# The Impact of Transcendental Meditation: Reducing Burnout and Enhancing Well-Being in Frontline Healthcare Clinicians During the COVID-19 Pandemic

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Article

## Abstract

Healthcare clinicians experience high rates of professional burnout, and there is increasing concern about the negative impacts of the COVID-19 pandemic on emotional well-being. Given the intense stress related to caring for COVID-19 patients, there is a need for practical, evidence-informed interventions that can help support clinician well-being. This study aimed to evaluate the feasibility and effectiveness of the Transcendental Meditation (TM) intervention in a sample of 32 healthcare clinicians who provided care to COVID-19 patients. Participants received formal instruction in TM and were encouraged to practice TM twice daily during the three-month study period. After one month, statistically significant improvements were seen for the burnout factor of emotional exhaustion, depression, anxiety, and mental well-being. After three months, these improvements were maintained with additional improvement in the burnout factor of personal accomplishment. The largest effect sizes were found for depression, mental well-being, anxiety, and emotional exhaustion. Participants reported high rates of daily TM practice, thereby supporting the feasibility of the approach for busy clinicians. This study contributes to the growing body of knowledge supporting TM as an effective practice to reduce burnout and improve well-being.

**Key Words:** Transcendental Meditation, burnout, healthcare clinician well-being, nurse well-being, resilience, meditation, self-care

**Healthcare clinician burnout is a national and international crisis.**

Healthcare clinician burnout is a national and international crisis (Morgantini et al., 2020). The World Health Organization (WHO) classifies burnout as an occupational phenomenon, conceptualized as resulting from chronic workplace stress that has not been successfully managed. The syndrome is characterized by feelings of energy depletion or exhaustion; increased mental distance from one's job, or feelings of negativism or cynicism related to one's job; and reduced professional efficacy (WHO, 2019). Low resilience, defined as difficulty coping with daily stressors and overcoming challenges, is also a critical determinant of burnout (Yilmaz, 2017).

Review of the literature reveals professional burnout as a growing concern for practicing physicians and nurses, often leading to decreases in productivity (Dewa et al., 2017), health (Vandenbroeck et al., 2017), work satisfaction (Shanafelt et al., 2015; Whitebird et al., 2017), and at times, departure from the profession they initially loved (Hamidi et al., 2018). Also of concern is the impact of clinician burnout on patient safety. A systematic review of studies related to resident burnout and patient safety reported that there is "moderate evidence that burnout is associated with patient safety" (Dewa et al., 2017, p. 14), and the negative impact of physician and nurse burnout on patient safety has also been explored (Welp et al., 2016). Healthcare clinician burnout is of serious concern not only for individual professionals, but for entire healthcare systems and patient care delivery.

**…the exacerbation of healthcare clinician burnout and related mental health consequences**

While burnout with its associated relationships to emotional well-being and resilience has been studied widely over the past two decades, the exacerbation of healthcare clinician burnout and related mental health consequences are being closely studied in the context of the COVID-19 pandemic (Morgantini et al., 2020; Hu et al., 2020). Frontline healthcare clinicians have reported increased stress, anxiety, and depressive symptoms (Shreffler et al., 2020), as well as moral

distress, burnout, and posttraumatic stress symptoms (Norman et al., 2021). In a survey of 1651 intensive care clinicians (physicians, nurses, respiratory therapists, and advanced practice clinicians) assessing the impact of COVID-19 on clinicians' perceptions of resource availability and factors associated with emotional distress and burnout, the clinicians' concerns included worries about transmitting COVID-19 to family/community (66%), emotional distress/burnout (58%), and insufficient personal protective equipment (40%) (Sharma et al., 2020).

**are being closely studied in the context of the COVID-19 pandemic.**

**…individually focused interventions can offer healthcare clinicians practical, in-the-moment skills to effectively manage stress and reduce emotional distress.**

Given the current concerns about stress and burnout among healthcare clinicians and the ongoing stress related to the COVID-19 pandemic, there is an urgent need to identify both organizational and individual-level interventions to support emotional health and resilience. While organizational strategies are necessary to help alleviate systemic contributors to professional burnout and allow wide access to evidence-based strategies that support well-being, individually focused interventions can offer healthcare clinicians practical, in-the-moment skills to effectively manage stress and reduce emotional distress. Meditation-based interventions, in particular, may be valuable tools for healthcare clinicians. These interventions can be relatively simple to learn and practice, and are often brief, self-guided exercises that can be feasibly integrated into a busy daily routine.

**TM has been used with a variety of populations in which rates of stress and burnout are high.**

Transcendental Meditation (TM) is a specific meditation-based mind-body program that allows the practitioner to experience progressively quieter, less excited states of mental activity, with the growing experience of restful alertness in mind and body (Roth, 2018). TM has been used with a variety of populations in which rates of stress and burnout are high (Elder et al., 2014; Bonamer & Aquino-Russell, 2019; Azizoddin et al., 2021). In the healthcare field, Bonamer and Aquino-Russell (2019) used a single-group design and found that the use of TM demonstrated improvements in compassion fatigue and resilience in a group of 27 registered nurses. Most recently, the use of TM with emergency medicine clinicians in a busy, urban emergency department during the COVID-19 pandemic demonstrated significant reductions in burnout and psychological symptoms (Azizoddin et al., 2021). In studies of other helping professions, TM has been found effective in reducing burnout, emotional exhaustion, depression, anxiety, insomnia, and trauma symptom severity, and in increasing resilience and other positive factors (Jayadevappa et al., 2007; Elder et al., 2014; Valosek et al., 2018; Nidich et al., 2018; Bonamer & Aquino-Russell, 2019).

The emerging evidence on TM suggests that this approach has significant promise to address high stress and burnout among healthcare clinicians during the COVID-19 pandemic. To that end, the present study examined the impact of TM on the mental health and emotional well-being of frontline healthcare clinicians caring for COVID-19 patients. We hypothesized that TM practice would reduce self-reported burnout, anxiety, and depression, and improve general well-being among these frontline healthcare clinicians.

## Methods

### *Design*

This single-arm study determined the feasibility and effectiveness of TM in reducing burnout and enhancing emotional well-being in a sample of healthcare clinicians who have cared for COVID-19 patients. Participants received meditation training from certified TM instructors over a three-month period and completed self-report measures of professional burnout, depression, anxiety, and well-being. The university Institutional Review Board reviewed and approved the study protocol (Study # HUM00190103).

### *Sample and Setting*

An email announcement was sent to over 6000 healthcare clinicians (physicians, registered nurses, respiratory therapists, and advanced practice providers) describing the opportunity to learn TM via the study and inviting healthcare clinicians who have directly cared for COVID-19 patients to attend an introductory session on the TM approach. Two introductory sessions using a virtual format, 45-50 minutes in length, were led by a Certified TM instructor.

The session provided an introduction to the evidence-based TM technique and an overview of the structure and content of the instruction process, along with a question-and-answer period. One hundred and four individuals registered to attend one of the introductory sessions, with 33 individuals attending and an additional 28 individuals requesting to view a recorded session. A follow-up email was sent to everyone who registered at the end of the introductory sessions. The email included: a recording of the introductory session; a study fact sheet describing the study; the inclusion criteria; the TM training requirements; and the schedule for data collection.

A total of 39 individuals volunteered to participate. Of those, 35 met inclusion criteria and consented to the study. Three individuals withdrew before completion. To be included, participants needed to: be 18 years of age or older; work full-time in direct patient care; have provided direct care to COVID-19 patients at any time between March 2020 and August 2021; agree to complete the entire TM training program of eight sessions and practice the TM technique for 20 minutes twice daily

during the three-month study period, with completion of a daily log for self-monitoring; agree to complete self-report surveys prior to the TM training, at one-month after beginning training and again at three-months after the start of training; and, if being treated with psychoactive medications, have maintained a stable regimen for at least two months prior to enrollment. The completed study sample (see Table 1) consisted of a total of 32 individuals (23 registered nurses, five respiratory therapists, and four advanced practice providers) who directly cared for COVID-19 patients, met all inclusion criteria, and consented to the study protocol.

**Table 1: Descriptive Statistics of Participants (N=32)**

| Variable | Mean (SD) | *n* (%) |
|---|---|---|
| Age | 43.7 years (10.0) | |
| Gender | | |
| Male | | 2 (6.3) |
| Female | | 30 (93.8) |
| Professional Role | | |
| Nurse | | 23 (71.9) |
| Respiratory Therapist | | 5 (15.6) |
| Advanced Practice Provider | | 4 (12.5) |
| Time employed in current role | 84.0 months (102.2) | |

***Intervention***

TM is a simple-to-practice stress reduction technique that produces a state of restful alertness associated with a more integrated style of brain functioning. TM is practiced twice a day for twenty minutes. Standardized instruction in TM was delivered to participants by certified instructors of the program (Schneider et al., 2012; Roth, 2018; Nidich et al., 2018). The TM technique is not based on religious or other philosophical beliefs and does not involve major changes to one's lifestyle. Important advantages of employing TM in research include a standardized and reproducible instruction format, a thorough certification program for instructors, and widespread availability of instructors in the US and in other countries throughout the world.

**TM is a simple-to-practice stress reduction technique that produces a state of restful alertness associated with a more integrated style of brain functioning.**

Two experienced, certified TM instructors from local Centers for Transcendental Meditation conducted the instruction. Both certified TM teachers were extensively trained in the teaching of the TM program and guided participants by verifying their continued correctness of practice of the technique and conducting additional follow-up sessions. The standardized TM course sequence was used for all participants.

The TM instructional program included a total of 8 sessions (four instructional sessions over four consecutive days and four follow-up seminars over a total program length of 12 weeks). The first phase of instruction required four sessions held over four consecutive days. Session one required face-to-face individual instruction in the TM technique with the certified TM instructor. Participants chose to complete the first session in a designated room within the medical center or at the local Center for Transcendental Meditation. Instructional materials for the second, third, and fourth sessions of the course were delivered remotely to each individual participant through a digital program called the "TM at Home" learning option, accessed via an app downloaded to the participant's smartphone.

During the initial face-to face session, the instructor helped the participant access the at-home instructional materials via the app on their smartphone. Participants were then able to complete sessions two, three, and four using the at-home learning program (a series of pre-recorded lectures). In addition to viewing the material via the app, participants were required to attend a live videoconferencing session, lasting approximately 30 minutes, with one of the TM teachers during days two, three, and four of the initial instructional period. Each of these three sessions included a verification of the correct practice of the TM technique. Session two focused on ensuring that participants were meditating correctly and gaining the expected benefits; session three focused on understanding the mechanics of how TM restores balance and reduces stress in the nervous system; and session four focused on exploring the long-term benefits of regular TM practice for optimizing mental and physical health.

**Session one required face-to-face individual instruction in the TM technique with the certified TM instructor.**

**Each of these three sessions included a verification of the correct practice of the TM technique.**

The initial course of instruction was followed by four follow-up seminars (sessions 5-8) offered remotely by videoconference to help stabilize correct practice of the TM technique and deepen participants' understanding of its mechanics and effects. Session five occurred 10 to 14 days after the initial training was completed, session six was two weeks later, and sessions seven and eight were four weeks and eight weeks, respectively, after session six. Each follow-up seminar was 45 minutes in length and included additional information on a range of topics (e.g., effects of TM on neuroplasticity, enhancing resilience). Participants were advised to engage in home practice of TM consisting of two daily 20-minute TM sessions, morning and evening, and to complete a brief log at the end of each day.

### *Measures*

Study outcomes were assessed at baseline and at one-month and three-months following the first TM instruction session. The outcome measures data were collected and managed using REDCap (Research Electronic Data Capture) electronic data capture tools (Harris el., 2009). REDCap is a secure, web-based software platform designed to support data capture for research studies. In addition, participants were asked to complete an online daily log of the time and number of minutes they meditated each day using the Qualtrics survey platform (Qualtrics, 2021). Participants received a daily reminder email to complete their meditation log.

The Maslach Burnout Inventory - Human Services Survey for Medical Personnel (MBI-HHSMP) was used to measure participant burnout (Maslach et al., 2018). The MBI is a 22-item self-report inventory with a seven-point response scale, from 0 ("Never") to 6 ("Every day"). Responses are summed into three domains: emotional exhaustion (nine items), depersonalization (five items), and personal accomplishment (eight items). Cronbach's alphas range from .76 to .90 (Iwanicki & Schwab, 1981). The MBI-HHSMP is an updated version of the MBI for Human Services designed for use with all medical professionals.

Depression was measured using the Patient Health Questionnaire (PHQ)-9, a widely used measure of depression with high internal consistency (Cronbach's =0.92) (Cameron et al., 2008; Kroenke et al., 2003). The PHQ-9 is a nine-item self-report symptom checklist with scores ranging from 0 ("Not at all") to 3 ("Nearly every day").

The Generalized Anxiety Disorder Scale (GAD)-7 is a seven-item self-report scale used to measure anxiety symptoms. Each symptom question uses a four-point scale from 0 ("Not at all") to 3 ("Nearly every day"). A total score is calculated by summing the responses. The internal consistency is very good (Cronbach **α** = .92) (Spitzer et al., 2006).

Well-being was measured using the Warwick Edinburgh Mental Well Being Scale (WEMWBS); a 14-item self-report measure using a five-point scale from 1 ("None of the time") to 5 ("All of the time"), summed to provide a single score. The items, all worded positively, cover both feeling and functioning aspects of mental wellbeing, thereby making the concept more accessible (University of Warwick and University of Edinburgh, 2006; Tennant et al., 2007).

A brief TM home practice questionnaire was included with the one-month and three-month assessments. Four questions were developed by the research team to assess the frequency of home meditation practice (e.g., "In any one session, how many minutes do you usually spend practicing the TM program?").

**A brief TM home practice questionnaire was included with the one-month and three-month assessments.**

### *Data Analysis Plan*

Frequencies and mean scores were calculated for demographics and home practice data. To determine the impact of the TM intervention on the outcome measures of burnout, depression, anxiety, and well-being, data were analyzed using repeated-measures analysis of variance (ANOVA). This analysis determined within-group differences across the baseline, one-month, and three-months testing periods. Hedges *g* effect size analyses with correction for small sample size were provided at the three-months assessment period to show the impact of the TM intervention.

All analyses used intention-to-treat and included all subjects who were instructed in TM, regardless of how many sessions they attended or whether they completed all testing sessions. Missing data were addressed using a multiple imputation of data approach.

## Results

Descriptive statistics of the sample were presented in Table 1. Thirty-one (96.9%) of the participants completed at least 6 of 8 TM training sessions with their instructor. Of those, 90.3% (*n* = 28) attended all 8 sessions. Participants completed additional instructional modules for sessions two, three, and four via a smartphone app, and 93.8% (*n* = 30) completed all required modules.

**Adherence to the TM home practice intervention is identified as practicing at least once daily on average.**

Adherence to the TM home practice intervention is identified as practicing at least once daily on average (Nidich et al., 2018). At the one-month assessment, 81.3% (*n* = 26) reported meditating at least once a day in the past week; at three months, 78.2% (*n* = 25) practiced meditation at least once a day in the past week. For the daily meditation diary survey, participants completed an average of 62 out of 90 possible daily diaries during the three-month study period.

Results from the repeated measures analysis of variance are presented in Table 2. There were significant within-group improvements in all outcome variables across the three assessment points (baseline, one-month, three-months).

### Table 2: Results for Repeated Measures Analysis of Variance Change from Baseline to 1-Month and 3-Months

| Variable | Mean Change | Standard Error | 95% CI upper limit | 95% CI lower limit | t-test | P-value |
|---|---|---|---|---|---|---|
| MBI Emotional Exhaustion | -6.38 | 1.15 | -8.68 | -4.08 | -5.56 | <.0001 |
| MBI Depersonalization | -2.03 | 0.76 | -3.54 | -0.51 | -2.68 | 0.0096 |
| MBI Personal Accomplishment | 2.74 | 0.81 | 4.37 | 1.11 | 3.37 | 0.0014 |
| PHQ-9 Depression | -4.46 | 0.51 | -5.49 | -3.43 | -8.67 | <.0001 |
| GAD-7 anxiety | -4.23 | 0.60 | -5.43 | -3.03 | -7.07 | <.0001 |
| WEMWBS Well- Being Scale | 5.70 | 1.08 | 7.87 | 3.53 | 5.26 | <.0001 |

Notes: MBI = Maslach Burnout Inventory; PHQ-9 = Patient Health Questionnaire, 9-item; GAD-7 = Generalized Anxiety Disorder Scale, 7-item; WEMWBS = Warwick Edinburgh Mental Well Being Scale

To better understand the patterns of change over time, paired t-tests were used to identify changes from baseline to one-month (Table 3), and from baseline to the three-month assessment (Table 4). At one-month, statistically significant improvements were seen for the burnout factor of emotional exhaustion, depression, anxiety, and mental well-being. At three-months, these improvements were maintained with an additional improvement in the burnout factor of personal accomplishment. Effect sizes ranged in magnitude from -0.31 to -1.07, suggesting moderate to large effects for the main study outcomes of depression (*g* = -1.07, *P* < .0001), mental well-being (*g* = 1.05, *P* = .0006), anxiety (*g* = -0.94, *P* < .0001), and the burnout factors of emotional exhaustion (*g* = -0.74, *P* = .0004), depersonalization (*g* = -0.31, *P* = .0468), and personal accomplishment (*g* = 0.60, *P* = .0047*)*. The TM intervention had a strong impact on mood concerns and contributed to improvements in overall mental well-being.

### Table 3: Results for Paired T-Tests on Change from Baseline to 1-Month Posttest

| Variable | Mean Change | Standard Error | 95% CI upper limit | 95% CI lower limit | t-test | P-value |
|---|---|---|---|---|---|---|
| MBI Emotional Exhaustion | -4.54 | 1.23 | -7.07 | -2.02 | -3.70 | 0.001 |
| MBI Depersonalization | -1.70 | 1.04 | -3.84 | 0.44 | -1.63 | 0.1138 |

| | | | | | | |
|---|---|---|---|---|---|---|
| MBI Personal Accomplishment | 1.94 | 1.20 | 4.41 | -0.53 | 1.62 | 0.1179 |
| PHQ-9 Depression | -4.25 | 0.69 | -5.66 | -2.84 | -6.18 | <.0001 |
| GAD-7 anxiety | -3.81 | 0.80 | -5.47 | -2.16 | -4.74 | <.0001 |
| WEMWBS Well-Being Scale | 4.67 | 1.40 | 7.54 | 1.79 | 3.34 | 0.0026 |

Notes: MBI = Maslach Burnout Inventory; PHQ-9 = Patient Health Questionnaire, 9-item; GAD-7 = Generalized Anxiety Disorder Scale, 7-item; WEMWBS = Warwick Edinburgh Mental Well Being Scale

**Table 4: Results for Paired T-Tests on Change from Baseline to 3-Month Posttest**

| Variable | Mean Change | Standard Error | 95% CI upper limit | 95% CI lower limit | t-test | P-value | Effect Size* |
|---|---|---|---|---|---|---|---|
| MBI Emotional Exhaustion | -8.02 | 1.95 | -12.03 | -4.01 | -4.11 | 0.0004 | -0.74 |
| MBI Depersonalization | -2.30 | 1.10 | -4.57 | -0.03 | -2.08 | 0.0468 | -0.31 |
| MBI Personal Accomplishment | 3.48 | 1.13 | 1.17 | 5.79 | 3.09 | 0.0047 | 0.60 |
| PHQ-9 Depression | -4.64 | 0.76 | -6.19 | -3.08 | -6.12 | <.0001 | -1.07 |
| GAD-7 anxiety | -4.55 | 0.88 | -6.37 | -2.74 | -5.15 | <.0001 | -0.94 |
| WEMWBS Well-Being Scale | 6.61 | 1.69 | 10.09 | 3.14 | 3.91 | 0.0006 | 1.05 |

Notes: Notes: MBI = Maslach Burnout Inventory; PHQ-9 = Patient Health Questionnaire, 9-item; GAD-7 = Generalized Anxiety Disorder Scale, 7-item; WEMWBS = Warwick Edinburgh Mental Well Being Scale

* Effect Size, using Hedges *g* with correction

## Discussion

The results of this single-arm study demonstrate that healthcare clinicians who learned and practiced TM showed decreased symptoms of burnout, depression, and anxiety, and improved mental well-being. These improvements in burnout and well-being were seen at one-month after the initial TM instruction and were maintained through the three-month follow-up period. These findings support similar studies which have demonstrated the positive impact of TM on burnout and perceived stress in teachers (Elder et al., 2014), the reduction of compassion fatigue and increase in resilience in nurses (Bonamer & Aquino-Russell, 2019), and reductions in burnout, sleep disturbances, depression, anxiety, and stress in emergency department clinicians (Azizoddin et al., 2021).

**These findings support similar studies which have demonstrated the positive impact of TM on burnout and perceived stress in teachers.**

The healthcare clinicians in the study showed a specific reduction in the burnout factor of emotional exhaustion. This finding is noteworthy when considering the potential negative consequences of emotional exhaustion on the individual clinician and on patient care and healthcare systems. Emotional exhaustion is defined as “being emotionally overextended and exhausted by one’s work” (Maslach et al., 2018, p. 40), and has been associated with stronger intentions to leave one’s job or profession (Jourdain & Chenevert, 2010). In a 2020 survey of 1119 healthcare clinicians, emotional exhaustion was the most

reported experience (82%), with disturbance in sleep (70%), physical exhaustion (68%), and work-related dread (63%) following as additional common experiences; nurses in the sample were even more likely to report higher rates of emotional exhaustion than other clinicians surveyed (Mental Health America, 2020).

**The healthcare clinicians in the study showed a specific reduction in the burnout factor of emotional exhaustion.**

A possible mechanism for how the TM program helps to reduce burnout - and specifically emotional exhaustion - is by decreasing physiological overactivation. Research has shown that TM reduces psychological and physiologic responses to stress factors, as evidenced by decreased sympathetic nervous system and hypothalamic-pituitary-adrenal (HPA) axis activity, including decreased cortisol levels (Barnes et al., 2001; MacLean et al., 1994; Jevning et al., 1996). Recent brain imaging research further shows that areas of the brain related to arousal exhibit less activation during the practice (Mahone et al., 2018). Thus, the clinicians in our study may have learned valuable skills for regulating stress responses, thereby reducing their experience of emotional exhaustion.

Results support that the TM practice was well-received and consistently practiced by most participants, with 78% of participants practicing at least once a day after the three-month follow-up period. Azizoddin and colleagues (2021) have also reported on the feasibility of TM practice with clinician groups, indicating that the TM technique is easily understood and practiced and may be considered an effective self-help tool for busy clinicians.

Participant comments collected from their daily diaries indicated that TM practice enabled them to improve several aspects of their well-being, despite some commonly reported challenges related to finding time to practice or being able to effectively practice during periods of physical illness. Several participants noted that TM helped them manage physical health and sleep: “I was feeling sick this AM but even the meditation helped me feel better, the PM meditation was just as good at helping headache, body aches” (female registered nurse); and “my sleep is much improved with meditation, and it spills over into other areas of my life - food choices, stress responses” (female registered nurse). Others mentioned the benefit of TM for stress management and contributing to a greater sense of calm: “I truly do feel much more calm and generally more clear-headed. I still have some stress/anxiety attacks, but it is better than before” (female registered nurse); “I have a more calm and focused demeanor” (female nurse practitioner); and “I’ve started to feel more motivated about daily life” (female, respiratory therapist). Participants also described a variety of positive experiences associated with their practice: “It is becoming so easy, time goes by quickly” (female registered nurse), and “I think the practice is increasing my happiness” (female registered nurse).

This study provided instructional sessions using the “TM at Home” app along with videoconference sessions with the TM instructors. The use of the app and videoconference sessions provided increased flexibility in the training program, as compared to the traditional methods of TM instruction which are in-person sessions. Outcomes in the present study are comparable to those in previous studies that used the traditional instructional in-person methods. These findings may support the continued use of the “TM at Home” application for future TM instruction programs for healthcare clinicians, thereby enhancing flexibility and access to the intervention.

**Outcomes in the present study are comparable to those in previous studies that used the traditional instructional in-person methods.**

Limitations of the study include a small, volunteer sample and lack of a randomized control group. In addition, the sample was predominantly female and consisted primarily of registered nurses, making it difficult to generalize results to other populations. Randomized controlled trials engaging larger numbers of diverse healthcare professionals are recommended to strengthen and extend these findings. Additional communications through presentations and email contact may increase participant interest in future studies, as well as focused recruitment strategies to evaluate the intervention in specific demographic or professional groups. Of note, the enrollment and initial TM instruction period began just a few weeks before a significant surge in COVID-19 cases at the study’s academic medical center. Despite the additional demands and stresses associated with caring for COVID-19 patients and responding to operational changes within the medical center, participants continued to find ways to regularly practice TM and demonstrated improvements in the outcome measures. Although the present study was not able to control for the impact of increased stress or exposure to COVID-19 during the study period, the results are encouraging insofar as participants reported benefits in their well-being even under conditions of increased stress.

## Conclusion

**There is a critical need for evidence-informed interventions that are practical and have meaningful impacts on emotional health and well-being.**

Healthcare clinicians have been experiencing increased symptoms of professional burnout over the decades, and the COVID-19 pandemic has exacerbated feelings of emotional exhaustion, burnout, depression, anxiety, and insomnia. This is the human toll of burnout. The financial toll of burnout-associated costs related to physician turnover has been estimated to be as high as $4.6 billion in the United States (Han et al., 2019). The burnout-related costs of nurse turnover, the largest healthcare profession in the country, has yet to be determined, but will likely be

staggering. There is a critical need for evidence-informed interventions that are practical and have meaningful impacts on emotional health and well-being. This study contributes to the growing body of evidence supporting the use of TM as an effective self-help practice to reduce burnout and provide support for the ever-increasing demands of providing clinical care. Instruction in TM early in one's professional career should be considered. The TM technique is easy to learn and sustain and should be considered in a clinician's toolbox of self-help practices.

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## References

Azizoddin, D. R., Kvaternik, N., Beck, M., Zhou, G., Hasdianda, M. A., Jones, N., Johnsky, L., Im, D., Chai, P.R., & Boyer, E. W. (2021). Heal the Healers: A pilot study evaluating the feasibility, acceptability, and exploratory efficacy of a Transcendental Meditation intervention for emergency clinicians during the coronavirus disease 2019 pandemic. *Journal of the American College of Emergency Physicians Open*, *2*(6), e12619. https://doi.org/10.1002/emp2.12619

Barnes, V. A., Treiber, F. A., & Davis, H. (2001). Impact of Transcendental Meditation on cardiovascular function at rest and during acute stress in adolescents with high normal blood pressure. *Journal of Psychosomatic Research, 51*(4), 597-605. https://doi.org/10.1016/s0022-3999(01)00261-6

Bonamer, J. R., & Aquino-Russell, C. (2019). Self-care strategies for professional development: Transcendental meditation reduces compassion fatigue and improves resilience for nurses. *Journal for Nurses in Professional Development*, *35*(2), 93-97. https://doi.org/10.1097/NND.0000000000000522

Cameron, I. M., Crawford, J. R., Lawton, K., & Reid, I. C. (2008). Psychometric comparison of PHQ-9 and HADS for measuring depression severity in primary care. *British Journal of General Practice*, *58*(546), 32-36. https://doi.org/10.3399/bjgp08X263794

Dewa, C. S., Loong, D., Bonato, S., Trojanowski, L., & Rea, M. (2017). The relationship between resident burnout and safety-related and acceptability-related quality of healthcare: a systematic literature review. *BMC Medical Education*, *17*(1), 1-16. https://doi.org/10.1186/s12909-017-1040-y

Elder, C., Nidich, S., Moriarty, F., & Nidich, R. (2014). Effect of transcendental meditation on employee stress, depression, and burnout: a randomized controlled study. *The Permanente Journal*, *18*(1), 19. https://doi.org/10.7812/TPP/13-102

Hamidi, M. S., Bohman, B., Sandborg, C., Smith-Coggins, R., De Vries, P., Albert, M. S., Murphy, M.L., Welle, D., & Trockel, M. T. (2018). Estimating institutional physician turnover attributable to self-reported burnout and associated financial burden: a case study. *BMC Health Services Research*, *18*(1), 1-8. https://doi.org/10.1186/s12913-018-3663-z

Han, S., Shanafelt, T. D., Sinsky, C. A., Awad, K. M., Dyrbye, L. N., Fiscus, L. C., Trockel, M., & Goh, J. (2019). Estimating the attributable cost of physician burnout in the United States. *Annals of Internal Medicine*, *170*(11), 784-790. https://doi.org/10.7326/M18-1422

Harris, P. A., Taylor, R., Thielke, R., Payne, J., Gonzalez, N., & Conde, J. G. (2009). Research electronic data capture (REDCap)—a metadata-driven methodology and workflow process for providing translational research informatics support. *Journal of Biomedical Informatics*, *42*(2), 377-381. https://doi.org/10.1016/j.jbi.2008.08.010

Hu, D., Kong, Y., Li, W., Han, Q., Zhang, X., Zhu, L. X., Wan, S.W., Liu, Z., Shen, Q., Yang, J., He, H., & Zhu, J. (2020). Frontline nurses' burnout, anxiety, depression, and fear statuses and their associated factors during the COVID-19 outbreak in Wuhan, China: A large-scale cross-sectional study. *EClinicalMedicine*, *24*, 100424. https://doi.org/10.1016/j.eclinm.2020.100424

Iwanicki, E. F., & Schwab, R. L. (1981). A cross validation study of the Maslach Burnout Inventory. *Educational and Psychological Measurement*, *41*(4), 1167-1174. https://doi.org/10.1177/0013164481041004

Jayadevappa, R., Johnson, J. C., Bloom, B. S., Nidich, S., Desai, S., Chhatre, S., Razziano, D. B., & Schneider, R. H. (2007). Effectiveness of transcendental meditation on functional capacity and quality of life of African Americans with congestive heart failure: A randomized control study. *Ethnicity & Disease*, *17*(1), 72.

Jevning, R., Anand, R., Biedebach, M., & Fernando, G. (1996). Effects on regional cerebral blood flow of transcendental meditation. *Physiology & Behavior, 59*(3), 399-402. https://doi.org/10.1016/0031-9384(95)02006-3

Jourdain, G., & Chênevert, D. (2010). Job demands–resources, burnout and intention to leave the nursing profession: A questionnaire survey. *International Journal of Nursing Studies*, *47*(6), 709-722. https://doi.org/10.1016/j.ijnurstu.2009.11.007

Kroenke, K., Spitzer, R. L., & Williams, J. B. (20023). The Patient Health Questionnaire-2: Validity of a two-item depression screener. *Medical Care,* (41), 1284-92. https://doi.org/10.1097/01.MLR.0000093487.78664.3C

MacLean, C. R., Walton, K. G., Wenneberg, S. R., Levitsky, D. K., Mandarino, J. V., Waziri, R., & Schneider, R. H. (1994). Altered responses of cortisol, GH, TSH and testosterone to acute stress after four months' practice of Transcendental Meditation (TM). *Annals of New York Academy of Science, 22*(4), 277-295. https://doi.org/10.1111/j.1749-6632.1994.tb39261.x

Mahone, M. C., Travis, F., Gevirtz, R., & Hubbard, D. (2018). fMRI during Transcendental Meditation practice. *Brain and Cognition, 123*, 30-33. https://doi.org/10.1016/j.bandc.2018.02.011

Maslach, C., Jackson, S. E., & Leiter, M. P. (2018). *Maslach Burnout Inventory Manual, 4th ed.* Mind Garden, Inc.

Mental Health America. (2020). *The mental health of healthcare workers in COVID-19.* https://mhanational.org/mental-health-healthcare-workers-covid-19

Morgantini, L. A., Naha, U., Wang, H., Francavilla, S., Acar, Ö., Flores, J. M., Crivellaro, S., Moreira, D., Aberb, M., Eklund, M., Vigneswaran, H. T., & Weine, S. M. (2020). Factors contributing to healthcare professional burnout during the COVID-19 pandemic: A rapid turnaround global survey. *PloS one*, *15*(9), e0238217. https://doi.org/10.1371/journal.pone.0238217

Nidich, S., Mills, P., Rainforth, M., Heppner, P., Schneider, R., Rosenthal, N., Salerno, J., Gaylord-King, C, & Rutledge, T. (2018). Non-trauma-focused meditation versus exposure therapy in veterans with post-traumatic stress disorder: a randomised controlled trial. *Lancet Psychiatry, Vol. 5:* 12. 975-986. https://doi.org/10.1016/S2215-0366(18)30384-5

Norman, S. B., Feingold, J. H., Kaye-Kauderer, H., Kaplan, C. A., Hurtado, A., Kachadourian, L., Feder, A., Murrough, J. W., Charney, D., Southwick, S.M., Ripp, J., Peccoralo, L., & Pietrzak, R. H. (2021). Moral distress in frontline healthcare clinicians in the initial epicenter of the COVID-19 pandemic in the United States: Relationship to PTSD symptoms, burnout, and psychosocial functioning. *Depression and Anxiety*, *38*(10), 1007-1017. https://doi.org/10.1002/da.23205

Qualtrics. (2021). *Qualtrics software* (Version XM). https://www.qualtrics.com

Roth, R. (2018). *Strength in stillness: The power of transcendental meditation*. Simon & Schuster.

Schneider, R. H., Grim, C. E., Rainforth, M. V., Kotchen, T., Nidich, S. I., Gaylord-King, C., Salerno, J. W., Morley Kotchen, J., & Alexander, C. N. (2012). Stress reduction in the secondary prevention of cardiovascular disease: randomized, controlled trial of transcendental meditation and health education in Blacks. *Circulation: Cardiovascular Quality and Outcomes*, *5*(6), 750-758.

https://doi.org/10.1161/CIRCOUTCOMES.112.967406

Shanafelt, T. D., Hasan, O., Dyrbye, L. N., Sinsky, C., Satele, D., Sloan, J., & West, C. P. (2015). Changes in burnout and satisfaction with work-life balance in physicians and the general US working population between 2011 and 2014. In *Mayo Clinic Proceedings, 90(12),1600-1613.* Elsevier. https://doi.org/10.1016/j.mayocp.2015.08.023

Sharma, M., Creutzfeldt, C. J., Lewis, A., Patel, P. V., Hartog, C., Jannotta, G. E., Blissitt, P., Kross, E. K., Kassebaum, N., Greer, D. M., Curtis, J. R., & Wahlster, S. (2020). Health-care professionals' perceptions of critical care resource availability and factors associated with mental well-being during coronavirus disease 2019 (COVID-19): Results from a US survey. *Clinical Infectious Diseases*, *72*(10), e566-e576. https://doi.org/10.1093/cid/ciaa1311

Shreffler, J., Petrey, J., & Huecker, M. (2020). The impact of COVID-19 on healthcare clinician wellness: A scoping review. *Western Journal of Emergency Medicine, 21*(5), 1059. https://doi.org/10.5811/westjem.2020.7.48684

Spitzer, R. L., Kroenke, K., Williams, J. B., & Löwe, B. (2006). A brief measure for assessing generalized anxiety disorder: The GAD-7. *Archives of Internal Medicine*, *166*(10), 1092-1097. https://doi.org/10.1001/archinte.166.10.1092

Tennant, R., Hiller, L., Fishwick, R., Platt, S., Joseph, S., Weich, S., Parkinson, J., Secker, J., & Stewart-Brown, S. (2007). The Warwick-Edinburgh mental well-being scale (WEMWBS): Development and UK validation. *Health and Quality of life Outcomes*, *5*(1), 1-13. https://doi.org/10.1186/1477-7525-5-63

University of Warwick and University of Edinburgh. (2006). *Warwick–Edinburgh Mental Well-being Scale.* NHS Health Scotland.

Valosek, L., Link, J., Mills, P., Konrad, A., Rainforth, M., & Nidich, S. (2018). Effect of meditation on emotional intelligence and perceived stress in the workplace: A randomized controlled study. *The Permanente Journal*, *22*. https://doi.org/10.7812/TPP/17-172

Vandenbroeck, S., Van Gerven, E., De Witte, H., Vanhaecht, K., & Godderis, L. (2017). Burnout in Belgian physicians and nurses. *Occupational Medicine*, *67*(7), 546-554. https://doi.org/10.1093/occmed/kqx126

Welp, A., Meier, L. L., & Manser, T. (2016). The interplay between teamwork, clinicians' emotional exhaustion, and clinician-rated patient safety: a longitudinal study. *Critical Care*, *20*(1), 1-10. https://doi.org/10.1186/s13054-016-1282-9

Whitebird, R. R., Solberg, L. I., Crain, A. L., Rossom, R. C., Beck, A., Neely, C., Dreskin, M., & Coleman, K. J. (2017). Clinician burnout and satisfaction with resources in caring for complex patients. *General Hospital Psychiatry*, *44*, 91-95. https://doi.org/10.1016/j.genhosppsych.2016.03.004

World Health Organization. (2019, May 28). *Burn-out an "occupational phenomenon": International classification of diseases.* https://www.who.int/news/item/28-05-2019-burn-out-an-occupational-phenomenon-international-classification-of-diseases

Yilmaz, E. B. (2017). Resilience as a strategy for struggling against challenges related to the nursing profession. *Chinese Nursing Research*, *4*(1), 9-13. https://doi.org/10.1016/j.cnre.2017.03.004

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