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Anxiety and Depression in Early Childhood: Insights from a School-Based Study in Greece

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ABSTRACT

Childhood anxiety and depression are among the most prevalent emotional challenges, exerting a significant impact on psychosocial development and long-term mental health. Although such symptoms may emerge as early as the primary school years, previous literature suggests that gender differences in emotional difficulties become more pronounced during adolescence. Within this context, the present study examined levels of anxiety and depressive symptoms among primary school children, exploring potential differences based on gender and city of residence.

The sample comprised 322 students attending primary schools in the cities of Patras and Trikala, Greece. Data were collected using the Perceived Stress Scale for Kids (PeSSKi) and the Children's Depression Inventory (CDI), both demonstrating acceptable internal consistency (Cronbach's $\alpha = .65$ and $\alpha = .75$, respectively). Statistical analyses, conducted using SPSS, included descriptive statistics, reliability testing and independent-samples t-tests to identify group differences.

Results indicated moderate levels of perceived stress and mild to moderate depressive symptoms across the sample, with no statistically significant differences observed between genders or between the two cities. These findings are consistent with previous research suggesting that gender-based disparities in emotional difficulties are less evident during childhood. The study highlights the importance of early detection and school-based prevention programs to promote emotional well-being and prevent the escalation of mental health difficulties in later developmental stages.

Keywords: Childhood anxiety; Depression; Primary school; Emotional well-being; PeSSKi; CDI; gender differences; School-based assessment

Introduction

Emotional difficulties such as anxiety and depression are among the most common psychological issues encountered during childhood. Although traditionally associated with

adolescence or adulthood, a growing body of research highlights that such symptoms can emerge as early as the primary-school years¹. These early manifestations are concerning because they are linked to adverse outcomes, including impaired academic performance, difficulties in peer relationships and an

increased risk for more severe psychopathology later in life². Childhood anxiety is characterized by excessive worry, fear or nervousness that interferes with daily functioning, whereas childhood depression may manifest as sadness, irritability, low self-esteem or loss of interest in play or social activities. Despite their prevalence, these emotional difficulties often go undetected, partly due to the misconception that early emotional disturbances are transient or less severe³. Gender differences in childhood emotional disorders remain an area of active research. While findings generally suggest that girls exhibit higher rates of anxiety and depression during adolescence, studies in younger populations yield mixed results⁴. Sociocultural factors such as geographic region or school environment may also influence emotional development, although empirical evidence remains limited. Early assessment of stress, anxiety and depressive symptoms in primary-school-aged children is essential. Timely identification can allow early intervention and promote adaptive developmental outcomes. Moreover, early childhood is a critical period for brain development, during which emotional and environmental experiences strongly shape neural structure and function. Evidence from neuroscience suggests that anxiety and depression in childhood can alter stress-regulation systems and brain morphology. For example, increased amygdala activation has been observed in children with internalizing disorders⁵ and reduced hippocampal volume and white-matter integrity have been reported in adolescents with anxiety or depression⁶. Dysregulation of the hypothalamic-pituitary-adrenal (HPA) axis, including flatter diurnal cortisol slopes and blunted stress reactivity, has also been documented⁷. Encouragingly, such neurobiological alterations appear to be partly reversible through early therapeutic interventions such as cognitive-behavioral therapy⁸. Taken together, these findings highlight the importance of early detection and intervention not only to support psychosocial well-being but also to safeguard the developing brain. The present study investigates perceived stress and depressive symptoms among Greek primary-school children, focusing on possible differences by gender and city of residence.

Method

Participants

The study included 322 children aged 7-12 years ($M = 9.8$, $SD = 1.52$) recruited from three public elementary schools in two Greek cities: the 35th Primary School of Trikala, the Experimental Primary School of the University of Patras and the 14th Primary School of Patras. The sample comprised 147 boys (45.7%) and 175 girls (54.3%).

Procedure

The research was approved by school administrations. Written parental consent was obtained before participation. Data collection occurred during regular school hours under the supervision of trained researchers. Participation was voluntary, confidential and anonymous.

Measures

The Children's Depression Inventory⁹ contains 27 True/False items assessing depressive symptoms such as sadness, low self-esteem and interpersonal difficulties. Internal consistency was satisfactory (Cronbach's $\alpha = .71$). The Perceived Stress Scale for Kids¹⁰ includes 38 items rated on a 5-point Likert scale. Internal consistency in this sample was excellent (Cronbach's $\alpha = .88$).

Results

Descriptive analyses indicated moderate perceived stress and low-to-moderate depressive symptoms. Girls reported slightly higher means than boys, but differences were not statistically significant ($p > .05$; $d = 0.28$). Both scales demonstrated good reliability ($\alpha = .83$ and $\alpha = .87$). A strong positive correlation was found between perceived stress and depressive symptoms, $r(320) = .64$, $p < .001$.

Discussion

This study expands understanding of emotional well-being in middle childhood by exploring anxiety- and depression-related symptoms among Greek primary-school students. Findings revealed moderate stress and mild depressive symptoms, consistent with previous research showing that emotional difficulties are common yet often subclinical². The absence of significant gender differences supports prior research suggesting that emotional disparities between boys and girls emerge more clearly during adolescence^{4,11}. Likewise, the lack of regional differences implies that similar educational and socioeconomic environments minimize contextual influences. Emotional functioning may be shaped more by family dynamics and temperament than by geography³. The strong correlation between stress and depression underscores the interdependence of these processes. Chronic stress can disrupt emotional regulation, leading to heightened vulnerability to depression. From a developmental neuroscience perspective, early screening for stress and depression is crucial. Persistent stress during sensitive periods of neural maturation can reduce neuroplasticity and compromise prefrontal-limbic regulation⁵. In schools, educators and psychologists can play a pivotal role in prevention by implementing evidence-based programs such as Mindfulness-Based Stress Reduction (MBSR), Cognitive-Behavioral Therapy (CBT) and Social-Emotional Learning (SEL) curricula⁸.

Conclusions

Overall, the findings of this school-based study in Greece indicate that emotional difficulties-manifested as moderate stress and mild depressive symptoms-are present even during the early school years. Although no significant gender or regional differences were observed, the correlation between stress and depression underscores the need for preventive measures at the school level.

By integrating mental health awareness into the educational curriculum, schools can foster a supportive environment that nurtures emotional intelligence, stress management and social connectedness. Such early interventions are critical for promoting psychological well-being and healthy brain development, reducing the risk of chronic emotional difficulties later in life.

Limitations and Future Directions

Several limitations should be acknowledged.

First, the study relied exclusively on self-report measures, which may be affected by children limited introspective ability and a tendency toward socially desirable responses. Future studies should employ multi-informant approaches, incorporating teacher, parent and peer evaluations, as well as physiological measures (e.g., cortisol levels, heart rate variability) to obtain a more comprehensive assessment of emotional functioning.

Second, the cross-sectional design prevents causal inferences regarding the relationship between stress and depression. Longitudinal research is needed to clarify how these emotional processes interact over time and to determine whether early stress predicts subsequent mood disturbances or vice versa.

Third, the sample was geographically limited to two cities in Greece, which may constrain the generalizability of findings. Cross-cultural and cross-national research could further explore how cultural norms, educational systems and community factors influence emotional well-being during childhood.

Declarations

Conflict of interest

The authors declare no conflicts of interest related to the content of this manuscript.

Funding statement

No external funding was received for this research.

Ethical approval

The study was conducted in accordance with institutional ethical guidelines. Parental consent was obtained prior to participation.

Author contributions

Georgia Konstantopoulou: Conceptualization, Methodology, Writing – Original Draft, Supervision Eleni Gouzioti: Data Collection, Data Analysis, Writing - Review & Editing Panagiotis Karnampatidis: Statistical Analysis, Visualization, Review & Editing Eliza Eleni-Zacharoula Georgiou: Theoretical Framework, Interpretation of Results, Review & Editing

Data availability

Data supporting the findings of this study are available from the corresponding author upon reasonable request.

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