GNYACSM Abstract

Enhancing Mental Toughness in Medical Students Facing Academic Challenges: A Pilot Intervention

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ABSTRACT

Medical students who experience challenges in meeting course requirements often face significant academic pressures, which can include repeating the semester, repeating the academic year, or potential dismissal from the program. *Mental toughness* (MT) is a performance psychology construct that equips individuals with the skills to face adversity and persist towards their goals, whether in sports or academics. MT is crucial for managing stress and maintaining performance under high pressure, thereby supporting optimal human performance. Psychological Skills Training (PST) systematically develops mental skills, including MT, and is structured into three phases: education, acquisition, and practice. The education phase is the most crucial step, as it focuses on helping participants understand the skills, recognize their importance, and see how they affect performance. **PURPOSE**: To assess the educational workshop's impact on students' awareness of their initial MT knowledge, and to evaluate its effectiveness in increasing overall MT knowledge post-workshop. **METHODS**: Six medical school students participated in a 4-hour MT educational workshop introducing MT concepts, their importance, and key skills like attention regulation and maintaining an optimistic mindset. Students rated their MT knowledge on a 7-point scale at three points: before the workshop (initial knowledge), immediately after the workshop (post-workshop knowledge), and in a retrospective evaluation of their initial knowledge (re-evaluated initial knowledge). Paired t-tests were used to compare the data, with Cohen's D assessing practical significance, analyzed using Python (NumPy, SciPy, Matplotlib). **RESULTS**: The comparison between initial and re-evaluated initial knowledge scores yielded a non-significant result, $t(5) = 1.66$, $p = .16$, with a medium-to-large effect size, $d = 0.68$, 95% CI [-2.13, 3.48]. This suggests that the workshop increased students' awareness of their baseline MT knowledge. The comparison between re-evaluated initial and post-workshop knowledge scores also yielded a non-significant result, $t(5) = -1.78$, $p = .14$, with a medium-to-large effect size, $d = -0.73$, 95% CI [-3.54, 2.08]. This indicates practical improvement in MT knowledge following the workshop. **CONCLUSION**: This pilot MT intervention increased students' awareness of their initial MT knowledge and improved their understanding of MT concepts. Although statistical significance was limited by the small sample size, medium-to-large effect sizes highlight the practical benefits of the educational phase. The results suggest that MT education plays a crucial role in helping medical students under academic pressure identify knowledge gaps and recognize foundational skills for managing stress and adversity. These findings support continuing the program by expanding into the skill acquisition and application phases of PST as well as introducing MT training before students enter medical school.