Innovation Abstracts

**The Benefits of Using the Healthy Minds Application in Medical Students**

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**Purpose:** Studies have shown that medical students have an increased risk for depression and suicide compared with the general population and that risk increases throughout medical training. These mental health issues are evident beginning in the first year of medical school and if not addressed, negative outcomes such as burnout, substance abuse, and suicidality are more likely to occur. We studied the effects of using a Healthy Minds Program mobile application (app) on the well-being of medical students. This app was created by Healthy Minds Innovations, Inc (HMI) in collaboration with the Center for Healthy Minds at the University of Wisconsin—Madison. The app is aimed at the cultivation of 4 key attributes of wellness: awareness, connection, insight, and purpose. The goal of the study was to understand the benefit of the app on important health and well-being outcomes and if this would depend on usage amount.

**Approach:** Sixty-one first-year medical students at the Medical College of Wisconsin Milwaukee campus volunteered for the study that was run between February and May 2020. Half received access to the app at the start of the study for 6 weeks (intervention group), and the other half did not gain access until the 6 weeks passed (control group). Outcomes were assessed at baseline (T0), at the midpoint (T1), and the end of the study (T2). Outcome measures included basic demographics (T0), the Depression, Anxiety, and Stress Scale - 21 Items (DASS-21) (T0, T2), the Medical Student Well-Being Index (MSWBI) (T0, T1, T2), the Healthy Minds Index (HMI) developed by Healthy Minds Innovations, Inc. (T0, T1, T2), Human Flourishing Index (T0, T2), Maslach Burnout Inventory (T0, T2), Self-Compassion Scale (SCS) (T0, T2), Insomnia Severity Index (T0, T2), perceived social support (PSS) (T0, T2), and connectedness (T0, T2). Completion and usage (measured as time spent in each module) of the app were collected and analyzed. Delta scores were computed for outcomes measured at T0 and T2, and repeated measures analysis of variance was conducted on measures collected at all 3 time points.

**Outcomes:** Fifty-six participants completed the midpoint survey (n = 28 in each group), and 48 individuals completed all 3 surveys (n = 25 in group 1, n = 23 in group 2). Overall, a significant improvement was found between T0 and T2 for the following outcomes: overall self-compassion scores (0.23, P < .01), PSS (2.98, P < .01), and overall human flourishing (0.46, P < .001). Participants in the intervention group had a significant mean increase in their mindfulness scores (subdomain of the SCS) between T0 and T2 (delta = 2.98, P < .01). The HMI and connections scores were significantly higher at T2 than the T1 or T0 (P < .05) regardless of group. Time and interaction between the intervention group and time was found (P < .01). MSWBI scores at T2 was significantly higher than T0 (P < .05). The interaction revealed the intervention group had significantly improved mean MSWBI scores at T1 from T0 compared to the control group. The control group had improved mean MSWBI scores at T2 from T1 or T0 compared to the intervention group. Overall, participants app completion ranged from 92% to 16% for the wellness attributes in the foundations module, followed by the awareness module (completion ~16%).

**Discussion:** MSWBI is a measure of psychological distress with a unique dimension of measuring dropout risk. Our results suggest that using the application improves MSWBI. The improvement in mindfulness (SCS subdomain) and connections (HMI) scores suggests a potential mechanism by which this improvement could be operating given the goals of the application.

**Significance:** The results of this study suggest that medical students may be supported through their first year of medical school training using the Healthy Minds Program app. Even during the COVID-19 pandemic, it was encouraging to find students improved on various health and well-being measures.

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**References**


**Starting Off on the Right Foot: Prevention Services for Med-1s**

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**Purpose:** The stressors associated with medical school result in mental health and/or academic challenges for some students. For instance, students report more mental health problems while in medical school than they do before beginning their medical education. Additionally, due to the difficulty and volume of content, many face academic challenges for the first time. This presentation will describe the acceptability of prevention programs for first-year medical students (Med-1s) from 2 medical schools.

**Approach:** At Ohio State University College of Medicine, a Cognitive Behavioral Therapy (CBT) Skills program was developed for Med-1s (N = 201). The program consisted of 4 mandatory modules. Topics addressed included: the cognitive model, Socratic questioning, mindfulness of thoughts, emotions, and physical sensations, and values and committed action. A modified version of the Treatment Acceptability/Adherence, which is a 7-point Likert scale ranging from strongly disagree (1) to strongly agree (7), was sent to students. The mean acceptability score was 6.5 for the first two modules and 6.4 for the last two modules. Students also provided qualitative feedback on the program, which was used to make revisions to future iterations. The program was well received, with 78% of students completing all modules and 92% of students reporting they would recommend the program to others.
after the first and fourth sessions to evaluate acceptability. At the University of Illinois College of Medicine–Rockford (UICOM), an optional Virtual Summer Book Club was provided for entering Med-1s. Participants reviewed Make It Stick: The Science of Successful Learning. Five small group sessions emphasized the importance of self-reflection to identify academic strengths and areas of opportunity, the science of learning, innovative learning strategies, and connecting with resources. An evaluation was sent to students after completion. Student Affairs CAREs is a program at UICOM that hosts events to encourage self-care. Events included a variety of wellness activities such as crafts, fun events, therapy dogs, yoga, and meditation. Outcome data were collected informally.

Outcomes: All 3 prevention programs received positive acceptability ratings formally and/or informally. On average, students agreed that the Universal CBT Skills program was effective in providing them with strategies to cope with stressors in medical school after session 1 (n = 44, x̄ = 5.86, s = 0.87) and session 2 (n = 25, x̄ = 4.84, s = 1.59). At the end of the program, students agreed that the program should be offered yearly (n = 25, x̄ = 5.36, s = 1.52). An evaluation of the book club (n = 15) indicated that 100% of students agreed that the programming helped them reflect on their study strategies. Further, 86.7% of students agreed that they were more aware of their strength as learners and 100% agreed that the book club helped them identify strategies for their Med-1 year. Finally, informal feedback indicated that students enjoyed and felt supported by the content provided through Student Affairs CAREs.

Discussion: Mental health and academic challenges are common during medical school. These challenges can result in academic failures, delayed graduation, and mental health problems. The development of programs to prevent these difficulties would likely be an optimal place to devote time and resources if these programs are accepted and lead to improved outcomes throughout medical school. Med-1s found the mental health, academic, and wellness prevention programs acceptable regardless of whether the program was mandatory (e.g., Virtual Summer Book Club). Given students find these programs acceptable, future research evaluating the efficacy of these programs in reducing academic and mental health problems throughout medical school should be conducted.

Significance: There is a paucity of data on mental health and academic prevention services for Med-1s. This presentation introduces data that indicate Med-1s find both mandatory and voluntary prevention programs acceptable laying the groundwork for future studies examining the efficacy of these approaches.

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References

Progression Toward a Competency-Based Assessment Paradigm

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Background and Purpose: The Association of American Medical Colleges Graduation Medical Education Competencies were adapted for use at Sidney Kimmel Medical College at Thomas Jefferson University (SKMC) as undergraduate medical education (UME) competencies. Ideally, moving to assessment of competencies would prepare UME students to succeed in residency programs across the nation. Moving from traditional clerkship to a competency-based assessment required us to develop and implement new competency-based assessment tools. To effectively combine and critically appraise student progress toward competence, we developed JeffCAT, a web-based central documentation system of student progress toward SKMC graduation competencies. The purpose of developing this tool was to evaluate the quality of our competency-based assessment paradigm.

Approach/Methods: To effectively combine and critically appraise student progress toward competence we developed JeffCAT, a web-based central documentation system of student progress toward SKMC graduation competencies. We also developed JeffDOT, a mobile app, designed to be used at the bedside: encouraging frequent microassessments. This longitudinal approach of competency-based assessment required an increase in the frequency of formative assessments across the continuum of learning. The SKMC Student Assessment Office in collaboration with the curriculum, clerkship, and course directors identified appropriate checklists, mapped each item on the checklist to competency, and documented results from formative and summative assessments in JeffCAT. The documentation led to tracking of student progress toward competence (i.e., milestones development) and evaluation of quality of competency-based assessment paradigm.

Results/Outcomes: Using the SKMC competency-based assessment tools, JeffDOT and JeffCAT, we tracked the Class of 2021’s progress toward graduation competence. The number of SKMC assessments increased by 36%, in third and fourth years. We increased the number of bedside assessments by incorporating observations via JeffDOT.