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**Mindfulness Based Stress Interventions in
Physician Assistant Programs
Lucas Vance, ATC, PA-S**

Abstract

Mindfulness based interventions (MBI) have been used successfully in a variety of venues from the treatment of chronic pain to reducing stress in the workplace. The benefits of MBI programs that have been studied range from self-reported anxiety, depression, and empathy levels to levels of cortisol¹ to amygdala changes seen on magnetic resonance imaging.² MBI programs have been studied in pre-medical, medical, and graduate schools, as well as, nursing programs, and generalized healthcare cohorts.

Introduction

In the west, the use of mindfulness has been heavily influenced by Jon Kabat-Zinn who created the highly utilized and researched protocol for Mindfulness Based Stress Reduction (MBSR). He defines mindfulness as “the awareness that emerges through paying attention on purpose, in the present moment, and nonjudgmentally to the unfolding of experiences moment to moment.”³ Another interpretation of the term provided by Brown et al is explained as “Mindfulness is a quality of consciousness, characterized by non-judgmental focused awareness of present moment experiences, thoughts, and emotions.”⁴

MBIs are specific techniques that are designed to make the participant more mindful at any given time. These interventions include, but are not limited to deep breathing, body scans, and different forms of yoga and meditation that all focus on heightening one’s awareness and experience of the present moment as a cornerstone of the practice. MBIs can be as simple as keeping a daily journal or as intensive as an eight-hour silent retreat. While there are many interventions, the purpose of this paper is to show that a program consisting of MBIs can address the stress inherent in a physician assistant (PA) education program.

The curriculum required for PA school is rigorous and requires a fast-paced didactic portion followed by a full year of clinical experience in a wide variety of fields of medicine. This two to two and a half year gauntlet including a national certifying board exam makes becoming a PA a demanding task for even the most talented of students. In a study comparing perceived stress among medical, physician assistant, and nursing students, it was found that PA students have the highest rate of depression and medical symptoms.⁵ Studies also show that PA students have higher levels of stress than the general population. In an attempt to manage their rising stress levels, they often use unhealthy coping mechanisms such as self-distraction, venting, and self-blame to attempt to manage stress.⁶ As observed by Kuhn et al in a systematic review of stress in PA education, specific studies regarding PA programs is lacking, but an acceptable surrogate can include utilizing studies that have been successful within medical schools.⁷

Multiple studies show that medical students are at a higher risk of burnout,⁸ stress,⁹ and severe depression¹⁰ compared to the general population. Introducing mindfulness based practices into medical school programs have been shown to reduce stress and cortisol levels.¹ Mindfulness based programs have been shown to also successfully reduce depression for a variety of students, not limited to individuals enrolled in medical school.^{11,12,13} Studies by Carmody et al show that MBIs reduce physical symptoms like those shown to be associated with PA students.¹⁴

There are numerous examples that utilize MBIs to reduce perceived stress for both healthcare providers and their patients. A large number of early studies in this field found a statistically significant reduction of stress characteristics for patients suffering from the effects of chronic and severe diseases and increased ability to cope.¹⁵ For example, multiple studies endorse MBIs as a beneficial intervention to improve the mental health of cancer patients.¹⁶ Therefore, the skills learned in a MBI course as a student are not only beneficial for their own

mental health in their future career, but these skills can also be taught and shared with their patients for their benefit.

Methods

In researching the implementation of MBIs in PA education, two studies were identified that used MBIs in a similar setting (medical schools) and a similar population (first and second year medical school students). These two studies implemented Mindfulness Based Stress Reduction (MBSR). This is a MBI that requires extra training and certifications and is an eight week course. A third study was reviewed that implemented a custom MBI program as an elective for both pre-medical and medical students.

Study 1

Mindfulness based stress reduction for medical students: optimizing student satisfaction and engagement by Aherne et al.

This study measured student satisfaction for first and second year medical students completing a stress reduction module. It used a seven week MBSR course which was mandatory for first year students and optional for second year students. The study found that the optional course was associated with both increased student satisfaction and positive feedback while students in the mandatory course were less satisfied. The analysis revealed that both groups of students were satisfied with the course and found it to be beneficial in conjunction with their coursework. Students were quoted about the benefits of the course as one student remarked, "The course has helped me beyond these 7 weeks & I am grateful for the reference."

Problems with this study include the lack of quantitative data to validate the effects of the course. The questionnaire format rates the satisfaction with the course itself, but it did not address specific symptoms like anxiety, depression, or other modifiable factors that MBI seek to

mitigate. While students commented feeling less stressed, it cannot be quantified without using a scale or rating system. Other student feedback included using less discussion and more practice for the lessons taught in the program to allow for a better understanding of what was being taught. Overall, students were satisfied with both the mandatory and optional courses. Students in both groups commented on the perceived benefit of completing the course despite the time demand.

Study 2

The study Mindfulness-Based Stress Reduction Training is Associated with Greater Empathy and Reduced Anxiety for Graduate Healthcare Students by Barbosa et al.

This study compared anxiety and empathy scores in healthcare students completing an MBSR course and a matched control group. The study consisted of 27 total healthcare students including five PA students. Thirteen students completed an eight week MBSR course and were compared to a control group who did not complete the course. At both the completion of the course and three weeks post, 85% of students completing the MBSR course improved their anxiety by one category on the Burns Anxiety Inventory. The Jefferson Scale for Physician Empathy (JSPE) was used at the baseline and was re-administered at weeks eight and eleven. Students in the MBSR course showed a significant increase in empathy at eight weeks, however, it was not sustained. Interestingly, there was an exam period at the twelve week mark for all students. The Maslach Burnout Inventory was also utilized but found no significant difference between the groups. Overall satisfaction of the course was rated as 4.70 out of 5, with 5 being excellent.

Overall, students in the MBSR course showed a decrease in anxiety and increase in empathy compared to control group at the completion of the course. However, three weeks after the course only a decrease in anxiety remained. Some drawbacks of this study were that it

included a small sample size since it was only a pilot study. While the study did show a vast improvement in all fields tested at different points, it is difficult to extrapolate this data to a larger population.

Study 3

Effects of Mindfulness-Based Stress Reduction on Medical and Premedical Students by Shapiro et al.

This study featured only pre-medical and medical students interested in participating in a stress reducing course. With both the experimental and control groups, this led to only thirty-seven students who received the intervention. The intervention included a seven-week program consisting of a two and a half hour session each week and daily home exercises. The program itself focused on three main tenets; sitting meditation, body scan, and Hatha yoga. Sitting meditation focused on awareness of body sensations, thoughts, and emotions while engaging deep breathing techniques. The body scan was comprised of a progressive movement of one's focus and attention on a specific body part, typically starting at the toes and moving upward towards the head. Hatha yoga focused on stretching and poses that created a better awareness of body sensations and increased strength and balance.

Results measured were empathy, psychological distress, depression, state and trait anxiety, and spirituality. Daily journals were used to measure compliance with meditation practices. The experimental group showed less depression, less state and trait anxiety, and an increase in empathy and spirituality.

While this is the largest sample size of the reviewed studies, compared to other research, this still may be considered a small sample size. Many efforts were taken to eliminate bias amongst students in the sample. This included changing the experimenters who collected

the surveys in order to discourage students from writing positive reviews to please faculty members. Regardless of this, the researchers acknowledge that there may be a placebo effect since it is nearly impossible to blind a stress reduction course. Another drawback is that this is from 1998. Many advancements have been made in education in the last two decades, but the framework of the course prescribed in this particular study remain mostly unchanged.

Discussion

A major limitation to exploring whether MBI based programs would be beneficial in PA education is the lack of original research on the subject. There is a lack of research in MBI or MBSR programs in PA education. Only five PA students, three of which were controls, are featured in the articles reviewed in this paper. Not only is there a lack of research in successful stress management, there is a surprising lack of research into stress, anxiety, and depression in PA education. As other authors pointed out, there only exists research into these topics for medical and nursing school students. These studies are all that can be substantiated to form the basis for research into PA education until original research takes place.

Implementing a MBI program into the PA education program faces many challenges. The demand on one's time and effort in PA school leaves very little room for additional requirements without adding to the overall stress level, regardless of its benefit. As shown in Adherne et al, an optional course leads to greater satisfaction with the program, as well as increased and sustained positive outcomes;⁷ this is probably influenced by two mechanisms. Firstly, the students who believe they would not benefit from an MBSR program elected not to participate. Secondly, the extra time required to complete an MBSR course can be too much for some students to balance. For example, the MBSR course used in the Barbosa et al study required students to attend eight weekly classes which were two and a half hours each, an eight hour day

long silent retreat, and complete daily home assignments of 35 minutes of formal practice and 5-15 minutes of informal practice.¹⁸ Over the eight week course, this would equal approximately 65 hours of additional work for each student.

Conclusion

The process of becoming a PA, while formidable, is also inherently stressful, due in part to the highly rigorous coursework that takes place in a time limited environment. Creating balance and carving time for self-care can be difficult. Practicing as a PA can also come with its unique challenges that the demands of one's chosen career path requires. MBIs address the stress inherent in healthcare education and provides a framework for a practitioner to combat the effects of stress and a foundation to build resiliency. Providers who find benefit in these interventions that consist mainly of outlined or guided practices to be routinely followed can easily transmit and disseminate these practices to their patients. This can improve their ability to cope and manage their own mental health. A profession in healthcare is stressful but may pale in comparison to the lived experience of their patients dealing with acute and/or chronic disease, as it is inherently stressful, and may even be a traumatic experience in an individual's life. The ability of a healthcare provider to calmly and compassionately approach these patients based on the provider's ability to self-regulate may offer added benefits by de-escalating the situation and soothing the patient which is based off a principal called transference.²⁰

The level of burnout in the PA profession is high compared to other professions.²¹ Studies show that one in eight PAs say they considered quitting their job due to stress.²² An ideal PA education program will not only provide the medical knowledge and technical skills to make an excellent healthcare providers but will also prepare them to care for themselves. A PA program has the opportunity to address the compounding demands and inherent stress that

schooling and work in the profession entails. This can be done by empowering students with the tools and knowledge to reduce stress, increase mental health and clarity, and find inner peace and outer balance.

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