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# Effects of Mindfulness Training on School Teachers' Self-Reported Personality Traits As Well As Stress and Burnout Levels

**Anastasia Fabbro[1,2], Franco Fabbro[2,3], Viviana Capurso[2], Fabio D'Antoni[1] and Cristiano Crescentini[4]**

**Abstract**

Among a sample of only female school teachers, we compared a mindfulness meditation (MM) training group ($n = 19$) with a waiting-list control group ($n = 20$) on several participant-completed questionnaires: the Five Facet Mindfulness Questionnaire, the Big Five Personality Inventory, the Teacher Stress Inventory, and the Maslach Burnout Inventory. With these measures, we assessed the participants' dispositional mindfulness, personality styles, and their stress and burnout. Following mindfulness training, teachers in the MM group showed higher trait mindfulness and conscientiousness and lower neuroticism and stress and burnout levels than teachers in the waiting-list control group. These results support the beneficial role of MM in individuals' effective management of stressful conditions in the workplace.

[1]Department of Psychology, Sapienza University of Rome, Italy
[2]Department of Medicine, University of Udine, Italy
[3]PERCRO Perceptual Robotics Laboratory, Scuola Superiore Sant'Anna, Pisa, Italy
[4]Department of Languages and Literatures, Communication, Education and Society, University of Udine, Italy

**Corresponding Author:**
Anastasia Fabbro, University of Udine, Via Margreth 3, Udine 33100, Italy.
Email: anastasia.fabbro@gmail.com

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Mindfulness meditation (MM) is a form of meditative practice originally developed in the Buddhist tradition and introduced over the past 30 years in the West (Baer, 2003; Kabat-Zinn, 2003). Mindfulness refers to a quality of self-awareness that can be described as the individual's awareness of and attention to one's here-and-now mental and somatosensory experience (e.g., thoughts, emotions, and bodily sensations). The tendency, varying across individuals, to remain in mindful states over time can be defined as dispositional mindfulness or trait mindfulness (Brown et al., 2007). MM is aimed to develop this quality of consciousness, promoting a nonjudgmental attitude in which people are invited to not attempt to change their own feelings, thoughts, and sensations but, rather, to simply observe and accept them (Brown & Ryan, 2003). In the past 20 years, empirical research on MM has rapidly grown, documenting MM's beneficial effects on mental health, including, for instance, the reduction of anxiety, stress, and depression symptoms (Baer, 2003; Chiesa & Serretti, 2010; see also a meta-analysis by Khoury et al., 2013 and a meta-analytic review by Hofmann et al., 2010).

Other studies have also focused on MM and its effects on trait personality characteristics. In particular, the continuous practice of MM has been shown to promote positive changes in individuals' personality/character traits and self-concept (Campanella et al., 2014; Crescentini & Capurso, 2015; Crescentini et al., 2018; Giluk, 2009). One of the most common instruments employed in this research has been the Big Five Personality Inventory (BFI; Costa & McCrae, 1992), addressing five separate personality traits: (a) extraversion (related to positive affectivity and sociality); (b) neuroticism (reflecting negative affectivity, such as anxiety or depression); (c) agreeableness (encompassing empathy, cooperation, and altruism); (d) conscientiousness (related to self-discipline, self-efficacy, and control); and (e) openness to experience (reflecting curiosity for cognitive exploration; see also DeYoung, 2010). In a meta-analysis, dispositional mindfulness was found to be negatively associated with neuroticism and negative emotions and positively associated with conscientiousness (Giluk, 2009). Furthermore, MM has been related to high levels of openness to experience and positive affect (Van den Hurk et al., 2011).

From another perspective, MM has been employed as a potential intervention for improving individuals' psychological well-being and workplace outcomes, with specific tests of whether it might be useful to foster coping skills for work-related stress and burnout. Indeed, prior research has shown that mindfulness-based interventions may help caregiving professionals (e.g., teachers, nurses, physicians) cope with possible burnout symptoms (e.g.,

Poulin et al., 2008; see also Luken & Sammons, 2016 and Lomas, Medina, Ivtzan, Rupprecht, Hart, et al., 2017, for systematic reviews). Burnout refers to "a state or process of mental exhaustion, p. 1" (Schaufeli, 2003), and it has been widely investigated through the popular Maslach Burnout Inventory (MBI; Maslach & Jackson, 1981; see also Maslach et al., 2001). Within the MBI theoretical framework, burnout is a syndrome characterized by emotional exhaustion and negative feelings and attitudes, both toward one's work (lack of personal accomplishment) and toward others, possibly leading to an excessively detached response to the job (depersonalization).

Within the teaching work context, mindfulness-based training programs have been developed and implemented to improve teachers' resilience to stress and their sense of self-efficacy (Meiklejohn et al., 2012). Other studies showed that mindfulness practice can reduce teachers' stress symptoms and improve their well-being and performance (see Emerson et al., 2017, Hwang et al., 2017, and Lomas, Medina, Ivtzan, Rupprecht, & Eiroa-Orosa, 2017, for systematic reviews, and Klingbeil & Renshaw, 2018, for a meta-analysis concerning mindfulness-based interventions for teachers). In particular, past studies have revealed that mindfulness-based interventions help teachers reduce levels of depression, anxiety, stress, and self-criticism, as well as symptoms of burnout and time pressure, while they also improve emotion regulation (Flook et al., 2013; Franco et al., 2010; Gold et al., 2010; Hwang et al., 2019; Jennings et al., 2013, 2017; Roeser et al., 2013). Furthermore, after mindfulness-based trainings, teachers have reported greater mindfulness, awareness of sensations, feelings and thoughts, self-compassion and sense of self-efficacy, as well as more positive classroom interactions (Flook et al., 2013; Hwang et al., 2019; Jennings et al., 2013, 2017; Roeser et al., 2013). Enhancements of self-compassion have also been reported by Frank et al. (2015), who found that after mindfulness-based stress reduction (MBSR) training (e.g., Kabat-Zinn, 2003), teachers reported higher levels of calmness, mindfulness and self-regulation, and better sleep quality while decreasing their self-judgment and overidentification with their work.

Other studies have focused on the development of dispositional mindfulness as an inner resource for helping to manage stressful experiences. In particular, teachers who were shown to be more mindful in daily life were found to experience higher quality relationships with the children they taught (see Becker et al., 2017) or higher levels of emotionally supportive student interactions (see Braun et al., 2019). Mindfulness skills have also been shown to be related to lower levels of job-related stress and occupational burnout and to lower anxiety and depression symptoms (Braun et al., 2019).

While many studies have shown the efficacy of mindfulness interventions for enhancing teachers' well-being (Emerson et al., 2017; Hwang et al., 2017; Lomas, Medina, Ivtzan, Rupprecht, & Eiroa-Orosa, 2017), to our knowledge, there have been no investigations of the effects of MM on teachers' self-reported personality profiles. Nevertheless, this appears to be a relevant issue, as teachers'

personalities may be key to education outcomes; indeed, there is current interest in further investigating the effects of personality on teaching and education (Göncz, 2017) and on teacher effectiveness (Kim et al., 2019; Klassen & Tze, 2014). For example, in their meta-analysis, Kim et al. (2019) found that extraversion, conscientiousness, emotional stability, and openness to experience (Big Five facets) were significantly related to teachers' effectiveness.

Teacher burnout itself appears to be the result of an interaction between certain job characteristics and individual psychological factors (see Chang, 2009). A few studies have stressed the importance of personality structure in a predisposition toward burnout among teachers. Neuroticism has been found to be a common predictor of emotional exhaustion (Kokkinos, 2007; Pishghadam & Sahebjam, 2012) and depersonalization (Kokkinos, 2007), and conscientiousness has been found to be negatively related to depersonalization and positively related to personal accomplishment (Kokkinos, 2007). Another study (Cano-García et al., 2005) provided similar results in its finding that teachers with high levels of neuroticism and introversion, or with low scores in agreeableness, when compared with teachers with other personality characteristics, obtained the highest scores in burnout. More recently, in their meta-analysis, Kim et al. (2019) found that emotional stability, extraversion, and conscientiousness were negatively associated with burnout (even though effects were not statistically significant).

In light of these previous research findings, the aim of the present study was to specifically explore the effects of MM on both teachers' self-reported personality traits and their perceived stress and burnout. We hypothesized that teachers exposed to MM, compared with a waiting-list control experience, would report (a) a general increase in dispositional mindfulness, (b) a reduction of neurotic tendencies, and (c) a reduction of perceived burnout and job-related stress.

## Method

### *Participants*

Forty teachers employed at different levels of education in a comprehensive school in northeast Italy voluntarily participated in this research. All participants were recruited through advertisements and by word of mouth from employees of the school. Because 39 participants were female, we excluded the only male participant from the study sample, leaving the final group composed of 39 female teachers (see Table 1). We assigned the first 19 participants recruited (five kindergarten teachers, eight primary school teachers, and six middle school teachers) to a mindfulness-oriented meditation (MOM) group. To control for possible influence of education level, age, gender, degree of teaching, and motivation on the measured psychological variables,

**Table 1.** Participants' Demographic Characteristics.

| | MOM group ($n = 19$) | | Control group ($n = 20$) | |
|---|---|---|---|---|
| | *M*s (*SD*s)/*n* | Range (min–max) | *M*s (*SD*s)/*n* | Range (min–max) |
| *Demographic measures* | | | | |
| Age (years) | 51.47 (9.18) | 28–63 | 50.15 (8.28) | 34–60 |
| Gender (female/male) | 19 | _ | 20 | _ |
| Educational level (years) | 14.73 (2.68) | 12–18 | 14.65 (2.48) | 12–18 |

*Note.* MOM = Mindfulness-Oriented Meditation.

we also recruited control participants among the employees of the same school: Each MOM participant was asked to recruit in the study a colleague who was interested in participating in a future MOM course. The waitlist control group consisted of 20 participants (six kindergarten teachers, eight primary school teachers, and six middle school teachers). Independent-samples *t* tests showed that MOM and control participants were not significantly different in their age or years of education (Table 1).

We obtained informed consent for research participation (i.e., assessment) from all participants, and all study procedures were conducted in accordance with the ethical standards of the local Ethics of the University of Udine.

## Procedure

*Self-Report Questionnaires.* We administered four self-report questionnaires to all participants over two testing sessions; these instruments assessed, respectively, dispositional mindfulness, personality traits, perceived stress, and burnout. The MOM group completed the questionnaires before and after the MOM training, while the control group completed the self-report measures in two temporally matched sessions.

We measured dispositional mindfulness through the 39-item Five Facet Mindfulness Questionnaire (FFMQ; Baer et al., 2006; Giovannini et al., 2014). The FFMQ encompasses five subscales that refer to five facets of mindfulness: observing (obs), describing (des), acting with awareness (act), nonjudging of inner experience (nonjud), and nonreactivity (nonrea) to inner experience. Respondents are asked to answer on a 5-point Likert scale (1 = *never or very rarely true*, 5 = *very often or always true*). The Italian validation of the FFMQ (Giovannini et al., 2014) showed good reliability, with Cronbach's $\alpha = .86$ for the total score and $\alpha \geq .74$ for the subscales.

We assessed personality traits through a 44-item version of the BFI (Costa & McCrae, 1992; John et al., 1991; Ubbiali et al., 2013), to which participants responded on a 5-point Likert scale. The BFI assesses the five previously

mentioned personality traits of extraversion, neuroticism, agreeableness, conscientiousness, and openness to experience. The Italian version of the BFI (Ubbiali et al., 2013) was shown to be reliable (Cronbach's αs from .69 to .83).

We assessed occupational stress through the Teachers Stress Inventory (TSI; Fimian, 1984, 1988), which was shown to have a good internal consistency (whole scale $\alpha = .93$, Fimian & Fastenau, 1990). Teachers answered 49 items on a 5-point Likert scale. Items covered 10 dimensions: time management, work-related stressors, professional distress, discipline and motivation, professional investment, emotional manifestations, fatigue manifestations, cardiovascular manifestations, gastronomical manifestations, and behavioral manifestations. The TSI measure was translated in Italian by two Italian–English bilinguals. For the analysis, only TSI total scores were considered.

Finally, we used the MBI Educators' Survey (Maslach et al., 1996; Sirigatti & Stefanile, 1993) to assess teachers' burnout. This questionnaire consists of 22 items on three scales: emotional exhaustion (drying up of emotional energies); depersonalization (negative, distancing attitudes toward students); and lack of personal accomplishment from the job. Respondents indicated how often they felt in a certain way in relation to their job, using a 7-point Likert scale ($0 = never$, $6 = daily$). Our statistical analyses considered both the MBI global scores and the emotional exhaustion subscale. The latter is considered a core aspect of the burnout syndrome (Maslach & Jackson, 1981), particularly in relation to women teachers (Chang, 2009; see also Keller et al., 2014). The Italian version of MBI for educators (Sirigatti & Stefanile, 1992, 1993) found Cronbach's alphas ranging from .63 to .86.

*Mindfulness-Oriented Meditation.* Participants in the experimental group attended a mindfulness program called MOM, developed by Fabbro and Muratori (2012). MOM has been applied in several recent psychological studies in both normal and clinical populations (Campanella et al., 2014; Crescentini et al., 2014, 2018; Matiz et al., 2018). MOM training was inspired by MBSR, the program developed and standardized by Jon Kabat-Zinn (1994, 2003, 2006) at the end of the 1970s. MBSR is an eight-week MM program consisting of about 2-hour weekly sessions over eight weeks and 45 minutes of daily meditation practice during this period. Each weekly meditative session can include the practice of awareness of breath, body and mind, hatha yoga exercises, and walking meditation (progressively introduced over the eight weeks) and a space for discussion and psychoeducation, for example, on the mechanisms of coping with stress in one's daily life. Moreover, between the sixth and the seventh sessions, MBSR participants are also involved in a brief (i.e., 7-hour) mindfulness retreat.

Similar to the MBSR program, the MOM training for this study was organized into eight weekly sessions. Every session began with a discussion of a theme concerning MM (up to 30 minutes on themes such as operating in the automatic pilot mode and reactivity to and coping with stress), and sessions

continued with an MOM practice session of 30 minutes before ending with a final discussion about participants' daily meditation experience (up to one hour). Differently from MBSR, the MOM practice we used was kept fixed throughout the course and consisted of 10 minutes of *ānāpānasati* (mindfulness of breathing), 10 minutes of body contemplation (body scan), and 10 minutes of *vipassanā* meditation (observation of the states of the mind such as thoughts, emotions, and sensations). Moreover, MOM participants were not involved in any intensive mindfulness retreat during the 8-week course.

Participants in the present research were asked to meditate daily at home following the same 30-minute practice session as in the group session, and they were asked to note the times and duration of each daily meditation in a meditation diary. After the first meeting, we gave a 30-minute guided meditation audio file to participants to help them in daily practice. From the meditation diaries, collected at the end of the MOM course, we learned that participants carried out, on average, five meditation sessions per week ($M = 5.24$, $SD = 0.77$) and meditated, on average, 154 minutes a week ($M = 153.66$, $SD = 38.44$).

### *Statistical Analysis*

For the analysis of the FFMQ, BFI, TSI, and MBI data, we performed mixed-model analyses of variance (ANOVAs) on the group mean scores for each self-report measure with Session (Session 1 and Session 2) as the within-subject factor and Group (MOM and controls) as the between-subject factor. All post hoc tests were corrected for multiple comparisons according to the Duncan procedure. We used a statistical significance threshold of $p < .05$ in all the statistical tests, and we reported effect sizes as partial eta squared ($\eta_p^2$). The data were analyzed with STATISTICA 8 (StatSoft, Inc., Tulsa, OK). The data that support the findings of this study are available from the corresponding author upon request.

## Results

### *Five Facet Mindfulness Questionnaire*

On the basis of a 2 (Session: Session 1 and Session 2) $\times$ 2 (Group: MOM and controls) $\times$ 5 (Scale: obs, des, act, nonjud, nonrea) mixed-model ANOVA carried out on the FFMQ scores, there was a significant main effect of Scale, $F(4, 148) = 9.11$, $p < .001$, $\eta_p^2 = .197$. This finding was qualified by a significant two-way interaction involving Scale and Group, $F(4, 148) = 2.94$, $p = .022$, $\eta_p^2 = .073$. Post hoc tests showed that this interaction was due in particular to the describe (des) mindfulness facet of the FFMQ, as the mean score for this scale was higher for the MOM versus control participant group ($p = .011$; Table 2). The analysis also showed a significant interaction between Session and

Group, $F$ (1, 37) = 6.64, $p = .014$, $\eta_p^2 = .152$. Post hoc tests for this interaction showed higher FFMQ scores at Session 2 versus Session 1 for the MOM group participants ($p = .004$) but not for controls (Table 2). No other main effects or interactions were significant. Thus, MOM training led to higher scores on the FFMQ at Session 2 than Session 1, only among MOM participants, indicating higher dispositional mindfulness for these participants.

### *Big Five Personality Inventory*

We conducted a 2 (Session: Session 1 and Session 2) × 2 (Group: MOM and controls) × 5 (Scale: extraversion, neuroticism, agreeableness, conscientiousness, and openness) mixed-model ANOVA on the participants' BFI scores. This ANOVA showed a significant main effect of Scale, $F(4, 148) = 15.17$, $p < .001$, $\eta_p^2 = .290$, a two-way interaction between Session and Scale, $F(4, 148) = 3.27$, $p = .013$, $\eta_p^2 = .081$, and a significant three-way interaction involving Session, Scale, and Group, $F(4, 148) = 3.51$, $p = .008$, $\eta_p^2 = .086$. In particular, post hoc tests executed for the three-way interaction revealed a specific increase in conscientiousness after the MOM training among MOM participants ($p = .046$), but not among controls, and a decrease in neuroticism after the training in the MOM group ($p < .001$) but not the control group (Table 2). Post hoc analyses also showed, unexpectedly, that MOM and controls differed in extraversion (MOM > controls) in both Session 1 and Session 2 (both $p < .015$). No other main effects or interactions were significant. In sum, analysis on the personality traits showed that the MOM training led to specific increases in conscientiousness and reductions in neuroticism among MOM participants.

### *Teachers Stress Inventory*

We conducted a 2 (Session: Session 1 and Session 2) × 2 (Group: MOM and controls) mixed-model ANOVA on the participants' TSI global scores. This ANOVA showed a significant interaction between Session and Group, $F(1, 37) = 4.46$, $p = .041$, $\eta_p^2 = .107$. Further post hoc testing, as shown in Table 2, revealed a significant decrease of TSI scores in the MOM group ($p = .010$) at Session 2 versus Session 1, not evident in the control group. No other significant effects were found. The MOM training thus led to a lower perception of stress in mindfulness meditators.

### *Maslach Burnout Inventory*

We carried out a 2 (Session: Session 1 and Session 2) × 2 (Group: MOM and controls) mixed-model ANOVA on the participants' MBI global scores and on the emotional exhaustion subscale. While we found no significant effects for global scores, there was a significant effect of Session and a trend toward a significant interaction between Session and Group on the emotional exhaustion

**Table 2.** Self-Report Questionnaire Scores (*M*s, *SD*s, Range (Min/Max), 95% Confidence Interval for *M*s) in Testing Sessions 1 and 2 for Mindfulness-Oriented Meditation (MOM) and Control Participants.

| | MOM group ($n = 19$) | | Control group ($n = 20$) | |
|---|---|---|---|---|
| | Session 1 | Session 2 | Session 1 | Session 2 |
| FFMQ Observe | 3.42 | 3.51 | 3.17 | 2.97 |
| | 0.65 | 0.55 | 0.65 | 0.65 |
| | 2.25/4.37 | 2.37/4.37 | 1.62/4.25 | 1.87/4.37 |
| | 3.10/3.73 | 3.24/3.77 | 2.86/3.47 | 2.66/3.28 |
| FFMQ Describe | 3.67 | 3.89 | 3.17 | 3.27 |
| | 0.60 | 0.51 | 0.79 | 0.74 |
| | 2.25/4.87 | 2.87/4.87 | 2.25/4.75 | 1.87/4.62 |
| | 3.38/3.96 | 3.64/4.13 | 2.80/3.54 | 2.92/3.61 |
| FFMQ Act with Awareness | 3.40 | 3.62 | 3.66 | 3.61 |
| | 0.70 | 0.68 | 0.55 | 0.63 |
| | 2.12/4.75 | 2.37/4.75 | 2.50/4.50 | 2.37/4.62 |
| | 3.06/3.74 | 3.29/3.95 | 3.40/3.92 | 3.31/3.90 |
| FFMQ Nonjudge | 3.48 | 3.76 | 3.71 | 3.73 |
| | 0.73 | 0.78 | 0.91 | 0.87 |
| | 1.62/4.62 | 2.00/4.87 | 1.62/5.00 | 2.12/4.87 |
| | 3.12/3.83 | 3.38/4.13 | 3.28/4.13 | 3.32/4.13 |
| FFMQ Nonreact | 3.01 | 3.22 | 2.96 | 2.88 |
| | 0.52 | 0.43 | 0.54 | 0.51 |
| | 2.00/4.00 | 2.57/4.43 | 1.71/4.00 | 2.00/3.86 |
| | 2.76/3.26 | 3.01/3.43 | 2.70/3.21 | 2.64/3.11 |
| Big Five Inventory—Extraversion | 3.51[a] | 3.56[a] | 3.06[a] | 3.19[a] |
| | 0.63 | 0.55 | 0.88 | 0.83 |
| | 2.50/5.00 | 2.37/4.75 | 1.50/4.37 | 1.75/4.75 |
| | 3.21/3.81 | 3.29/3.82 | 2.64/3.47 | 2.79/3.57 |
| Big Five Inventory—Agreeableness | 3.93 | 4.08 | 3.81 | 3.88 |
| | 0.54 | 0.47 | 0.58 | 0.53 |
| | 2.67/4.89 | 2.89/5.00 | 2.67/4.78 | 2.78/4.67 |
| | 3.66/4.19 | 3.85/4.31 | 3.53/4.08 | 3.62/4.12 |
| Big Five Inventory—Conscientiousness | 3.72 | 3.90[b] | 3.94 | 3.88 |
| | 0.65 | 0.67 | 0.51 | 0.59 |
| | 2.78/5.00 | 2.55/5.00 | 3.11/5.00 | 2.78/5.00 |
| | 3.40/4.03 | 3.57/4.22 | 3.70/4.17 | 3.60/4.15 |
| Big Five Inventory—Neuroticism | 3.21 | 2.91[b] | 3.04 | 3.06 |
| | 0.79 | 0.85 | 0.61 | 0.67 |
| | 1.37/4.50 | 1.50/4.50 | 2.25/4.25 | 1.87/4.25 |
| | 2.82/3.59 | 2.49/3.31 | 2.75/3.32 | 2.74/3.37 |

(continued)

**Table 2.** Continued.

| | MOM group ($n = 19$) | | Control group ($n = 20$) | |
|---|---|---|---|---|
| | Session 1 | Session 2 | Session 1 | Session 2 |
| Big Five Inventory—Openness | 3.96 | 3.99 | 3.76 | 3.84 |
| | 0.49 | 0.60 | 0.64 | 0.67 |
| | 3.20/4.80 | 2.80/5.00 | 2.80/5.00 | 2.80/5.00 |
| | 3.71/4.19 | 3.70/4.27 | 3.46/4.05 | 3.52/4.16 |
| TSI | 2.71 | 2.47[b] | 2.51 | 2.52 |
| | 0.39 | 0.50 | 0.56 | 0.63 |
| | 1.81/3.40 | 1.49/3.29 | 1.52/3.56 | 1.57/3.76 |
| | 2.52/2.90 | 2.22/2.71 | 2.24/2.77 | 2.22/2.81 |
| MBI | 39.05 | 33.26 | 36.50 | 36.20 |
| | 13.42 | 12.18 | 18.19 | 18.67 |
| | 18.00/67.00 | 15.00/55.00 | 5.00/67.00 | 8.00/71.00 |
| | 32.58/45.52 | 27.39/39.13 | 27.98/45.01 | 27.46/44.93 |
| MBI Emotional exhaustion | 2.55 | 2.03[b] | 2.20 | 2.14 |
| | 0.85 | 1.00 | 1.25 | 1.15 |
| | 0.80/3.70 | 0.50/3.80 | 0.30/4.30 | 0.20/4.30 |
| | 2.13/2.95 | 1.55/2.51 | 1.61/2.78 | 1.60/2.67 |

*Note.* FFMQ = Five-Facet Mindfulness Questionnaire; TSI = Teacher Stress Inventory; MBI = Maslach Burnout Inventory.

[a]Significant difference between MOM and control groups ($p < .05$).

[b]Significant difference between Session 1 and Session 2 in the MOM group ($p < .05$).

subscale, $F(1, 37) = 5.85$, $p = .020$, $\eta_p^2 = .136$ and $F(1, 37) = 3.65$, $p = .063$, $\eta_p^2 = .089$, respectively. Post hoc testing executed for the interaction revealed a decrease in emotional exhaustion scores at Session 2 versus Session 1 among the MOM group ($p = .006$) but not among the control group participants. These results highlight a marginal effect of the MOM training in reducing emotional exhaustion among MOM participants.

## Discussion

The aim of the present study was to investigate the effects of an 8-week MOM program on a group of female teachers' personality traits, stress, and burnout. In particular, we hypothesized that participation in the MOM program would lead to increased dispositional mindfulness, reduced neurotic tendencies, and reduced perceived burnout and job-related stress, relative to participating in a waiting-list control group. We assessed dispositional mindfulness through the FFMQ (Baer et al., 2006), personality traits through the BFI (Costa & McCrae, 1992; John et al., 1991), perceived burnout through the MBI for educators

(Maslach et al., 1996), and perceived job-related stress through the Teacher Stress Inventory (TSI; Fimian, 1988).

Our results confirmed the research hypotheses. As predicted, we found that the 8-week MOM training increased teachers' dispositional mindfulness, an effect not seen among the control participants. As for changes in personality traits, after the mindfulness training, MOM participants (and not control participants) reported higher scores on the conscientiousness trait and lower scores on the neuroticism scale. Finally, teachers in the MOM group (but not control participants) perceived significantly lower job-related stress (TSI) and, more marginally, emotional exhaustion (a key aspect of burnout) following the 8-week mindfulness intervention.

Regarding the increase of dispositional mindfulness among the MOM participants, our result is consistent with previous studies that revealed higher scores on the FFMQ after introductory 8-week MM courses as well as among groups of long-term experienced meditators compared with nonmeditator participants (Baer et al., 2008; Carmody & Baer, 2008; De Bruin et al., 2012). With the practice of MM, individuals may become more attentive to their internal and external experiences, thus developing a nonjudgmental and nonreactive attitude (i.e., the facets of the FFMQ).

As concerned personality (BFI) findings, our study's results extend to the school teaching setting, similar to results from those few previous researchers that tried to investigate the impact of MM practice or dispositional mindfulness on individuals' personality (Crescentini et al., 2018; Giluk, 2009; Van den Hurk et al., 2011). For example, our results are consistent with previous studies on dispositional mindfulness and Big Five facets, which found trait mindfulness to be negatively related to neuroticism and positively related to conscientiousness (Giluk, 2009). It may be argued that attitudes associated with mindfulness, such as observing inner experiences without reacting to them while keeping a compassionate and nonjudgmental mental disposition, may favor mental clarity, self-acceptance and self-efficacy (higher conscientiousness), and contribute to reductions in anxiety and worry (lower neuroticism). Regarding the higher scores in conscientiousness obtained by our MOM group relative to waiting-list control participants, we may also assume that the daily practice of MM may affect one's sense of self-discipline and responsibility (e.g., Campanella et al., 2014).

Both conscientiousness and emotional stability appear to be highly significant in relation to work management; attentive and persistent people and individuals who are emotionally stable and able to cope with stress may perform their work more effectively and may then deal positively with daily stressful situations. In this regard, it is not surprising that both emotional stability (vs. neuroticism) and self-efficacy (i.e., conscientiousness) have been found to be valid predictors of job performance across different occupations, including teaching (Barrick et al., 2008). More specifically, the combination of personal characteristics

such as work engagement (reflected in ambition, dedication, and investment of energy and exertion in work) and resilience in teachers (reflected in mental stability and in the ability to emotionally distance from work and adequately deal with failures) has been shown to be important to teachers' self-regulation and to positively impact teaching efficacy and classroom outcomes (Klusmann et al., 2008).

Turning to TSI and MBI scores, our results are consistent with previous studies that reported reductions in teachers' perceived levels of burnout and stress after MM (Beshai et al., 2016; Flook et al., 2013). As stated in the introduction, teacher burnout seems to result from the interaction of organizational aspects of the job and psychological factors, such as an individual's judgments and perceptions about potential job stressors (see Chang, 2009). Mindfulness practice may help teachers reduce negative judgments and reactivity about their own emotions and job stressors, finally resulting in better resilience to stressful conditions.

Our findings further confirm the validity of mindfulness practice as a means of promoting teachers' well-being in the workplace. Cultivating mindfulness within the classroom helps to cultivate *habits of mind* such as awareness, insightfulness, and compassion, as well as cognitive and emotional flexibility, all of which are attitudes that may foster positive teacher–student relationships and improve teaching quality (Roeser et al., 2012, 2013).

Important limitations of the present research first include our restricted participant sample; future studies should extend these results to larger and more diverse samples of teachers, involving both male and female participants that would allow for gender-related analyses. In this regard, prior research has shown that females may tend to benefit more than males from MM trainings (Katz & Toner, 2013; see also Rojiani et al., 2017, for gender differences in a sample of university students, and Kang et al., 2018, for evidence in a sample of early adolescents). Nevertheless, we underline the importance of having considered for this study a sample of female teachers, as in Italy, most teachers of early education grades (kindergarten and primary school) are women.

Future research might also utilize a follow-up session to allow analyses of any long-term stability of the psychological changes assessed in the present short-term research. Moreover, future studies on MM and teaching should move away from an exclusive reliance on self-report measures to a broader array of objective outcome measures (e.g., physiological indexes of stress and arousal) as achieved recently by Roeser et al. (2013). A final limitation to this study concerns our use of waiting-list control participants versus an active comparison control group that might have received an alternative intervention. Although the inclusion of a nontreatment, waiting-list control group allowed us to control for the nonspecific effects of the elapsed time between the two testing sessions, we are unable to definitively ascribe to MM practice the changes observed in teachers' personality, stress, and dispositional mindfulness. MOM participants may

have received more than solely mindfulness practice in our study, as they could have benefited, for example, from an intimacy-inducing experience and community. Particularly given the repeated successes of mindfulness interventions in past research, future studies aimed at further testing the specific impact of mindfulness should compare mindfulness to other effective active conditions, which similarly require participants to meet in group, discuss concerns, and practice relaxing (e.g., MacCoon et al., 2012).

Overall, despite these limitations, our research produced relevant results confirming previous findings of the beneficial effects of MM on teachers' perceived levels of stress and emotional stability. Our results suggest that the practice of mindfulness may positively impact critical dimensions of teachers' personality traits, such as neuroticism and conscientiousness, which were found to be critically relevant in relation to work management and job performance, even in the school context. Uniquely, the present research connected two different lines of prior research—one that focused on the role of MM in reducing stress and burnout symptoms and one that addressed MM effects on personality traits—and demonstrated these MM benefits within the teaching profession. We showed in this study that psychological dimensions such as perceived occupational stress and burnout, dispositional mindfulness, and certain personality traits were positively altered by an 8-week MM program among teachers of students at various educational levels.

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## ORCID iDs

Anastasia Fabbro https://orcid.org/0000-0001-8702-5830
Fabio D'Antoni https://orcid.org/0000-0002-4509-6910

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## Author Biographies

**Anastasia Fabbro** holds a PhD in Psychology and Social Neuroscience (La Sapienza University, Rome). She works as a primary school teacher and she is interested in the study of character and personality.

**Franco Fabbro** is a neurologist with an interest in neuropsychology; he is a full professor of child neuropsychiatry in the Department of Languages and Literatures, Communication, Education and Society of the University of Udine.

**Viviana Capurso** holds a PhD in Psychology and Social Neuroscience from La Sapienza University in Rome. Her research interests involve mindfulness meditation as a tool to improve psychological and personal well-being in children and in adults.

**Fabio D'Antoni** is a psychotherapist and at present he is a PhD student in Psychology and Social Neuroscience (La Sapienza University, Rome).

**Cristiano Crescentini** is a neuroscientist with an interest in cognitive neuroscience, clinical psychology and mindfulness meditation; he is assistant professor at the Department of Languages and Literatures, Communication, Education and Society, University of Udine, Udine, Italy.