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Creating Anatomical Visualizations for Mindfulness Based Education

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Many breathing techniques in mindfulness meditation education are taught through live demonstrations or audio/video recordings. Being able to describe how to breathe through these demonstrations may seem unnecessary and self-explanatory, as breathing is an automatic process. However, many of the breathing techniques used in mindfulness education, such as thoracic or diaphragmatic breathing, require mindfulness students to have an understanding of the thoracic and abdominal muscles used during inhalation and exhalation.

A study at the University of Illinois at Chicago (UIC) aimed to improve the compliancy of deep breathing and mindfulness meditation practice for college students in order to reduce stress. With a thorough investigation of research on college student stress levels, mindfulness education, mindfulness-based applications (MBAs), multimedia design for education, and anatomical awareness, an online interactive program was designed to teach college students the respiratory anatomy relevant to the breathing techniques utilized in mindfulness-based stress reduction (MBSR). Specifically, this interactive program, Mindful Breathing Anatomy, focused on diaphragmatic or belly breathing, a skill that mindfulness students practice for relaxation and stress reduction purposes. This study also aimed to have college students walk away from the introduction to mindfulness education with certainty about their own bodies and the capability of managing stress reduction, on their own time. In the MBSR workshops for college students, the mindfulness curriculum is normally taught verbally and with exercise demonstrations performed by the instructor. With this interactive program, students were guided through mindfulness and respiratory anatomy learning modules, containing text and illustrations to reveal the respiratory anatomy underneath the skin. These learning modules were designed to allow students

time to reflect on their own internal anatomy when practicing diaphragmatic breathing. To test the effects of the interactive program on student compliancy to routine mindfulness practice, students participating in the study were first assigned to control and intervention groups. Both groups self-tracked and reported their at-home practice each week. However, intervention group members had access to the interactive program in week 1 of the study, while the control group did not get access until week 3. At the end of the study in week 4, students provided qualitative feedback of their experience with the study and the interactive program itself.

Some limitations in this study included a limited sample size of voluntary participants from the study's target population, which made it difficult to concretely answer this study's question. However, some of the data collected from this study showed some positive examples of students' compliance to practicing belly breathing after their interaction with the online interactive program. Additionally, some data showed positive self-reported feelings of motivation to practice mindfulness after learning about the respiratory anatomy associated with diaphragmatic breathing. Ultimately, future studies need to be done including larger sample sizes in both intervention and control groups to analyze the necessity of anatomical visualizations in MBSR education. However, the creation of this study's research stimulus supported the growth of mental health and wellness education materials accessible for college students who may feel they need this support.

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Conflict of Interests

No conflict of interests.

