enriching personal experiences that support holistic development. In addition, recent research from the Centers for Disease Control reports that one in seven children in the United States aged two to eight suffer from behavioral, mental, or developmental disorders [35]. As many children suffer from such disorders, using nature as adjunctive or alternative therapy may prove beneficial [15,34].

Research conducted by Chi SA, et al. [36] shows that early childhood is a critical period when a child builds essential competencies and self-concepts that influence their developmental process later in life. Therefore, the quality of education and opportunities offered during this critical period is essential. Nature-based learning environments provided for preschoolers should enhance their developmental aspects and motivate them to explore [37]. Various studies state that outdoor activities enhance sensory development, motor skills development, cognitive development, emotional regulation, mood and behavior, social interaction, and communication skills. These components will be described below.

Sensory Development

Sensory processing allows a person to use their body effectively by regulating sensations from their environment and body [38]. When children experience multiple sources of sensory input, sensory processing issues can affect their participation in play and recreational activities and their views and priorities in their play. Different types of play have been associated with sensory processing [39,40] studied play behavior and sensory processing skills and found a positive correlation between increased sensory processing skills and game socialization.

Outdoor environments are critical because they allow children to get to know themselves and their environment through their senses [29]. They enhance children's skills to share knowledge, express their feelings and make decisions without asking for help, making them more successful. They also offer a learning environment for experimentation, discovery, and research. Children learn freely and have fun in a healthy environment, incorporating nature and stimulating all the senses. Using learning materials without teacher restrictions can increase creativity and understanding in pre-schoolers [30]. They discover themselves and their abilities while playing freely [29].

The complexity and diversity of environments in nature provide multiple opportunities for children to become familiar with nature through direct sensory experiences [41] multiple opportunities for adventure play and exploration Gurholt KP, et al. (2016) [42] and opportunities to gain experience with risk assessment and risk mitigation [43,44]. Suggests that children's self-esteem and independence are strengthened by learning how to manage the environment and nature in which they play and explore. Allowing children to experience nature can also encourage their appreciation of nature [45]. Some researchers consider children's play in natural environments as an essential element in early childhood sustainability education, as it provides opportunities for children to build personal and meaningful relationships with nature and to strengthen their environmental awareness [46,47].

Another striking potential consequence of minimal contact with nature is that it can lead to poor sensory development in children. Louv defines this occurrence as an increase in sensory atrophy called "cultural autism" [34]. Losing connection with nature can deprive children of enriching personal experiences that support holistic development. In addition, recent research from the Centers for Disease Control reports that one in seven children in the United States aged two to eight suffer from behavioral, mental, or developmental disorders [35].

Motor Skills Development

Children's physical activity is motivated by diverse outdoor environments Boldemann C, et al. (2006) [48] and the outdoor environment is a determinant of preschool physical activity. Children who play outside in natural areas also show statistically significant improvements in motor fitness with better coordination, balance, and agility [10]. has shown that outdoor activities offer children natural opportunities to perform exercises using fine and general motor coordination and mostly require being active in the environment. Similarly, Fjortoft J, et al. (2000) [11] state that the environment, including natural elements, provides many opportunities for children to develop their motor skills, such as coordination. This study also showed that a ten-week outdoor education program significantly improved children's motor development.

Outdoor activities are essential for children's motor development [11] well-being and health Previous findings also confirm that the more children play outdoors, the more physically active they are. However, WHO guidelines for children aged 0-5 years suggest that children should be physically active at any level of intensity. Furthermore, research has shown that outdoor environments offer variations in levels of physical activity intensity and different nature-based stimuli can increase or decrease children's physical activity levels Finland has been recognized as a versatile Nordic outdoor environment for children's play which may be one reason why Finnish children have better

motor competence than children in Central and Southern Europe. Finland's natural characteristics and early childhood education environment create an exciting location to analyze children's possibilities for outdoor play and its possible consequences on children's motor competence.

The World Health Organization (WHO) guidelines for young children (2019) state that children should have opportunities to participate in various developmentally appropriate, safe, and enjoyable play-based physical activities. The guidelines suggest that children aged five years or less should be physically active for at least 180 minutes of any intensity throughout the day. The guidelines are based on research findings showing that physical activity is associated with better motor and cognitive development, psychosocial, cardio-metabolic, bone, and skeletal health, and reduced risk of injury. Physical activity is developmentally appropriate when an individual's skill level settles in the zone of proximal development. This zone describes the skill level at which the child can manage with someone's help, but the task is too difficult to manage alone. Play in the zone of proximal development is quite challenging and enjoyable, supporting development progress. From a motor development point of view, a challenging physical environment can create a developmentally appropriate zone for motor learning. Affordability theory suggests that significant environmental properties are essential in developing skills. Therefore, this affordance, an important property of the physical environment, can stimulate motor development [11]. During outdoor play, nature offers various conveniences to direct children's motor skill levels toward the zone of proximal development.

In a study conducted by Sääkslahti A, et al. (2021) [49] it was explained that playing in the forest helps children develop their motor skills. For example, in the forest, there are different trees with which children try to balance, climb, hang and throw. In the forest area, there are rocks of different sizes that are interesting for balancing, jumping, climbing, carrying, pushing and pulling, and throwing, the water in the forest makes an exciting place to jump or release sticks and leaves to float. Natural water in lakes and rivers offers interesting sensory stimuli; when moving in water, the temperature and pressure of the water are recognized on the skin [49]. Water activities stimulate first perceptual motor activity and significantly improve manipulative skills that support fine motor development. If adults encourage children to walk until the water reaches the hip level, the likelihood of learning aquatic skills increases, and learning swimming skills begins. Swimming requires rhythmically coordinating all body segments (arms, legs, torso, and head). Playing with various large floating equipment challenges children's balance skills.

Outdoor learning allows school programs can be done in different environments and with appropriate educational opportunities. Outdoor education activities create many opportunities for motor development. In addition, outdoor education contributes to improved time management and social relationships, motivation for success, leadership, and the development of emotional control [50-52]. It is clear that outdoor education supports personal and social development, helps children understand scientific concepts more efficiently, and leads to increased physical activity.

Cognitive Development

Investigated the effect of outdoor activities on preschool children's scientific process skills in an experimental study as a Master of Science dissertation. The researcher showed a positive effect of ten weeks of outdoor activities on children's scientific process skills, which is consistent with the results of this study. also reported that outdoor education programs increase children's knowledge and provide opportunities to have hands-on experience with nature.

In addition, outdoor education activities have been shown to contribute to math, reading, writing, listening, and critical thinking skills Ouvry M, et al. (2003) [29] highlight that outdoor environments develop children's observation skills by allowing them to follow whatever is happening around them, including animal behavior, changing weather conditions, or construction progress. Outdoor activities also reduce stress and support emotional and social development in children [1,15,53].

Time spent outdoors rejuvenates the mind and body, enhances curiosity, observation, and creativity, and improves problem-solving skills. Contact with nature at an early age influences and enhances children's cognitive, social, physical, spiritual, and emotional skills [34,4]. In addition, a child who freely experiences a life rich in nature may exhibit joy, self-discipline, obedience, and thoughtfulness [34]. Regarding the positive effects of nature, Louv R, et al. (2008) [34] writes, "When children have regular contact with nature, in an unstructured way, they are more attentive, observant, creative and self-satisfied" (p.49). This literature review examines how nature positively impacts children's holistic development, improves cognitive functioning, and promotes mental recovery.

Emotional Regulation, Mood and Behaviour

The stress recovery theory explains the physiological and affective changes observed in natural environments [54, 55]. Natural environments influence stress recovery on several levels that may play a key role in occupational well-being. First, the natural environment accelerates physical

recovery by releasing muscle tension and decreasing blood pressure, heart rate, and salivary cortisol [56]. Second, the natural environment promotes positive changes in affect and emotion [57,58]. Third, natural environmental factors may facilitate stress recovery through autonomic nervous system changes that promote relaxation Gladwell VF, et al. (2012) [59] and positive mood [58]. These theories are relevant in explaining the process of recovery and recuperation among employees as modern work life demands them to process vast and complex information that taxes attention over long periods resulting in cognitive strain. The work environment also creates psychosocial stressors (e.g., time pressure and performance expectations), resulting in decreased occupational well-being [60,61]. Therefore, restoration and recovery opportunities may contribute to employees' better work well-being.

Restoration is more efficient than in artificial environments [55,62-64]. Favorite places in nature rather than artificial environments can enhance affect regulation, promoting positive states and stress recovery [65,66]. Restorative effects are observed when viewing or physically active in natural environments [67,68]. Natural environments contribute to well-being beyond physical activity [55,69,70]. Research provides evidence that natural environments restore after exposure to stress and attention fatigue and positively impact generally healthy individuals [71,72]. Natural environments can, for example, increase physical activity and exercise-related benefits, trigger deep reflection and strengthen nature connections [73].

During human development, experiences gained through interaction with the environment can significantly impact one's perception of the environment [74]. In particular, children are known to have more positive experiences in the outdoor natural environment than adults as they are not yet accustomed to unnatural environments. Studies also reveal that children's development of nature values needs to be supported through regular personal participation and interaction with diverse natural environments, which can significantly impact their awareness and behavior toward green initiatives [75,76]. Through this, pro-environmental behaviors can be further developed, where children will be more conscious in their efforts to minimize the negative impacts of their actions on nature.

The primary purpose of outdoor activities is to encourage the development of certain personality traits with broad social acceptance: initiative, perseverance, optimism, willpower, organizational skills, courage, and unique organizational skills. These characteristics arise from spending time doing outdoor activities and continue to develop as they are continually practiced. In addition, playing outside or engaging in different outdoor activities creates relationships, develops social connections between peers, and develops motor skills while also resulting in more learning possibilities in the natural environment and encapsulating a healthier mindset in all the challenges that society may bring [77-80].

The examined the correlation between exposure to green spaces in participants' neighborhoods, commutes, and schools of residence. The study (2015) claims, "Natural environments, including green spaces, provide children with unique opportunities such as encouraging engagement, risk-taking, discovery, creativity, mastery, and control, strengthening the sense of self, inspiring basic emotional states including curiosity, and enhancing psychological recovery, which is suggested to influence various aspects of cognitive development positively." In addition, studies by Faber A, et al. (2009) [15] have shown that regular exposure to the outdoor environment offers relief from mental fatigue and increases directed attention. Both studies found that children and adolescents who interacted with nature daily could maintain focus and demonstrated higher cognitive functioning in the classroom. In addition, a dose of nature improved student productivity and directed attention, focus, and overall concentration in the classroom.

Social Interaction and Communication Skills

The literature has reported that outdoor learning environments provide students with opportunities to gain hands-on experience and contribute to making connections between what they learn and everyday life [81]. There is also evidence in the literature that outdoor learning activities are effective in preschool education [11]. Proposed that outdoor education contributes to modern linguistic development and influences social skills and creativity [82]. Reported that outdoor education increases comprehension and motivation in preschool children.

In addition, outdoor educational activities have been shown to contribute to math, reading, writing, listening, and critical thinking skills [23]. highlight that the outdoor environment develops children's observation skills by allowing them to follow whatever is happening around them, including animal behavior, changing weather conditions, or construction progress. It has also been revealed that the outdoors reduces stress and supports emotional and social development in children [1,15,53].

[13]. Showed in their experimental study that nature and natural environments positively affect play and children's social behavior. They state that such environments encourage children to play imaginary games, help them have positive relationships with their peers and teachers, and provide them with a different learning environment. Outdoor activities and

sports are primarily undertaken to gain a good level of fitness and health. Another critical motivation is having fun near family, friends, and colleagues [83]. They like the experience of feeling excitement and adventure due to the release of adrenaline. People who engage in outdoor activities benefit from observing the beauty of the scenery and being close to nature. Outdoor sports, the most important advantages are developing specialized skills and abilities and gaining self-confidence [84-86].

Outdoor education activities are interactive activities that simulate real situations and involve completing specific tasks. "Experiential ways of learning involving the use of all the senses" occur generally, but not exclusively, through exposure to the natural environment through outdoor education activities. They involve all three spheres: physical, psychological, and emotional. As a result, participants assimilate a set of abilities and skills that contribute to improving personal performance; furthermore, when team members realize the obstacles that harden teamwork, all this contributes to improving team performance both in practice and in "real life" [87-95].

The primary purpose of outdoor activities is to encourage the development of certain personality traits with wide social acceptance: initiative, perseverance, optimism, willpower, organizational skills, courage, and special organizing skills. These characteristics emerge from spending time doing outdoor activities and continue to develop as they are constantly practiced [95-100]. In addition, engaging in different outdoor activities creates relationships, develops social connections, and develops motor skills while also resulting in more learning possibilities in the natural environment and encapsulating a healthier mindset in all the upcoming challenges that society may bring [77-80,101-105].

Conclusion

Outdoor activities are proven beneficial in supporting children's growth and development. There are various benefits of outdoor activities that can support sensory development, motor skills, cognitive abilities, emotion regulation skills, behavior, and mood and improve children's social interaction and communication skills. In addition, through outdoor activities, children will be exposed to various stimulations that can support the child's development process.

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