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Theoretical article

CHILD AND ADOLESCENT MENTAL HEALTH IN RELATION TO THE NATURAL ENVIRONMENT

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Abstract : The purpose of this study is to investigate the relationship between nature and the mental health of children and adolescents, with an emphasis on how contact with natural environments can contribute to emotional well-being, cognitive development and overall quality of life. The study focuses mainly on the modern social conditions of urbanization, increased indoor spending and intensive use of screens, which affect the daily lives of children and adolescents. The methodology is based on a literature review of international sources related to the mental health of minors and exposure to nature and green spaces. The analysis is organized around theoretical approaches and empirical findings concerning cognitive function, anxiety, emotional state and behavior of children and adolescents. The results of the review showed that systematic contact with nature is associated with improved attention, working memory and emotional balance, as well as with reduced stress and enhanced mental resilience. At the same time, it emerged that green spaces and outdoor experiences enhance creativity, social interaction and a sense of well-being. In conclusion, the work demonstrates that nature is an important factor in supporting the mental health of children and adolescents. It is proposed that the educational process should approach the natural environment more through outdoor activities, environmental education and experiential forms of learning, so that the school experience functions as a support for the psychosocial development of students.

Keywords: nature; outdoor activities; psychology of children and adolescents.

INTRODUCTION

The global burden of mental health difficulties among younger populations has become increasingly prominent, with current estimates indicating that as many as 20% of adolescents worldwide experience mental health problems (UNICEF, 2023). A similar pattern has been documented in the United Kingdom, where the estimated prevalence of probable mental disorder among children aged 7 to 16 rose from 12% in 2017 to 18% in 2022 (NHS, 2022). Evidence from Greece further underlines the seriousness of the issue. According to the World Health Organization, approximately 1 in 4 adolescents aged 15 to 19 in Greece is estimated to live with mental health difficulties, a finding that highlights the substantial psychological burden within this age group (World Health Organization, 2024). At the same time, 22.1% of adolescents report having experienced bullying at school, while 9.5% have been exposed to cyberbullying, conditions that are closely associated with psychosocial vulnerability and that reinforce the need for protective developmental settings (UNICEF Greece, 2024).

MAIN BODY

One of the factors frequently linked to these elevated rates is urbanisation (Lecic Tosevski, 2019). By 2050, 68% of the global population is projected to reside in urban environments (United Nations, 2019), a trend that has intensified concerns about reduced contact with the natural world. In this context, the concept of nature deficit disorder has been used to describe the possible consequences of limited engagement with nature in contemporary childhood and adolescence (RSPB, 2010). At the same time, children and adolescents are spending increasing amounts of time indoors and in front of screens, raising concerns that reduced outdoor exposure and greater screen use may be associated with adverse psychological outcomes (Oswald et al., 2020).

Recent scholarship suggests that natural environments contribute positively to children's neurological and cognitive development (Schertz & Berman, 2019). Findings drawn from three dimensional magnetic resonance imaging and cognitive assessments indicate that exposure to nature is associated with improvements in working memory and attentional functioning (Dadvand et al., 2018; Norwood et al., 2019). Beyond cognition, the literature also points to important benefits for mental health and general well being. These include lower stress levels (McCormick, 2017), improvement in symptoms related to attention deficit hyperactivity disorder ADHD (Vanaken & Danckaerts, 2017), fewer depressive symptoms, lower psychological distress, and stronger emotional well being (Zhang et al., 2020).

A range of theoretical frameworks has been proposed in order to explain why contact with nature appears to support the mental health of children and adolescents (Kruize et al., 2020). One influential perspective is the biophilia hypothesis, which argues that human beings possess an inherent attraction to the natural world and maintain a deep evolutionary connection with it (Grinde, 2009). Within this perspective, exposure to natural settings has been regarded as especially important for healthy brain development (Dadvand et al., 2018).

A second major explanation is offered by attention restoration theory, according to which natural environments enhance cognitive functioning by restoring directed attention, a limited mental resource that is often depleted in demanding everyday contexts (Stevenson et al., 2018). Additional explanatory mechanisms have also been discussed in the literature. These include the promotion of physical activity, the strengthening of social interaction, and the alleviation of stress (Hofmann et al., 2018), alongside stress reduction theory, which similarly emphasises the restorative qualities of natural settings (Ulrich et al., 1991). Nature may also buffer the negative effects of harmful environmental exposures such as air pollution and noise pollution (Dadvand et al., 2018), while increasing exposure to beneficial biological factors such as plant phytoncides and contributing to improved immune functioning and better sleep quality (Kuo, 2015). For children in particular, green spaces appear to support cognitive development not only through these physiological and psychological pathways, but also by encouraging participation, exploration, creativity, discovery, and age appropriate risk taking. In this way, natural settings may strengthen self perception and promote psychological restoration in a broader developmental sense (Dadvand et al., 2018).

CONCLUSIONS

Overall, this study clearly demonstrated that the mental health of children and adolescents is essentially linked to the natural environment and the quality of their daily contact with it. As mental health difficulties increase internationally and in the Greek reality, the need to search for protective factors for the development and well-being of children and adolescents becomes imperative. In this context, the literature review showed that urbanization, limited contact with nature and increased indoor use with intense use of screens constitute an environment that significantly and adversely affects the emotional balance and cognitive function of children and adolescents

The main conclusion of the research is that nature functions as an essential factor in enhancing mental health, attention, working memory, emotional well-being and overall psychosocial

development. The findings presented in the paper converge on the view that systematic exposure to outdoor-green spaces is associated with stress reduction, improvement of ADHD symptoms, reduction of psychological distress and enhancement of cognitive performance.

At the same time, the theoretical approaches examined, such as the biophilia hypothesis and the attention restoration theory, offered a strong interpretative framework for understanding the mechanisms through which nature has a positive effect on child development. The contribution of nature is also reflected in the enhancement of creativity, discovery, active participation and sense of self, elements that are of particular importance for a balanced childhood and adolescent life.

Based on the above, it follows that children's education needs to approach nature more closely and integrate the natural environment as a stable pedagogical and developmental axis. School life can be enriched through more outdoor activities, educational environmental education programs, utilization of school gardens, learning in open spaces and systematic connection of the teaching process with experiential experiences in nature. Such a direction strengthens mental resilience, cultivates healthier forms of socialization and creates conditions for the holistic development of the child. For the future, it is proposed to strengthen research interventions that will focus specifically on the child and adolescent population, with greater emphasis on long-term studies and intervention programs in school environments. The development of Greek research that will systematically examine the relationship between green spaces, school experience and mental health of students in different regions of the country would be of particular value. At the same time, the cooperation of teachers, parents, mental health professionals and local governments is proposed in order to create learning and care communities with greater proximity to the natural environment. Thus, nature can constitute not only a recreational context but also a stable pillar of prevention, health education and pedagogical support.

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