



Influence of Mental Fatigue on the Academic Performance of Final Year Medical Students in Lithuania: A Cross-Sectional Study

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Background and Aim. Final-year medical sciences students are exposed to sustained academic and clinical demands that predispose them to multidimensional mental fatigue, including sleep deprivation, burnout, perceived workload and sustained attention deficits. Although these dimensions have frequently been examined in isolation, there remains insufficient integrated evidence on how they differentially predict specific academic performance outcomes within a unified analytical framework, particularly in the Lithuanian higher education context. The aim of this study was to examine the predictive relationships between dimensions of mental fatigue and academic performance outcomes among final-year medical students in Lithuania.

Methods. A quantitative cross-sectional survey design was employed. Data were collected from 150 final-year health sciences students across selected Lithuanian universities using structured Likert-scale questionnaires measuring four dimensions of mental fatigue and four academic performance indicators. Descriptive statistics and simple linear regression models were conducted using SPSS (Version 27) to test the proposed hypotheses at a significance level of $p < 0.05$.

Results. All four dimensions of mental fatigue demonstrated significant negative associations with their respective academic outcomes. Sleep deprivation significantly predicted reduced class participation; burnout was negatively associated with examination performance; perceived workload significantly predicted lower GPA; and sustained attention deficits were significantly related to reduced assignment completion. The regression models indicated moderate explanatory power, confirming that increased mental fatigue corresponds with measurable declines in academic functioning.

Conclusions. Multidimensional mental fatigue significantly predicts academic performance among final-year health sciences students. Institutional strategies aimed at sleep regulation, burnout mitigation, workload optimisation, and attentional support may enhance academic engagement and overall performance outcomes within this population.

Keywords: Mental fatigue; sleep deprivation; burnout; academic performance; health sciences students

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Informed Consent Statement: This study was approved by the Ethics Committee of Lithuanian Sports University (No. SMTEK-77). All participants provided written informed consent prior to participation. The study was conducted in accordance with the Declaration of Helsinki.

