



# Meditation Effective in Reducing Teacher Burnout and Improving Resilience: A Randomized Controlled Study

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Teacher burnout affects job performance and mental and physical health. This study evaluated the effects of a meditation-based wellness program on burnout, resilience, psychological distress, and fatigue. Seventy-eight participants, randomly assigned to the Transcendental Meditation program (n = 39) or to a wait-list control group (n = 39), were administered the Maslach Burnout Inventory, Resilience Scale, Perceived Stress Scale, and the National Institutes of Health Patient-Reported Outcomes Measurement Information System fatigue and depression scales at baseline and at four-month posttest. Intention-to-treat with all 78 participants was used for all analyses. Significant reduction on emotional exhaustion, the main scale of the Maslach Burnout Inventory, was found for the meditation group compared to controls ( $p = 0.019$ ). Significant improvements were also found on resilience ( $p = 0.014$ ), perceived stress ( $p < 0.001$ ), fatigue ( $p = 0.001$ ), and depression ( $p = 0.091$ ). Eighty-seven percent were compliant with their meditation home practice. Findings indicate that meditation is effective in improving burnout and associated resilience, psychological distress, and fatigue factors. Teachers may benefit from in-school wellness programs.

**Keywords:** meditation, teachers, burnout, stress, wellness

## INTRODUCTION

By some estimates 70% of professionals are under frequent stress, with over 20% estimated to be suffering from burnout (Burke et al., 1996; Rudow, 1999). Teachers, in particular, face a considerable amount of daily pressures, stress, and fatigue due to their classroom challenges and other professional activities (Flook et al., 2013). Stressors that may be contributing to teacher burnout include classroom management problems due to student misbehavior, high workloads, feeling of time pressure, excessive administrative tasks, and other organization factors (McCormick and Barnett, 2011; Skaalvik and Skaalvik, 2010; Maslach and Leiter, 2008; Blase, 1986; Boyle et al., 1995; Flook, et al., 2013).

Burnout is defined by emotional exhaustion, depersonalization, and reduced sense of personal accomplishment (Maslach et al., 2010). Emotional exhaustion, the key aspect of burnout (Maslach et al., 2010; Skaalvik and Skaalvik, 2010), is the feeling of not being able to offer any more of oneself at work, as the consequence of a prolonged exposure to excessive demands. Depersonalization is a cynical and detached attitude toward clients/students. Personal accomplishment is the feeling of

performing tasks adequately and a sense of achievement. Burnout develops as a result of the inability to protect oneself from repeated social-environmental stress (Maslach et al., 2010; Jacobson, 2016). Additional factors such as a lack of autonomy, the feeling of isolation, and the lack of balance between home and work responsibilities contribute to burnout (Skaalvik and Skaalvik, 2010; Avalos, 2011; Fernet et al., 2012; Jacobson, 2016). Indications of teacher burnout include increasing absenteeism from work, impatience with students and colleagues, a growing lack of commitment, and increasingly poorer job performance (Parker et al., 2012; Jacobson, 2016).

Studies indicate that burnout is prevalent across professional groups (Kahill, 1988; Friedman, 1995; Prins et al., 2007). Many of the same contributing factors to burnout found in teachers can be observed in other professionals: workload demands and increased responsibilities; time demands, including feeling little control over one's work time; limited resources; and administrative and staff conflict (Kuzsman and Schnall, 1987; Boyle et al., 1995; Thomas, 2004). Lack of recognition, increased administrative work, and the balancing of time between work and home life are factors related to lack of job satisfaction and personal accomplishment, a component of burnout (Balch and Copeland, 2007; Lowenstein et al., 2007; Shanafelt et al., 2009; Jones and Yun, 2011).

Burnout is not just a problem within the United States, but has been increasing globally. For example, Austrian workers are experiencing burnout at a rate of over 50% with over 10% suffering from major depression (Wurm et al., 2016). Burnout has recently been a central focus in research conducted in countries around the world, including Great Britain (Petersen and Burnett, 2008), Sweden (Grensman et al., 2018), Italy (Pompili et al., 2010), Hungary (Piko, 2006), and Canada (Regehr et al., 2014; Howlett et al., 2015). The increasing interest in research on burnout comes from the fact that it affects both the professional and the client, or student (Prins et al., 2007).

High perceived stress and low resilience—the inability to cope with daily stressors and overcome challenges—are implicated in the development of burnout (Anderson et al., 1994; Burke et al., 1996). Burnout is commonly found with high levels of psychological distress, including depression and anxiety (Dyrbye et al., 2014). Research indicates that the higher the degree of burnout the more severe the symptoms of depression (Wurm, et al., 2016). Degree of burnout has also been shown to be associated with degree of hopelessness (Pompili, et al., 2010).

A vicious cycle of ignoring “resilience wear-down” predisposes one to burnout, which in turn can lead to lower resilience (Sotile and Sotile, 2002). Having the trait of resilience allows one to overcome stress and problems and become stronger from the experience. Resilience is suggested to be a buffer between burnout and adverse mental and physical health outcomes (Arrogante, 2014).

Psychological distress adversely affects work productively as well as contributing to poorer mental and physical health (Muse et al., 2003). Perceived stress, specifically, is associated with

negative health behaviors and a worsening cardiac risk profile (Rod et al., 2009). A 10-year prospective study indicated that emotional exhaustion scores on the Maslach Burnout Inventory were strong predictors of increased risk for mortality (Ahola et al., 2010).

Prior programs have used a wide range of modalities and interventions, including counseling, relaxation therapy, and stress management, to address emotional stress and burnout. Counseling has been used with other professionals suffering from burnout, resulting in reductions in emotional exhaustion and job stress (Isaksson Ro et al., 2010). Relaxation treatment, including breathing exercises, has also been used to address burnout and its symptoms (Ospina-Kammerer and Figley, 2003). Stress reduction with mindfulness has shown reduced burnout and perceived stress, using an uncontrolled design in a corporate setting (Kersemaekers et al., 2018) and in a controlled pilot study with teachers (Flook et al., 2013).

A widely studied stress reduction program is Transcendental Meditation (TM) (Orme-Johnson and Barnes, 2013). It has been employed in multiple clinical trials over the past several decades (Rosenthal, 2011). A previous randomized controlled study found reduced emotional exhaustion, perceived stress, and depression in teachers practicing TM (Elder et al., 2014). This is the first randomized controlled study to investigate the effects of meditation with teachers on both burnout and resilience.

## METHOD

### Overview

This study used a randomized controlled design with 78 teachers and staff who participated in a school wellness program to improve emotional wellbeing. Participants were assigned to either meditation ( $n = 39$ ) or wait-list control ( $n = 39$ ) groups. Participants completed baseline measures (prior to the intervention period) and again after four months. The primary outcome of the study was change in teacher burnout, as measured by the Maslach Burnout Inventory. Secondary outcomes included resilience, perceived stress, and mood disturbance.

### Participants

Seventy-eight teachers and other school staff volunteered to take part in a professional development program, offered at one high school and two middle schools in the same United States West Coast school district. Following informational sessions, where prospective participants were provided details of the professional development program and evaluation procedures, those interested were randomly assigned to one of two treatment conditions: meditation (immediate start) or wait-list control (delayed start) stratified by school site. Control participants were eligible to learn meditation following completion of the study.

### Treatment Group

Instruction in meditation was conducted over five 1-h sessions. Participants were encouraged to practice the technique at home

twice a day for 20 min. Subjects attended regular follow-up group meetings with their instructor every other week for the duration of the four-month study.

## Control Group

Subjects in the wait-list control group continued with their usual daily routine throughout the four-month program. They were then eligible to be instructed in meditation after completing four-month posttesting.

## Measures

Participants completed a battery of assessments at baseline prior to meditation instruction. They were administered the same battery approximately four months later.

## Burnout

The Maslach Burnout Inventory (MBI) (Maslach et al., 2010) was used to measure participant burnout. The MBI is a 22-item inventory with a seven-point response scale, measuring emotional exhaustion (9 items), depersonalization (5 items), and personal accomplishment (8 items). Respondents indicate how often they experienced each statement on a seven-point scale ranging from “Never” to “Every day.” Example items include “I feel frustrated in my job,” “I worry that this job is hardening me emotionally.” Higher scores on this scale indicate greater burnout. Cronbach’s alphas range from 0.76 to 0.90 (Iwanicki and Schwab, 1981; Maslach et al., 2010). Previous research has shown the instrument to be sensitive to changes induced by mind-body stress reduction practice (Goodman and Schorling, 2012).

## Resilience

The Resilience Scale (Wagnild and Young, 1993) is a single-factor instrument that assesses emotional capability to cope with stress and adversity. A 15-item version was used for the study. For each item, participants rated how strongly they agreed or disagreed with the statement (1 = Disagree Strongly, 7 = Agree Strongly). Example items include “When I make plans, I follow through with them,” “I am friends with myself,” and “I feel that I can handle many things at a time.” Higher scores on the scale indicate stronger feelings of resilience. In the current study, the Resilience Scale was found to have high internal consistency at baseline ( $\alpha = 0.93$ ) and follow-up ( $\alpha = 0.95$ ).

## Perceived Stress

The Perceived Stress Scale (PSS; Cohen et al., 1983) is a 14-item scale with a total score designed to assess the self-perception of stress. Example items include “How often have you been upset because of something that happened unexpectedly?” and “How often have you felt nervous and stressed?” Responses took into account the prior four weeks, using a 5-item response set (0–4), ranging from “Never” to “Very Often.” Higher scores on the perceived stress scale indicate a greater perceived presence of stress. In the current study, the Perceived Stress Scale had high internal consistency at baseline ( $\alpha = 0.77$ ) and follow-up ( $\alpha = 0.84$ ).

**TABLE 1 |** Demographic characteristics and baseline Scores by group.

Variable	Control mean (SD)	TM mean (SD)	p Value
Age	42.08 (12.68)	45.74 (14.13)	0.255
Female (%)	26 (66.7%)	26 (66.7%)	0.999
MBI Emotional exhaustion	23.82 (11.86)	28.00 (12.17)	0.129
MBI Depersonalization	7.38 (5.99)	8.08 (7.4)	0.651
MBI Personal accomplishment	38.87 (5.69)	35.31 (8.57)	0.033
Resilience scale	83.02 (13.87)	83.64 (11.63)	0.830
Perceived stress scale	24.00 (8.35)	26.38 (7.51)	0.189
NIH PROMIS fatigue	26.08 (7.79)	28.31 (8.41)	0.228
Depression	17.46 (5.22)	17.92 (5.98)	0.718

Note. TM:  $n = 39$ ; Control:  $n = 39$ ; SD = Standard Deviation; MBI = Maslach Burnout Inventory, NIH PROMIS = National Institutes of Health Patient-Reported Outcomes Measurement Information System.

## Fatigue and Depression

The National Institutes of Health Patient-Reported Outcomes Measurement Information System (NIH PROMIS) fatigue (10-item) and depression (8-item) scales were used as additional secondary outcomes for physical health and mental health, respectively (Broderick et al., 2013). In the current study, both the depression and fatigue scales had high internal consistency (Depression: baseline  $\alpha = 0.91$ , follow-up  $\alpha = 0.93$ ; Fatigue: baseline  $\alpha = 0.94$ , follow-up  $\alpha = 0.95$ ).

## Statistical Analysis

For all outcomes, data was analyzed using analysis of covariance (ANCOVA), with adjusted mean change as the dependent variable, treatment group as the independent variable, and baseline dependent variable as the covariate. Intention-to-treat with all 78 subjects was used for all analyses. Missing data was imputed using last observation carried forward (LOCF), a conservative method of imputing missing data in longitudinal studies. Effect size (Cohen’s  $d$ ) was determined by between-group mean differences divided by pooled baseline standard deviation.

## RESULTS

### Baseline

The overall average age of the participants was 43.83 (SD = 13.43), with 67% being female. Eighty-one percent of the participants were classroom teachers (with 19% being support staff). The majority of participants were Caucasian (53%), followed by 22% Asian, 3% Latino, 8% African American, and 14% other.

The only significant difference between groups was found on the MBI depersonalization scale ( $p = 0.03$ ). No other significant differences were found between groups on demographic and baseline measures (see **Table 1**).

### Outcomes

Results showed significant reductions on the primary outcome of the study, emotional exhaustion, the main scale of the Maslach Burnout Inventory (MBI), for the meditation group compared to controls [ $F(1, 75) = 5.73, p = 0.019, d = 0.44$ ]. Additional analysis did not show a significant interaction effect with school location,

**TABLE 2** | Between-group comparisons of study outcomes.

Variables	Control group adjusted mean change (CI 95%)	TM group adjusted mean change (CI 95%)	p value	Effect size
MBI Emotional exhaustion	-0.68 (-3.77, 2.41)	-5.96 (-9.05, -2.88)	0.019	0.44
MBI Depersonalization	-0.63 (-2.09, 0.83)	-1.42 (-2.89, 0.04)	0.445	0.12
MBI Personal accomplishment	0.24 (-1.59, 2.07)	1.58 (-0.25, 3.41)	0.311	0.18
Perceived stress	-0.75 (-2.53, 1.02)	-5.63 (-7.41, -3.86)	<0.001	0.61
Resilience	0.86 (-1.63, 3.35)	5.34 (2.85, 7.83)	0.014	0.35
Fatigue	-0.67 (-2.60, 1.27)	-5.26 (-7.19, -3.33)	0.001	0.56
Depression	-1.35 (-2.69, -0.04)	-2.95 (-4.27, -1.64)	0.091	0.29

Note. TM:  $n = 39$ ; Control:  $n = 39$ ; adjusted mean change score (confidence interval 95%), covaried for baseline dependent variable; Effect size = Cohen's  $d$ .

indicating that teachers at the various school locations had similar benefits on emotional exhaustion [F (1,72) = 0.61,  $p = 0.55$ ]. Changes on other MBI scales were in the predicted direction but did not reach statistical significance: depersonalization [F (1, 75) = 0.590,  $p = 0.445$ ] and personal accomplishment [F (1, 75) = 1.04,  $p = 0.311$ ].

Analysis of other secondary outcomes showed significant reductions for the meditation group compared to controls on perceived stress [F (1, 75) = 14.808,  $p < 0.001$ ,  $d = 0.61$ ]; fatigue [F (1, 75) = 11.12,  $p = 0.001$ ,  $d = 0.56$ ]; and depression [F (1, 75) = 2.94,  $p = 0.091$ ,  $d = 0.29$ ] and a significant improvement in resilience [F (1, 75) = 6.4,  $p = 0.014$ ,  $d = 0.35$ ]. (See **Table 2**).

A significant relationship was observed between change in emotional exhaustion and change in resilience ( $r = -0.33$ ,  $p = 0.003$ ). For the other secondary variables, change in emotional exhaustion was associated with change in perceived stress ( $r = 0.504$ ,  $p < 0.001$ ), change in fatigue ( $r = 0.44$ ,  $p < 0.001$ ), and change in depression ( $r = 0.37$ ,  $p < 0.001$ ).

## Treatment Fidelity

Compliance with the meditation program was defined as meditating at least once a day on average. Eighty-seven percent ( $n = 34$ ) reported practicing meditation at least once a day on average, with 38% ( $n = 15$ ) meditating twice a day on average.

## DISCUSSION

Results from this study showed significant improvement in emotional exhaustion (the main factor in burnout), resilience, perceived stress, fatigue, and depression for those practicing meditation compared to controls. These findings are consistent with previous research on this meditation practice (Sheppard et al., 1997; Elder et al., 2014; Wendt et al., 2015; Nidich et al., 2018; Valosek et al., 2018).

A possible mechanism for how this mind-body meditation program reduces burnout is by decreasing physiological overactivation. Research has shown that the TM program reduces psychological and physiologic responses to stress factors, as evidenced by decreased sympathetic nervous system and hypothalamic-pituitary-adrenal (HPA) axis activity, including elevated 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).

Further, meditation has been linked to positive emotional well-being and behavior, which may be a buffer to burnout. Prior research on this mind-body program has shown increased resilience, improved mood, including happiness and optimism, positive coping ability, interpersonal relationships, and self-actualization (Alexander et al., 1991; Nidich et al., 2009; Wendt et al., 2015; Valosek et al., 2018). In this study, change in resilience was associated with change in emotional exhaustion on the MBI, after controlling for baseline emotional exhaustion (beta = -0.277,  $p = 0.006$ ).

The findings have important implications for schools throughout the United States and in other countries. Emotional exhaustion is held as an important contributing factor to teacher attrition (Leung and Lee, 2006; Skaalvik and Skaalvik, 2010), which is a growing and costly concern (Haynes, 2014). Roughly half a million United States teachers either move or leave the profession each year, costing government up to \$2.2 billion annually. Schools located in high poverty areas are especially affected, with a teacher turnover rate 50 percent higher than the rate in more affluent schools (Haynes, 2014).

Teacher burnout is also suggested to negatively impact student academic performance (Reyes et al., 2012), due to decreasing levels of commitment to students, lack of teacher preparedness, and teacher absenteeism (Jacobson, 2016). Increased absenteeism brings about a cascade of events resulting in students learning from less qualified substitute teachers, and eventually leads to higher teacher attrition, as cited above (Jacobson, 2016). The emotional climate of schools further suffers as teachers experience burnout and other emotional problems, which impacts student engagement and learning (Anderson and Iwanicki, 1984; Brackett et al., 2010; Reyes et al., 2012).

Programs for promoting emotional wellness and health in teachers and building healthy emotional climates, which are associated with positive student learning, are often missing from teacher training and professional development programs (Reyes et al., 2012). The results of this randomized controlled trial indicate that Transcendental Meditation may be an effective evidence-based program that can reduce teacher emotional exhaustion and other psychological distress factors, and increase

resilience. Importantly teachers were able to adhere to program practice on a daily basis, indicating the feasibility of implementing this mind-body program in a school in-service teacher program.

Study strengths include a randomized controlled design, with subjects allocated to either immediate start of meditation or wait-list control groups. Compliance with the meditation program was high. Due to constraints on administration and funding of the project and study, it was not possible to have an active treatment control group. Future research should be encouraged to use time and attention controls. The generalizability of study results is limited to staff who would be interested in participating in a meditation program. Future research should further investigate effects of stress reduction on long-term effects of school staff behavioral and physical health, such as obesity, alcohol use, blood pressure, and other cardiovascular disease risk factors.

## CONCLUSION

This was the first study to investigate the effects of a teacher development program with meditation on both burnout and resilience, two important factors related to overall mental health. The results of this study indicate that Transcendental Meditation may provide an effective antidote to the psychological distress experienced by teachers and is a significant facilitator of resilience, the ability to cope with obstacles and challenges in one's life. Based on findings from the current study and previous research, teachers could benefit from a meditation-based in-school teacher development program.

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## DATA AVAILABILITY STATEMENT

The raw data supporting the conclusions of this article will be made available by the authors, without undue reservation.

## ETHICS STATEMENT

The studies involving human participants were reviewed and approved by the San Francisco Unified School District-Research, Planning, and Assessment Department. The patients/participants provided their written informed consent to participate in this study.

## AUTHOR CONTRIBUTIONS

LV: principal investigator SW: data analysis, interpretation of data, writing of paper JL: study design, writing of paper AA: data analysis, interpretation of data, writing of paper JH: interpretation of data and writing of paper JG: study design, interpretation of data, review of paper RN: study design, interpretation of data, writing of paper ML: literature review, review of paper SN: study design, data analysis, interpretation of data, writing of paper.

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**Conflict of Interest:** The authors declare that the research was conducted in the absence of any commercial or financial relationships that could be construed as a potential conflict of interest.

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