Background

- Resident physicians experience higher rates of depression and burnout compared to the general population.
- This has far-reaching consequences on mental health, learning, quality of patient care, personal and careers decisions, and the culture and community of training.
- Mindfulness-based interventions (MBIs) are effective at reducing stress and burnout.
- Mobile health delivery of MBIs is a potential solution for the accessibility and scalability challenges of in-person MBIs.
- The Center for Healthy Minds at University of Wisconsin-Madison have developed a mobile health MBI, The Healthy Minds Program (HMP), that has been shown to reduce distress in high-stress populations including teachers and firefighters.

Hypothesis:

- The HMP intervention will lead to reductions in stress and burnout, while improving overall well-being and professional fulfillment among resident physicians.

Methods

- Prospective observational study of a 4-week MBI using the HMP app
  - Participants: resident physicians at UW-Madison
  - 17 residency departments contacted, 11 participated
- Intervention:
  - The Healthy Minds Foundation Course comprises an introduction and four modules based on pillars of a well-being framework: Awareness, Connection, Insight, and Purpose.
- Each module includes brief (as little as 5 minutes) lessons and guided mindfulness practices.
- Participants were asked to engage in the app daily for 4 weeks. At the end of the intervention, participants were given access to the year-long Healthy Minds Program.

Assessments:

- Stanford Professional Fulfillment Index (PFI) – measures burnout and professional fulfillment.
- World Health Organization Well-Being Index (WHO-5) - mental health and well-being.
- Time Points: pre-intervention, post-intervention: 4-week, 12-week, and 24-week follow-ups.

Table 1: Summary Demographics at Baseline

<table>
<thead>
<tr>
<th>Age (mean ± SD)</th>
<th>Overall (n=139)</th>
<th>Surgery* (n=59)</th>
<th>Non-surgery** (n=88)</th>
<th>p-value†</th>
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<tbody>
<tr>
<td>Post-Graduate Year (PGY)</td>
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<tr>
<td>PGY 1 (%)</td>
<td>27 (19.4)</td>
<td>11 (22.0)</td>
<td>16 (18.0)</td>
<td>0.04</td>
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<tr>
<td>PGY 2 (%)</td>
<td>35 (25.2)</td>
<td>7 (14.0)</td>
<td>28 (31.5)</td>
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<tr>
<td>PGY 3 (%)</td>
<td>45 (32.4)</td>
<td>14 (28.0)</td>
<td>31 (34.8)</td>
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<tr>
<td>PGY 4 (%)</td>
<td>27 (19.4)</td>
<td>14 (28.0)</td>
<td>13 (14.6)</td>
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<tr>
<td>&gt;PGY 5 (%)</td>
<td>5 (3.6)</td>
<td>4 (6.0)</td>
<td>0</td>
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</table>

Gender (Woman %): 83 (60.1) 36 (72.0) 47 (53.4) 0.72
Non-Hispanic White ( %): 108 (77.7) 38 (76.0) 70 (78.7) 0.03
His of Meditation (%): 38 (27.3) 19 (38.0) 19 (21.4) 0.03
Currently Meditate (%): 16 (11.5) 9 (18.0) 7 (7.9) 0.03

Figure 1: Change in Perceived Stress over Time

There was a statistically significant decrease in perceived stress from baseline at all follow-up points.

Figure 2: Change in Burnout over Time

There was a statistically significant decrease in burnout from baseline at 4- and 12-week follow-up.

There were no significant differences in change in outcomes between surgery and non-surgery specialties.

Figure 3: Change in Well-being over Time

There was a non-significant increase in well-being from baseline at all follow-up points.

Figure 4: Change in Professional Fulfillment over Time

There was a non-significant increase in professional fulfillment from baseline at all follow-up points.

Conclusion & Future Directions

- The HMP app reduces perceived stress and burnout in residents.
- It may increase well-being and professional fulfillment in residents.
- Further analysis will include app usage, correlation of outcomes with time spent on app, and demographic differences.
- This preliminary data supports future research in studying the use of the HMP in a multi-institutional, randomized clinical trial.

Acknowledgements

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