

THE EPIDEMIOLOGY OF MATHEMATICAL PERFORMANCE, ANXIETY, AND PSYCHOSOMATIC SYMPTOMS

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Learning math is a challenge for many students, but not all math performance weaknesses stem from difficulties in cognitive sub-skills (Szűcs & Mammarella, 2020). Many children's school performance is affected by performance anxiety, which can range from mild to intense stress, but does not always result in low performance (Devine et al., 2018). Somatic syndromes may occur during anxiety. These physiological symptoms are closely associated with emotional manifestations, they are the consequences of each other (Major & Ádám, 2013).

The aim of our research was to investigate the connections between mathematical anxiety, performance, and psychosomatic symptoms. We conducted surveys in four schools in Budapest, Hungary, and four schools in rural areas. We used the Mathematical Ability Test and the Mathematical Anxiety Test among 999 upper secondary students, followed by the PHQ (Physical Health Questionnaire) in the second round. There is a significant ($r = -.928 - -.789$; $p < .001$) negative correlation between mathematical performance and anxiety for all factors and sub-factors. Psychosomatic symptoms occurred in 30% of students, showing a strong correlation with performance. Among those performing below average there is a stronger presence of psychosomatic syndromes. The results suggest that there is a clear significant relationship between mathematical anxiety, performance and the appearance of psychosomatic symptoms among the upper-class students studied. Besides the unique application of measures and methods from different fields of sciences, the educational conclusions are to be taken account in everyday pedagogical practice.

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References

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