

MINdl: Mindfulness Instruction for New Interns

Christine C. Cheston, MD*, Colin M. Sox, MD, MS, Catherine D. Michelson, MD, MMSc, Yarden S. Fraiman, MD

*Corresponding author: christine.cheston@bmc.org

Abstract

Introduction: Trainee burnout has reached epidemic proportions and is increasing among physicians compared to non-health care professionals. Burnout is associated with depression and lower empathy, poor patient adherence to medical plans, and early physician retirement. Mindfulness is the quality of being nonjudgmental and present and has been shown to decrease physician burnout. Implementation of mindfulness curricula may decrease trainee burnout. **Methods:** Using Kern's six-step approach, we developed an easy-to-implement, facilitator-friendly mindfulness curriculum for pediatric interns. Curricular sessions were held monthly during preexisting 1-hour didactics over 6 months, facilitated by individuals without mindfulness experience. Learners were assessed on knowledge, attitudes, and behavior with postintervention surveys during a pilot in 2016. Qualitative data were used for curricular improvement resulting in the published curriculum. **Results:** Postcurriculum surveys from our pilot revealed that 69% of interns reported a more positive attitude toward mindfulness, while 62% reported having (1) greater knowledge about evidence supporting mindfulness, (2) improved knowledge on how to apply mindfulness techniques, and (3) the belief that techniques they had learned positively impacted their lives. Thirty-three percent endorsed using mindfulness techniques more frequently than they had prior to the start of the mindfulness curriculum. **Discussion:** Our novel curriculum provided longitudinal mindfulness training that meaningfully impacted trainee knowledge, behaviors, and attitudes. The curricular structure overcame the need for local topic experts and was feasible to implement within the confines of our complex program structure. Ongoing work will determine the impact of our curriculum on objective measures of burnout, empathy, and mindfulness.

Keywords

Mindfulness, Wellness, Well-Being/Mental Health, Burnout, Psychological, Pediatrics, Editor's Choice

Educational Objectives

By the end of this activity, learners will be able to:

1. Define mindfulness.
2. Explain the relationship between mindfulness and burnout.
3. Demonstrate an awareness of the evidence supporting mindfulness.
4. Report a more positive attitude toward mindfulness.
5. Employ mindfulness techniques more often in their daily lives.

Introduction

Burnout is the triad of emotional exhaustion, depersonalization, and feelings of inefficacy. It has been associated with higher rates

of provider depression, lower provider empathy, higher rates of perceived medical errors, poorer patient compliance with medical treatment plans, and high provider attrition from the medical profession.¹⁻³ In contrast, mindfulness is the quality of being nonjudgmental and present in the moment. Mindfulness has been shown to reduce provider burnout and increase provider empathy.⁴⁻⁸

Rates of burnout are increasing disproportionately among health care providers compared with other professions, representing a risk to the integrity of the medical workforce.^{2,9} Pediatric trainees are at equivalently heightened risk, with high rates of burnout at the start of their internships that increase rapidly.¹⁰ Recent literature suggests that rates of burnout in the pediatric trainee population are greater than 50% in each year of training and, not surprisingly, that burnout is associated with stress and sleepiness specifically, both of which may be affected by mindfulness practice.¹¹ For this reason, the American Association of Pediatrics aligned with the Accreditation Council for Graduate Medical Education in a 2014 statement that emphasized the

Citation:

Cheston CC, Sox CM, Michelson CD, Fraiman YS. MINdl: Mindfulness Instruction for New Interns. *MedEdPORTAL*. 2020;16:10933. https://doi.org/10.15766/mep_2374-8265.10933

need for systems-level change to address trainee burnout.¹² Mindfulness was the only evidence-based approach included in the statement that has been shown to reduce trainee burnout. However, competing educational priorities and a perceived need for topic expertise represent barriers to implementing mindfulness education.

Within this context, we undertook a needs assessment at our pediatric residency program, which confirmed growing rates of burnout and a desire for related formal curricula. Given the evidence supporting mindfulness, we sought a curriculum that would help our residents (1) better understand the rationale behind, (2) think positively about, and (3) consistently practice beneficial mindfulness techniques with the ultimate goal of ameliorating burnout. Our literature search yielded a growing but still limited body of GME work describing the effects of mindfulness curricula, with one recent review identifying only three total in-person mindfulness interventions with resident participants, none of which shared detailed curricula.¹³⁻¹⁶ Previously published *MedEdPORTAL* curricula have focused on different audiences (i.e., medical students) or on wellness and resilience more broadly^{17,18}; some consist of only a single session or shorter-term interventions.^{17,19} Among published resources, all lacked an educational framework supporting the longitudinal, integrated practice of mindfulness techniques in the everyday lives of busy residents that we felt would be critical for sustained behavioral change for trainees.

Given this gap, we used Kern's six-step approach²⁰ to guide the development, implementation, and assessment of a longitudinal mindfulness curriculum: Mindfulness Instruction for New Interns (MINdl). We utilized the conceptual framework of a spiral curriculum and Knowles schema of adult learners to build a curriculum that begins with a session focused on the rationale for mindfulness as a burnout-prevention tool and a curricular model in which each session builds on prior lessons.^{21,22}

We chose to target pediatric interns, a population at the beginning of graduate medical training with much to gain from preventative antiburnout strategies. Our needs assessment led us to maximize applicability for trainees by addressing certain specific areas of the workplace that could increase burnout, such as distractions, conflicting responsibilities, and poor communication. As a result of these considerations, we created an easy-to-implement, facilitator-friendly, and low-cost educational mindfulness innovation, which we evaluated at our own institution among a cohort of pediatric interns to demonstrate feasibility, acceptability, and learner outcomes.

Methods

Our needs assessment survey was conducted among all trainees enrolled in our large, pediatric residency program in September 2015. Of the 137 residents who responded, 83% were open to a curriculum aimed at preventing burnout within their residency training. Given the documented benefits of mindfulness in relation to burnout, we developed, implemented, and evaluated our pilot mindfulness curriculum during the winter of 2015 using postintervention surveys measuring residents' knowledge, attitudes, and behaviors related to the curriculum. Based on feedback from this pilot, we made iterative improvements resulting in the current curriculum, which was continued based on positive feedback and the decision by residency leadership to allocate coveted noon conference didactic time to MINdl for the 2018 and 2019 academic years.

MINdl targeted interns, who, in their daily lives, face multiple evolving stressors and destabilizing forces as they transition into an often-vulnerable new role as independent physicians. Sessions were delivered successfully to small and large groups of anywhere from six to 30 interns at a time; facilitators reviewed the space and materials needed to conduct sessions for larger groups ahead of time via the MINdl Facilitator Guide (Appendix A) and Session Materials Guide (Appendix B). The sessions were written so that anyone could facilitate, even those without prior mindfulness experience. Chief residents, supervising residents, faculty, and hospital administrators have all successfully facilitated this curriculum.

MINdl included one 30-minute and six 1-hour lunchtime sessions (Table 1). The first session was ideally delivered prior to the start of clinical work during intern orientation, with six additional sessions delivered over the subsequent 6 months (approximately one session per month). However, this time line was flexible and was sometimes adapted based on preexisting protected time within our individual residency's didactic schedule.

The first session utilized a 30-minute PowerPoint presentation (Appendix C) to review the data defining and outlining the growing risk of burnout among medical professionals and share the scientific rationale and evidence for implementing mindfulness as a strategy for burnout prevention. With this session, facilitators garnered buy-in for the curriculum overall. Each subsequent session had three components: (1) built-in protected time to eat and socialize, (2) practice of an active mindfulness exercise, and (3) a facilitated reflection about using mindfulness in the workplace. Participation was encouraged but always voluntary. Anecdotally, the most

Table 1. Curriculum Session Content

Session Title	Session Aim	Curriculum Description	Take-Home Skill for Real-Life Application
Session 1: The Science of Burnout and Mindfulness	To provide participants with background on rates of burnout within medicine, an overview of mindfulness, and data supporting the use of mindfulness to prevent burnout.	12:00-12:30: Share evidence to support mindfulness through brief didactic PowerPoint presentation	Recommend specific, free smartphone mindfulness app for home use.
Session 2: Mindfulness and Awareness of the Physical Body	To provide participants with a mindfulness strategy to increase awareness of their physical state to identify stress and tension.	12:00-12:19: Social lunch 12:19: Minute of silence to transition from lunch to mindfulness activity 12:20-12:25: Introduction to body scan exercise 12:25-12:45: Body scan exercise 12:45-1:00: Think-pair-share activity to discuss reactions to activity and practical application	Email instructions for body scan to residents and encourage them to use at bedtime as well as to check in with themselves while at work.
Session 3: Mindfulness and Awareness of the Mind and Thoughts	To provide participants with a mindfulness strategy to observe their thoughts, especially in times of burnout, stress, and racing thoughts.	12:00-12:19: Social lunch 12:19: Minute of silence to transition from lunch to mindfulness activity 12:20-12:25: Introduction to Leaves on a Stream meditation 12:25-12:40: Leaves on a Stream guided meditation 12:40-1:00: Think-pair-share activity to discuss reactions to activity and practical application	Email Leaves on a Stream meditation to residents with encouragement to take one task at a time at work and, when distracted, practice saying, "I will return to that thought when I complete the task."
Session 4: Mindfulness and Awareness of the Mundane	To provide participants with a strategy to bring mindful living into small moments of the day (i.e., washing hands, walking to patient room) and a gateway for mindfulness in more complex situations.	12:00-12:19: Social lunch 12:19: Minute of silence to transition from lunch to mindfulness activity 12:20-12:30: Introduction to walking and sitting meditations 12:30-12:40: Walking and sitting meditations 12:40-1:00: Think-pair-share activity to discuss reactions to activity and practical application	Email a mindfulness breathing exercise (10 mindful breaths) that can be completed by residents.
Session 5: Mindfulness and Awareness of Chaos	To provide participants with a strategy to stay present and avoid becoming distracted in complex situations and chaotic environments.	12:00-12:19: Social lunch 12:19: Minute of silence to transition from lunch to mindfulness activity 12:20-12:25: Introduction to mindfulness ball activity 12:25-12:40: Ball activity 12:40-1:00: Think-pair-share activity to discuss reactions to activity and practical application	Encourage participants to remember the feeling of mindfully completing one dedicated task and to utilize the techniques they learned.
Session 6: Mindfulness and Awareness of Communication	To provide participants with a strategy to remain mindful while interacting with others and to reflect upon improved communication with mindfulness techniques.	12:00-12:19: Social lunch 12:19: Minute of silence to transition from lunch to mindfulness activity 12:20-12:30: Introduction to mindful communication 12:30-12:35: Writing exercise 12:35-12:45: Distribution of narratives and discussion in pairs 12:45-1:00: Group discussion and lessons learned	Email residents the Insight Dialogue to be used in at least one difficult communication during the week.
Session 7: Mindfulness to Prevent Burnout	To reflect on lessons learned in the curriculum and specifically discuss how mindfulness can decrease burnout.	12:00-12:19: Social lunch 12:19: Minute of silence to transition from lunch to mindfulness activity 12:20-12:25: Overview of burnout and mindfulness 12:25-12:45: Body scan exercise 12:45-1:00: Group discussion and reflection on body scan and curriculum	Suggest residents reflect on their current state of burnout and situations in which they can apply mindfulness techniques to reduce burnout.

common reasons for nonattendance were either being postcall or competing clinical demands. As per our standard residency policy, supervising residents and fellows were asked to silence phones and pagers, but this was not rigorously enforced.

Each exercise had unique materials and audiovisual needs, as outlined in Appendix B. These ranged from access to a computer with internet, audio, and PowerPoint projection capabilities to more-specific materials such as pens, paper, envelopes, or stress balls.

The sessions and corresponding appendices are listed below:

- The Science of Burnout and Mindfulness (Appendix C: PowerPoint presentation).
- Mindfulness and Awareness of the Physical Body (Appendix D: facilitator preparation video and Appendix E: session audio).
- Mindfulness and Awareness of the Mind and Thoughts (Appendix F: session audio).
- Mindfulness and Awareness of the Mundane (Appendix G: facilitator preparation audio).²³

- Mindfulness and Awareness of Chaos.
- Mindfulness and Awareness of Communication (Appendix H: PowerPoint presentation and Appendix I: facilitator preparation audio).²⁴
- Mindfulness to Prevent Burnout (Appendix E: session audio).
- Optional: 10-Minute Mindfulness Refresher (Appendix J: session audio).

Some sessions required participants to have space to spread out or walk around the room while others were predominantly delivered with participants seated at tables. Our experience with the curriculum clarified that it was important for participants to feel comfortable and safe within the physical space during each session. The most successful sessions were delivered in a closed room dedicated to implementing the mindfulness session where nonparticipants (such as other residents or staff) were absent and pagers and phones were silenced.

An anonymous paper survey assessing baseline demographic and mindfulness experience and practice data was administered prior to the first MINdl session. We distributed a postcurriculum paper survey consisting of multiple-choice questions designed to measure impact on our stated objectives immediately after the completion of the final MINdl session 6 months later. To develop these surveys, initial drafts were piloted among a group of senior and chief residents and then modified based on feedback related to clarity and question content. We collected qualitative data at the conclusion of each session using a two-question plus/delta activity to elicit feedback regarding what worked well (i.e., plus) and what could be improved (i.e., delta). Two research team members independently coded responses and then jointly reviewed and combined codes into a final codebook, reaching consensus through discussion about disagreements.^{25,26} A third team member reviewed a randomly generated sample of 20% of the plus and delta codes for external validation. Codes were then iteratively organized into categories and themes. Institutional review boards at both institutions affiliated with the Boston Combined Residency Program deemed this study exempt.

Results

Fifty interns consented to participate in the study. All 50 interns completed the baseline demographic survey (100% response), and 84% (42 out of 50) completed the postcurriculum survey 6 months later.

Quantitative Results

At baseline, 50% of interns reported having participated in some prior mindfulness training, and 36% endorsed weekly or monthly

mindfulness practice in the 12 months preceding intern year before curriculum implementation.

At 6 months after completion of the curriculum, 80% (34 out of 42) of interns reported attending at least three of the seven mindfulness sessions. Sixty-nine percent (29 out of 42) of interns had a more positive attitude toward mindfulness, while 62% (26 out of 42) reported yes to having (1) greater knowledge about the scientific evidence behind mindfulness and burnout, (2) improved knowledge on how to apply mindfulness to their lives, and (3) the belief that the mindfulness techniques they learned had positively impacted their lives. Finally, 33% of subjects (14 out of 42) endorsed using mindfulness techniques more frequently in their lives after the curriculum, compared with the frequency they had used related techniques before exposure to the curriculum.

Qualitative Results

We collected 102 plus and 91 delta responses. Six themes emerged from analysis of plus responses, and eight emerged from delta responses.

Plus themes highlighted the positive qualities of the curriculum. First, residents saw curricular implementation as a demonstration of the residency's commitment to physician wellness. Residents appreciated the protected time to develop wellness skills, as well as the opportunity to share their experience with peers. Sessions offered cognitive benefits and a chance to escape from stressful work environments as well as practical, applicable skills for interns' everyday lives. Samples of quotes arranged by category included the following:

- Positive notes on the residency prioritizing wellness:
 - "Appreciate the program prioritizing mindfulness."
 - "Clear program emphasis on wellness."
- Cognitive benefits of the curriculum included increased energy, relaxation, focus, and calm:
 - "Relaxing, skill building for stress management."
- Valuable to escape stressful clinical work and engage in social time with peers:
 - "Chance to relax during a busy day with friends."
- Positive feedback was both global and specific, with references to distinct session characteristics:
 - "Good skill to use 'Leaves [on a Stream]' in the future."
- Enjoyed learning new skills that were applicable to their lives:
 - "Demonstrated a useful tool that we can apply on our own."
- Appreciated a safe space in which to share experiences:
 - "I liked the reflection and hearing other people's stories."
 - "Safe space to share stories."

Delta themes highlighted some of the challenges in creating a one-size-fits-all curriculum, including delivering a curriculum that catered to diverse baseline participant skill levels, learner needs, and preference for curricular structure. Interns emphasized the importance of a conducive physical environment and recommended expanding the curriculum to include more sessions or tools for home practice. Some participants, on the other hand, had no complaints. Samples of quotes arranged by category included the following:

- Qualities of the environment, participants' state of mind, and lack of preparation detracted from the experience:
 - "Felt vulnerable with everyone here."
 - "Phones, pagers distracting!"
- Some had no complaints, and only one intern mentioned preference for typical didactics:
 - "Plus: that we did this, Delta: that we don't do this every day."
- Interns differed in desired level of session complexity:
 - "Too meta/cognitively challenging."
 - "Maybe more complexity to really mimic our daily clinical stresses."
- Requested adaptations for an audience with diversity of experience:
 - "Too many assumptions that we do not do this [already]."
- Desired practical strategies for incorporation of mindfulness skills into their everyday lives:
 - "Would have loved to hear more suggestions on incorporating it into day-to-day life."
- Some preferred shorter mindfulness components or more time for socializing:
 - "Would have liked more social time before starting (good for mental health)."

Discussion

These findings demonstrate the feasibility, acceptability, and value of implementing a novel, seven-session mindfulness curriculum in a pediatric residency program. Prior to our curriculum, half of residents reported no prior experience with mindfulness despite its many demonstrated positive benefits. After the curriculum, residents' understanding of mindfulness and their intentions to use it to prevent burnout were higher, and their attitudes toward mindfulness were more positive.

One important feature of our curriculum is that it was designed by a pediatric intern for other interns. This unique perspective in creating sessions directly applicable to the busy lives of residents was an invaluable one that allowed the sessions to achieve

maximal pertinence and practicality. Furthermore, this quality of the curriculum was lauded in our plus/delta resident feedback.

Our curriculum was low cost, could easily be incorporated into previously scheduled didactic time, and required minimal preparation to deliver. Facilitators needed no prior expertise or experience in mindfulness, and anecdotally, facilitators enjoyed the experience so much that they proactively asked to be involved in subsequent years. An additional, unanticipated consequence of the curriculum above and beyond the benefit of mindfulness techniques themselves was residents' perception of a greater investment and buy-in into resident wellness by the residency program overall; this enhanced sense of good will likely positively benefit interns' well-being in other unmeasured ways. Lastly, while designed specifically for interns within our own large pediatric residency program, the content is pertinent to and could be implemented for residents in any size program or clinical specialty.

Our qualitative plus/delta data were critical to further elucidating qualities of mindfulness curricula that are important to resident satisfaction, including optimizing environment and content, quality of group work and facilitation, and the importance of shared reflection. Experience with this curriculum over time has shown that identifying a physical location with relative privacy and minimized distractions is important to interns' comfort and full participation; at our home institution, interns were sometimes interrupted with urgent clinical tasks mid-session. Thus, we recommend asking supervisors or attendings to hold pagers and phones, if possible, and rigorously enforcing this policy. Additionally, while those implementing our curriculum may find it appealing to bypass the first 20 minutes of social time to shorten the sessions, we found this transition time critical to ensuring all participants were ready to engage actively in the subsequent mindfulness activities and discussion. It also allows latecomers to participate fully. While not a barrier at our own institution, finding enough facilitators for frequent monthly sessions may be challenging at other institutions. Partnering with adjacent residency programs or representatives from a GME wellness program may afford a larger pool of interested facilitators who can flex in and out throughout the curriculum. Lastly, interns consistently asked for more sessions and resources to support mindfulness practice on a regular basis throughout the year. We addressed this issue by interpolating a 10-minute mindfulness refresher midway between MINDI sessions for all residents during regularly scheduled lunchtime didactics (Appendix J). Our institution also recently invested in access to the Headspace smartphone app for all trainees and employees. Others may

choose to teach additional mindfulness techniques by extending the curriculum beyond seven sessions as their curricular structure allows.

Our pilot study is limited by its single-center design and small sample size. Furthermore, our study utilized self-reporting of the understanding of and intention to practice mindfulness, as opposed to objective measures. Implementation of the curriculum requires a minimum amount of regularly scheduled protected time within a residency didactic curriculum, which some programs may find difficult amidst an already compressed schedule. Lastly, our study was not powered to detect true differences in rates of burnout before or after the intervention. Of note, our educational team is currently conducting a national, randomized controlled trial to better elucidate how this curriculum can affect objective measures of burnout, mindfulness, and empathy among pediatric trainees. We are hopeful that feedback and data from this trial will allow us to better understand the strengths and limitations of the curriculum as it is applied in different residency settings. Despite these limitations, our study succeeds in demonstrating our intervention's feasibility, acceptability, and positive impact on residents.

MINDl is an easy-to-implement, facilitator-friendly, and low-cost educational mindfulness innovation that takes into account competing educational priorities, limited time, and potentially limited topic expertise while positively impacting wellness among pediatric trainees. Enhancements to this resource in the future will focus on finding sustainable strategies to optimize the physical learning environment, increasing opportunities for shared reflection among residents, and creatively supporting mindfulness practice beyond just seven sessions. Although mindfulness is not a one-size-fits-all solution to burnout prevention, it can be a powerful intervention for many to improve wellness and resilience and ameliorate burnout. Implementation of similar curricula elsewhere holds great potential to arm house staff with a powerful tool to achieve a sustained reduction in burnout.

Appendices

- A. MINDl Facilitator Guide.docx
- B. Session Materials Guide.docx
- C. The Science of Burnout and Mindfulness.pptx
- D. Mindfulness - Being Fully Awake in Our Own Lives.mp4
- E. Body Scan.mp3
- F. Leaves on a Stream.mp3

- G. Sitting Meditation.mp3
- H. Mindfulness and Awareness of Communication.pptx
- I. Intro to Insight Dialogue Guidelines.mp3
- J. 10-Minute Mindfulness Refresher.mp3

All appendices are peer reviewed as integral parts of the Original Publication.

Christine C. Cheston, MD: Assistant Professor of Pediatrics, Department of Pediatrics, Boston Medical Center, Boston University School of Medicine

Colin M. Sox, MD, MS: Clinical Associate Professor of Pediatrics, Division of General Academic Pediatrics, Boston Medical Center, Boston University School of Medicine

Catherine D. Michelson, MD, MMSc: Assistant Professor of Pediatrics, Department of Pediatrics, Boston Medical Center, Boston University School of Medicine

Yarden S. Fraiman, MD: Clinical Fellow, Division of Newborn Medicine, Department of Pediatrics, Boston Children's Hospital

Acknowledgments

The authors would like to acknowledge Alexandra Coria, Sarah Wingarter, Valerie Jacobs, the chief residents of the Boston Combined Residency Program, and the program leaders across the country who have helped facilitate, participate in, and improve this curriculum.

Disclosures

None to report.

Funding/Support

Dr. Fraiman received funding from the Fred Lovejoy House-Staff Research and Education Fund and the Association of Pediatric Program Directors Special Projects Program.

Prior Presentations

Coria A, Fraiman YS, Cheston C, Allen E, Michelson C, Sox C. Designing, implementing and evaluating a mindfulness curriculum in a large pediatric residency program. Presented at: Association of Pediatric Program Directors Annual Spring Meeting Special Interest Symposium; March 2016; New Orleans, LA.

Ethical Approval

The Boston University Medical Center Institutional Review Board and the Boston Children's Hospital Institutional Review Board approved this study.

References

1. Dyrbye LN, Thomas MR, Massie FS, et al. Burnout and suicidal ideation among U.S. medical students. *Ann Intern Med.*

- 2008;149(5):334-341.
<https://doi.org/10.7326/0003-4819-149-5-200809020-00008>
2. Dyrbye LN, Shanafelt TD. Physician burnout: a potential threat to successful health care reform. *JAMA*. 2011;305(19):2009-2010.
<https://doi.org/10.1001/jama.2011.652>
 3. West CP, Huschka MM, Novotny PJ, et al. Association of perceived medical errors with resident distress and empathy: a prospective longitudinal study. *JAMA*. 2006;296(9):1071-1078.
<https://doi.org/10.1001/jama.296.9.1071>
 4. Krasner MS, Epstein RM, Beckman H, et al. Association of an educational program in mindful communication with burnout, empathy, and attitudes among primary care physicians. *JAMA*. 2009;302(12):1284-1293.
<https://doi.org/10.1001/jama.2009.1384>
 5. Beckman HB, Wendland M, Mooney C, et al. The impact of a program in mindful communication on primary care physicians. *Acad Med*. 2012;87(6):815-819.
<https://doi.org/10.1097/ACM.0b013e318253d3b2>
 6. Goodman MJ, Schorling JB. A mindfulness course decreases burnout and improves well-being among healthcare providers. *Int J Psychiatry Med*. 2012;43(2):119-128.
<https://doi.org/10.2190/PM.43.2.b>
 7. Shapiro SL, Schwartz GE, Bonner G. Effects of mindfulness-based stress reduction on medical and premedical students. *J Behav Med*. 1998;21(6):581-599.
<https://doi.org/10.1023/A:1018700829825>
 8. Goldhagen BE, Kingsolver K, Stinnett SS, Rosdahl JA. Stress and burnout in residents: impact of mindfulness-based resilience training. *Adv Med Educ Pract*. 2015;6:525-532.
<https://doi.org/10.2147/AMEPS88580>
 9. Shanafelt TD, Hasan O, Dyrbye LN, et al. Changes in burnout and satisfaction with work-life balance in physicians and the general US working population between 2011 and 2014. *Mayo Clin Proc*. 2015;90(12):1600-1613.
<https://doi.org/10.1016/j.mayocp.2015.08.023>
 10. Pantaleoni JL, Augustine EM, Sourkes BM, Bachrach LK. Burnout in pediatric residents over a 2-year period: a longitudinal study. *Acad Pediatr*. 2014;14(2):167-172.
<https://doi.org/10.1016/j.acap.2013.12.001>
 11. Kember KJ, Schwartz A, Wilson PM, et al. Pediatric Resident Burnout-Resilience Study Consortium. Burnout in pediatric residents: three years of national survey data. *Pediatrics*. 2020;145(1):e20191030.
<https://doi.org/10.1542/peds.2019-1030>
 12. McClafferty H, Brown OW. Section on Integrative Medicine; Committee on Practice and Ambulatory Medicine. Physician health and wellness. *Pediatrics*. 2014;134(4):830-835.
<https://doi.org/10.1542/peds.2014-2278>
 13. Bommarito S, Hughes M. Intern mental health interventions. *Curr Psychiatry Rep*. 2019;21(7):55.
<https://doi.org/10.1007/s11920-019-1035-y>
 14. Ireland MJ, Clough B, Gill K, Langan F, O'Connor A, Spencer L. A randomized controlled trial of mindfulness to reduce stress and burnout among intern medical practitioners. *Med Teach*. 2017;39(4):409-414.
<https://doi.org/10.1080/0142159X.2017.1294749>
 15. Verweij H, van Ravesteijn H, van Hooff MLM, Lagro-Janssen ALM, Speckens AEM. Mindfulness-based stress reduction for residents: a randomized controlled trial. *J Gen Intern Med*. 2018;33(4):429-436. <https://doi.org/10.1007/s11606-017-4249-x>
 16. Thimmapuram J, Pargament R, Sibliss K, Grim R, Risques R, Toorens E. Effect of heartfulness meditation on burnout, emotional wellness, and telomere length in health care professionals. *J Community Hosp Intern Med Perspect*. 2017;7(1):21-27. <https://doi.org/10.1080/20009666.2016.1270806>
 17. Aggarwal R, Deutsch JK, Medina J, Kothari N. Resident wellness: an intervention to decrease burnout and increase resiliency and happiness. *MedEdPORTAL*. 2017;13:10651.
https://doi.org/10.15766/mep_2374-8265.10651
 18. Steckler N, Young L, Ervin A. OHSU resiliency skills elective. *MedEdPORTAL*. 2015;11:10022.
https://doi.org/10.15766/mep_2374-8265.10022
 19. Pasarica M, Lee E, Lee M. Introduction to mindfulness: evidence-based medicine lecture and active session. *MedEdPORTAL*. 2016;12:10472.
https://doi.org/10.15766/mep_2374-8265.10472
 20. Kern DE, Thomas PA, Hughes MT, eds. *Curriculum Development for Medical Education: A Six-Step Approach*. 2nd ed. Johns Hopkins University Press; 2009.
 21. Taylor DCM, Hamdy H. Adult learning theories: implications for learning and teaching in medical education: AMEE Guide No. 83. *Med Teach*. 2013;35(11):e1561-e1572.
<https://doi.org/10.3109/0142159X.2013.828153>
 22. Harden RM, Stamper N. What is a spiral curriculum? *Med Teach*. 1999;21(2):141-143. <https://doi.org/10.1080/01421599979752>
 23. Kabat-Zinn J. *Full Catastrophe Living: Using the Wisdom of Your Body and Mind to Face Stress, Pain, and Illness*. Rev ed. Bantam Books; 2013:54-75.
 24. Kramer G. *Meditating Together, Speaking From Silence: The Practice of Insight Dialogue*. 8th ed. Metta Foundation; 2003:1-14.
 25. Barnett-Page E, Thomas J. Methods for the synthesis of qualitative research: a critical review. *BMC Med Res Methodol*. 2009;9:59. <https://doi.org/10.1186/1471-2288-9-59>
 26. Barbour RS, Barbour M. Evaluating and synthesizing qualitative research: the need to develop a distinctive approach. *J Eval Clin Pract*. 2003;9(2):179-186.
<https://doi.org/10.1046/j.1365-2753.2003.00371.x>

Received: June 11, 2019

Accepted: January 21, 2020

Published: July 31, 2020