Associations of changes in medical students' demands and resources with changes in emotional exhaustion – a longitudinal study [Abstract]

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Angaben zur Veröffentlichung / Publication details:

Junginger, Sarah, Ulrike Nett, Thomas Rotthoff, Sabine Polujanski, Nadja Karossa, and Ingo Kollar. 2025. "Associations of changes in medical students' demands and resources with changes in emotional exhaustion – a longitudinal study [Abstract]." In AMEE 2025 Barcelona: How are educators relevant to health? 23-27 August 2025, Barcelona, Spain; abstract book, 7E3. Dundee: AMEE - The International Association for Health Professions Education.

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Abstract

Introduction. Many future doctors already experience burnout during their medical studies (e.g. Voltmer et al., 2021). Since the prevention of burnout should commence at an early stage and emotional exhaustion indicates the onset of burnout, we focus on this facet in the first two years of medical school. According to the study demands-resources model, demands are positively and resources negatively associated with emotional exhaustion. As demands we regard the perceived amount of study and examination material and the perceived pressure to perform. For the resources we investigated perceived social support and self-efficacy. Longitudinal studies that analyze these associations of the study demands-resources model during medical studies are still scarce. This study aims to analyze the change in emotional exhaustion among medical students considering associations with changes in demands and resources in the first two years. Therefore, we propose three hypotheses.

H1. During the initial two years of medical school there is an increase of emotional exhaustion of medical students studying in a new integrated curriculum

H2. Changes in perceived demands of medical students (A: perceived amount of study and examination material and B: perceived pressure to perform) are associated with changes in emotional exhaustion

H3. Changes in perceived resources of medical students (A: perceived social support and B: self-efficacy) are associated with changes in emotional exhaustion

Methods. Students from five consecutive cohorts of a new integrated and competency-based curriculum were surveyed at the beginning of their studies (t0) and at the end of each semester during the first two years (t1-t4). A total of n=573 medical students participated in the surveys (n=190 at all five measurement points, n=93 at four, n=162 at three, n=78 at two and n=52 at one time point). We measured emotional exhaustion (subscale of the German short version of Maslach burnout inventory MBI-SS-KV, α = .81-.87), self-efficacy (WIRKALL_r, α = .81-.87), social support (subscale based on items of the German version of the Dundee Ready Education Environment Measure, α = .60-.70) and the two demands (German single items). Latent change score models were used to model the development of emotional exhaustion over time (H1). Bivariate latent change score models were estimated to examine the association of the changes in perceived demands and resources with the change in emotional exhaustion (H2, H3). All analyses were executed using Mplus 8, applying the MLR estimator.

Results. For all variables, the analyses obtain acceptable fit indices (x^2, CFI, TLI, RMSEA, SRMR) and strong measurement invariance. We observed an increase in emotional exhaustion from t0 to t1 and from t2 to t3 ($M_{t0\text{-}t1}$=1.22, $p < .001$, $M_{t2\text{-}t3}$: .33, $p < .001$), no significant change from t1 to t2 and a little but significant decrease from t3 to t4 ($M_{t3\text{-}t4}$ = -0.24, $p < .002$) (H1). The changes in the perceived amount

of study and examination material and the perceived pressure to perform correlate positively, but small with the change of emotional exhaustion from t0 to t3 (amount of study and examination material: e.g. $r_{t1\text{-}t2}$ = .24, p<.001; pressure to perform: e.g. $r_{t1\text{-}t2}$ = .15, p<.001) (H2). The changes over time in social support and self-efficacy correlate inversely with the changes in emotional exhaustion (for example self-efficacy: $r_{t0\text{-}t1}$ = -0.71, p<.001) (H3). Furthermore, there is significant variability in the development of all observed variables, which signified interindividual differences in intraindividual change.

Discussion and Conclusions. This study provides a groundwork for planning interventions to avoid medical student's burnout. Especially during the first year of medical school, changes of perceived demands and emotional exhaustion are associated positively. It is worth addressing the resource of self-efficacy, as it is strongly inverse correlated with emotional exhaustion. For this, supporting self-regulated learning could be a possible intervention (Demirören et al., 2016). Prospective studies are needed to further investigate interventions that support protective factors for emotional exhaustion.

References

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