How Does USMLE Step 1 Examination Performance Predict Short-term Wellness and Perceived Stress?

Nicole Deiorio
How does USMLE Step 1 performance predict wellness?

Nicole M. Deiorio, MD1 JK Stringer, PhD1 Monica Cuddy, MA2 Margaret Wolff, MD, MHPE3 Seetha Monrad, MD3, Roy Sabo, PhD1, Kalissa Zhang, BS1 Sally Santen, MD, PhD1
1. VCU School of Medicine 2. National Board of Medical Examiners 3. University of Michigan Medical School

Purpose
- Wellbeing and stress are areas of increasing concern in medicine. The three steps of the USMLE exam were originally developed as pass-fail requirements toward MD licensure, but their use has evolved to include eligibility for residency programs.
- There is increasing student distress around USMLE Step 1 performance, yet little is known about how Step 1 performance immediately impacts wellness.
- We examined the relationship between step 1 performance with perceived stress and wellbeing.
- We hypothesized that higher Step 1 scores would correlate with lower subsequent stress and improved wellbeing.

Methods
- MD students take the USMLE Step 1 examination following an 18 month pre-clerkship curriculum.
- Wellbeing and perceived stress measured after students returned from the post-Step 1 break, during required orientation to clerkships, using the WHO-5 Well-Being Index and the Perceived Stress Scale.
- Prior MCAT performance and class rank were also analyzed.
- Students who had not received their scores at the time of measurement were excluded.

Results
- There was no significant association between students’ Step 1 performance and their subsequent well-being. (F(3, 266)=0.845, p=0.47)
- There was a significant but modest relationship found between Step 1 performance and students’ perceived stress. (F(3, 264)=13.871, p<0.000), with an $R^2$ of 0.14. Lower performers reported higher stress and vice versa.
- Neither prior performance on the MCAT (slope=-0.04, p=0.720) nor class cumulative rank (slope=0.01, p=0.196) was significantly predictive.

Discussion
Data from the high scorers suggest the rigors of Step 1 preparation did not lead to persistent downstream distress. High-scoring students may have perceived decreased stress because:
- They were content with their Step 1 score.
- They felt less pressure to excel during clinical clerkships.
- They exhibit innate strength at taking multiple-choice exams and find success on exams more achievable.
- They naturally have increased resilience, allowing them to more quickly recover from the stresses of Step 1 preparation.

Conclusion
- Step 1 performance does not overwhelmingly impact students’ perceived wellness.
- This allows us to intentionally plan stress and wellbeing measurement and interventions at other certain pivotal times in the curriculum.
- This data can also inform national conversations around the impact of Step 1 on the welfare of students.