



# An Online Mindfulness Program for Teachers: A Feasibility Study of the DeStress Monday at School Program

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Accepted: 1 May 2023 / Published online: 25 May 2023

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## Abstract

**Objectives** Stress has deleterious effects on teachers' well-being and interactions with students. While in-person mindfulness programs have demonstrated benefits for teachers' mental health, in-person classes are often not feasible due to teachers' busy schedules. This study assessed four components of feasibility (implementation, demand, acceptability, and limited-efficacy testing) for an online mindfulness intervention for teachers.

**Method** A volunteer sample of 50 primary school teachers was recruited across three urban public schools and was offered a 9-week online mindfulness program (DeStress Monday at School). The program provided weekly mindfulness practices for (1) self-care and (2) classroom use to promote teacher and student stress management. Surveys and focus group discussions assessed program feasibility. Paired *t*-tests were used to evaluate pre-post changes in teacher well-being.

**Results** Most participants had no technical problems, providing general support for implementation. Support for program demand was mixed; while 85% of participants used practices at least once, some never used practices, and over half used practices only 1–3 times. Those who used practices generally rated their acceptability favorably. Qualitative analyses showed significant pre-post improvements in work-related and overall stress, depressive and anxiety symptoms, and sleep; those who used practices reported more benefits than those who did not. Qualitative data corroborated these findings, with teachers describing improved stress- and emotion-management following program use.

**Conclusions** Our findings suggest mindfulness can be delivered online to teachers and may enhance mental health and well-being. Next steps include conducting more rigorous research with a control condition to better understand potential program impact.

**Preregistration** This study is not preregistered.

**Keywords** Mindfulness · Teachers · Self-care · Prevention · Intervention · Online · Web-based

Public school teachers have challenging jobs. Those who work in under-resourced communities experience particularly high levels of job-related stress (Herman et al., 2018; Shernoff et al., 2011), increasing their risk for physical and psychological problems, including the state of emotional exhaustion known as burnout (Kyriacou, 2001; Schonfeld et al., 2017). One unfortunate result is a high rate of

job turnover for public school teachers (García & Weiss, 2019; Ryan et al., 2017). Sources of stress for public school teachers include heavy workloads, time pressure, limited resources, lack of control over school decisions, and student behavior issues stemming from unaddressed social and emotional needs that teachers may not be trained to manage (Collie et al., 2012; Richards, 2012; Shernoff et al., 2011). Teachers' busy schedules can make it challenging for them to participate in self-care activities (e.g., exercise), reducing their capacity to manage these professional challenges. Teacher stress and burnout, in turn, has negative impacts on their capacity to interact in effective and compassionate ways with their students (Jennings & Greenberg, 2009). Teacher-focused interventions that promote resilience and positive coping skills thus have potential both to improve

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teachers' emotional and physical health and to improve students' context for learning.

Mindfulness-based interventions may offer promise as a way to improve stress management for teachers (Emerson et al., 2017; Hwang et al., 2017; Jennings & Greenberg, 2009; Klingbeil & Renshaw, 2018; Lomas et al., 2017). Mindfulness practices provide training in how to bring attention and awareness to the present moment with curiosity and without judgment or reactivity (Paulson et al., 2017). Mindfulness has been found to improve regulation of thoughts and emotions, reducing stress, anxiety, and depression in clinical and community adult samples (Blanck et al., 2018; Hofmann et al., 2010; Khoury et al., 2013). Several mindfulness interventions for teachers have been developed, with encouraging results (Roeser et al., 2012).

One example of such an intervention is the Cultivating Awareness and Resilience in Education (CARE) for Teachers program (Jennings et al., 2011), a 3–4-day professional development program that includes mindfulness practices and activities designed to enhance compassion and empathy. CARE has been evaluated in pilot studies (Jennings et al., 2011, 2013) and a cluster randomized trial that showed positive program effects on teacher social and emotional competence and classroom interactions (Jennings et al., 2017). Several randomized studies (Benn et al., 2012; Crain et al., 2016; Roeser et al., 2013; Taylor et al., 2016) have been conducted to evaluate the Stress Management and Relaxation Techniques in Education program (SMART; Cullen & Brito, 2014), which includes content based on the Mindfulness-Based Stress Reduction program (Kabat-Zinn, 1990), emotion theory (Jha et al., 2010), and forgiveness and compassion training (Cohn & Fredrickson, 2010). SMART was found to reduce teacher stress as assessed by physiological stress indicators (Roeser et al., 2013) and to improve psychological functioning (Benn et al., 2012; Crain et al., 2016; Roeser et al., 2013) and appraisals of students (Taylor et al., 2016). Community Approach to Learning Mindfully (CALM) is a 16-week program that includes gentle yoga; CALM was found to have emotional and physical benefits for teachers, including improved blood pressure and cortisol awakening response, in a quasi-experimental study (Harris et al., 2016). These programs are delivered in person, and many require substantial time commitments; for instance, CARE involves 30 hr of in-person training, and SMART requires 20 hr.

In-person mindfulness interventions can pose significant feasibility challenges for teachers. Programs that require in-person attendance are burdensome for many teachers, given teachers' demanding schedules. Even brief programs scheduled with input from teachers to maximize convenience are difficult to implement and sustain. For instance, in a study by our team assessing a 6-session after-school yoga program for Baltimore City Public School teachers,

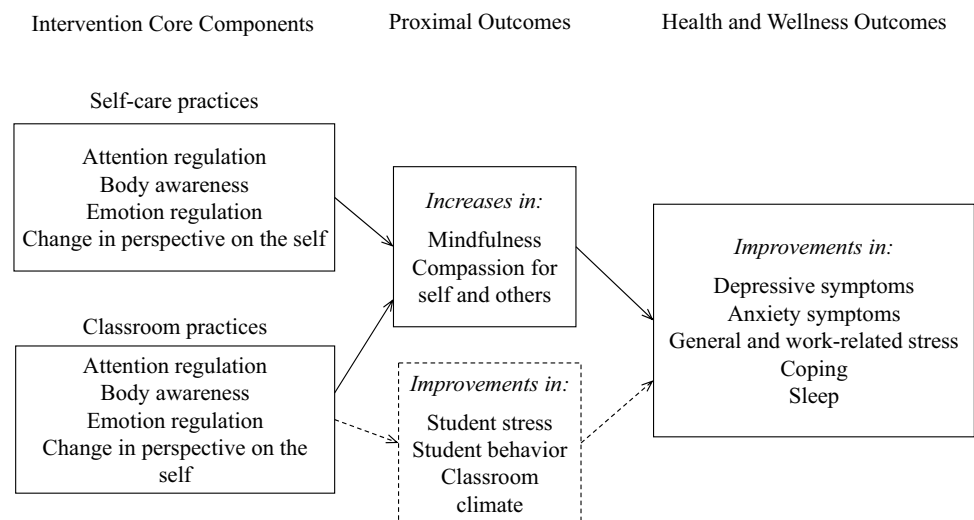
approximately 74% of teachers who were approached agreed to enroll in the study; 17% of the participants who enrolled dropped out before completion, and 72% of those retained in the intervention group received an adequate dosage (4 out of 6 sessions) (Ancona & Mendelson, 2014). Teacher interviews revealed that time pressures were a significant barrier to program participation (e.g., "As much as I liked coming to class, it was hard to walk away from all my after-school work at the end of the day") (Ancona & Mendelson, 2014). There is a need for alternative delivery methods to provide busy teachers with flexible and user-friendly access to mindfulness content.

Online mindfulness programming holds promise for addressing these feasibility concerns and has been found in emerging research to provide benefits for various populations (Mrazek et al., 2019). No studies to our knowledge, however, have tested an online mindfulness program for teachers. To address this gap, our team developed an online mindfulness intervention tailored for school teachers called DeStress Mondays at School. The intervention offers a variety of practices to enhance skills across four core mindfulness components: *attention regulation* (sustained, present-moment, non-judgmental focus), *body awareness* (attention directed to bodily sensations), *emotion regulation* (acceptance and non-reactivity toward emotional experiences), and *change in perspective on the self* (nonjudgmental identification and observation of thoughts, feelings, sensations, and other phenomena). Previous research suggests that these components of mindfulness benefit mental health and wellness (Hölzel et al., 2011).

The website offers two mindfulness "menus," one containing practices for self-care and the other offering practices for use with students in the classroom. Within each of these two menus, practices are organized into five thematic modules. Inclusion of both self-care and classroom menus, as well as selection of the five modules, was guided by formative interviews with teachers about their stressors and needs. Teachers shared that key sources of stress included lack of time for self-care, as well as challenges addressing student behavioral issues in the classroom and creating a calm classroom environment conducive to learning. We included a variety of mindfulness practices (e.g., basic yoga poses, walking mindfulness, attention to sounds, mindful coloring) to create opportunities for teachers to find at least one type of practice with which they connected. The practices each teach one or more of the core mindfulness components (attention regulation, body awareness, emotion regulation, change in perspective on the self).

Figure 1 displays a conceptual model of hypothesized intervention mechanisms of action. Based on mindfulness research with non-clinical samples (Khoury et al., 2015), intervention practices were conceptualized to improve intermediate or proximal outcomes (teacher mindfulness and

**Fig. 1** Conceptual model of intervention effects. Note: Proximal variables in the box with dashed lines were not assessed



compassion for self and others), leading to improvements in key domains of mental health and well-being (psychological distress, sleep, coping, and work-related and general stress). We anticipated that both self-care and classroom practices may have similar benefits for teachers given that practices in each menu embodied the four intervention core components. However, it is likely that mechanisms of action may differ somewhat across self-care and classroom practices, as classroom practices may improve teacher well-being in part through improvements in student stress, student behaviors, and classroom climate; we were unable to assess student and classroom factors directly in the current feasibility study.

This pre-post mixed methods study assessed feasibility of the DeStress Monday at School program in a volunteer sample of Baltimore City public school teachers. Bowen et al. (2009) proposed eight areas of focus appropriate for testing in feasibility studies. This study assessed four of those eight areas, i.e., *implementation* (capacity to deliver the intervention as planned), *acceptability* (participant satisfaction with the intervention), *demand* (participant use of the intervention), and *limited-efficacy testing* (preliminary exploration of intervention impacts), to evaluate whether the intervention merits more rigorous subsequent testing. Teachers completed self-report surveys at baseline and after 9 weeks of online program use, which assessed various domains of functioning, including general and occupational stress, sleep, coping, mindfulness, self-compassion, depressive symptoms, and anxiety symptoms, as well as aspects of program implementation, demand, and acceptability. Teacher focus groups were also conducted following online program completion to explore teacher experiences using the site and potential program impacts. We hypothesized that our data would support intervention acceptability, demand, and implementation and that qualitative themes and patterns in our quantitative data would suggest potential intervention

benefits for the proximal outcomes and health and wellness outcomes we assessed. We did not evaluate mediational pathways given the small sample size and feasibility focus of this study.

## Method

### Participants

Participants were 50 primary school teachers (elementary and middle school) recruited from three Baltimore City public schools. To identify partner schools, the study PIs contacted principals with whom they or their colleagues had had some prior contact or relationship. Recruitment and data collection were conducted from February through June 2017. All teachers at the three school sites were eligible to participate in the study.

### Procedure

Study team staff coordinated with school principals to schedule visits during faculty meetings and were given time to describe the study to teachers, obtain informed consent from interested teachers, and administer baseline surveys to those who had consented. Following this meeting, participating teachers were sent an orientation packet with information on how to access the intervention site. During the 9-week study period, teachers received emails every Sunday introducing new material for the week, including both a new self-care practice and new practice for use in the classroom. Teachers were also sent a mid-week check-in email by study staff throughout the 9-week study period to troubleshoot any potential technical issues the teachers may have in accessing intervention materials. Post-intervention surveys and focus

groups were conducted at each school following the 9 weeks of program delivery. Study staff held six focus groups within the participating schools using semi-structured guides to facilitate discussion. All participants were invited to attend a focus group; however, not all participants were able to attend due to competing obligations. Focus groups attendance ranged from 2 to 13 participants. At one focus group session, a single teacher was in attendance, so an individual interview was conducted using the same semi-structured guide. Teachers were compensated US\$20 for each self-report survey completed and US\$25 for attending a focus group or interview, for a possible total of US\$65.

We partnered with The Monday Campaigns to create an online platform for the mindfulness intervention. The Monday Campaigns is a non-profit organization dedicated to promoting positive behavioral changes using Monday as a “fresh start” for initiating healthier habits and activities. The Monday Campaigns developed a website for the general public called DeStress Mondays that offers practices, activities, and tips drawn from mindfulness and positive psychology to improve stress management, with fresh content provided each Monday. The Monday Campaigns team created a portal on the DeStress Monday site to house the teacher mindfulness program—called DeStress Monday at School—and developed the graphics and formatting for the program, as well as managing weekly emails offering new program content.

Teachers could access the intervention web page through the main DeStress Monday site or through a link provided within weekly Sunday emails. The website was divided into practices that could be used for teacher self-care and associated practices that could be used within the classroom with students. The practices were further divided into five themes—starting the day, boosting energy, improving focus, calming the mind, and connecting with others—that were derived from formative interviews and focus groups with teachers regarding their intervention needs and preferences.

In developing the website, we aimed to offer culturally and developmentally appropriate practices for teachers and students. We collaborated closely with an African American mindfulness instructor with extensive experience teaching mindfulness in Baltimore City schools, which serve predominantly African American students. The instructor developed a range of practices for each theme in consultation with the study PIs. Together we selected simple practices with clear instructions to facilitate the capacity of teachers with no prior meditation or yoga experience to offer them effectively. Practices included videos ranging from under 4 min to almost 10 min in length, audio recordings, animated images, or simply text. Featured yoga poses were intended for beginners and were modeled by the instructor in videos that teachers could

show in class. Meditations were intended for beginners, were selected so as not to be triggering for individuals with exposure to trauma, and included guided audio or video instructions for teachers to play in class or written guidance for teachers to read out loud. The four intervention core components described above and displayed in Fig. 1 were embodied in these different practices.

Each week, a new set of self-care and classroom practices went live on the site, focused on one of the five themes. Weekly emails were sent Sunday evening to all participating teachers, encouraging them to visit the site to access the new practices for the week. Once each practice was made available on the site, it remained accessible so that teachers could continue to use all practices released up to that time. A video on the site landing page introduced the intervention and its rationale and encouraged participants to learn and practice the techniques.

## Measures

### Implementation

Intervention delivery as expected was operationalized using two investigator-developed items on the post-intervention survey that asked about technical difficulties and intervention access challenges (Table 1). Focus group discussion questions explored site content use, challenges to use, and potential solutions (Table 1).

### Demand

Participant use of the intervention was assessed with two investigator-developed items on the post-intervention survey that asked how often participants used classroom and self-care practices, as well as with focus group questions exploring frequency of intervention use (Table 1). Using website analytics, the number of weekly emails participants opened were also tracked, as well as the number of links to the website that were clicked within the weekly emails.

### Acceptability

Intervention acceptability was evaluated using four investigator-developed survey items assessing how satisfied participants were with the look and feel of the site, to what extent they found the classroom and self-care practices helpful, and how interested they were in participating in the program next year, as well as focus group discussion questions regarding satisfaction with the website and intervention and suggestions for improvement (Table 1).

**Table 1** Assessments of implementation, demand, acceptability, and limited-efficacy testing

Domain	Assessment type	Item
Implementation	Survey items	To what extent did you experience technical problems or difficulties using the site? <input type="checkbox"/> Not at all <input type="checkbox"/> A little bit <input type="checkbox"/> Moderately <input type="checkbox"/> Very much  Did you experience difficulties with any of the following: <input type="checkbox"/> Receiving weekly Sunday email announcements <input type="checkbox"/> Receiving weekly check-in emails from our team <input type="checkbox"/> Accessing videos <input type="checkbox"/> Listening to audio files <input type="checkbox"/> Navigating the site, including accessing student and teacher practices each week <input type="checkbox"/> Internet access
	Focus group questions	<i>What contents on the site have you used?</i> <i>What has your experience been with the parts of the site that you've used?</i> <i>What kinds of barriers or challenges did you encounter when trying to use the site on a regular basis?</i> <i>What sorts of solutions do you think are possible for these challenges, if any?</i>
Demand	Survey items	Over the past month, how often did you use practices or strategies from the DeStress Monday at School website for your own self-care or stress management? <input type="checkbox"/> Never <input type="checkbox"/> 1-3 times <input type="checkbox"/> 4-6 times <input type="checkbox"/> 7 or more times  Over the past month, how often did you use practices or strategies from the DeStress Monday at School website in your classroom? <input type="checkbox"/> Never <input type="checkbox"/> 1-3 times <input type="checkbox"/> 4-6 times <input type="checkbox"/> 7 or more times
	Focus group questions	<i>Tell me about often you accessed the website (either through the emails or directly)?</i> <i>Tell me about how often you used the self-care practices? When did you use them (Mondays or throughout the week)?</i> <i>Tell me about how often you used the classroom practices? If you used the practices, when did you use them (Mondays or throughout the week)?</i>
Acceptability	Survey items	How satisfied were you with the look and feel of the site? <input type="checkbox"/> Not at all <input type="checkbox"/> A little bit <input type="checkbox"/> Moderately <input type="checkbox"/> Very much  How helpful did you find the website practices or strategies to be for working with students in your classroom? <input type="checkbox"/> Not at all helpful <input type="checkbox"/> A little bit helpful <input type="checkbox"/> Quite helpful <input type="checkbox"/> Extremely helpful  How helpful did you find the website practices or strategies to be for your own personal use? <input type="checkbox"/> Not at all helpful <input type="checkbox"/> A little bit helpful <input type="checkbox"/> Quite helpful <input type="checkbox"/> Extremely helpful  How interested would you be in participating in this program next year? <input type="checkbox"/> Not interested <input type="checkbox"/> A little interested <input type="checkbox"/> Moderately interested <input type="checkbox"/> Very interested

**Table 1** (continued)

Domain	Assessment type	Item
	Focus group questions	<i>What aspects of the website did you particularly enjoy or felt were useful?</i> <i>What is your impression of how students feel about the website?</i> <i>Which practice formats on the website were the most appealing (Illustrations, GIFs, audio, video)?</i> <i>What aspects of the website did not work as well as you would like?</i> <i>In what ways do you think the website could be improved?</i> <i>Would you recommend this website to other teachers? Why or why not?</i> <i>Do you intend to continue using the site?</i>
Limited-efficacy testing	Survey items	Teacher Concerns Inventory (TCI) Perceived Stress Scale (PSS) Patient Health Questionnaire (PHQ) Generalized Anxiety Disorder Scale (GAD-7) Pittsburgh Sleep Quality Index (PSQI) Brief COPE Five-Facet Mindfulness Questionnaire (FFMQ)
	Focus group questions	<i>How has the website/practices impacted you, if at all?</i> <i>How do you think the website components you've tried have affected your students, if at all?</i> <i>Tell me about how the skills or practices you tried impacted the atmosphere in your classroom, if at all.</i>

Survey items to assess implementation, demand, and acceptability were developed by the study investigators. In addition to survey items and focus group questions, demand was also evaluated by using website analytics to track the number of weekly emails participants opened and the number of times they clicked on links to the website within the weekly emails

### Limited-Efficacy Testing

Potential intervention benefits were explored using quantitative analyses of pre- to post-program changes in eight validated survey measures that assessed the hypothesized proximal and health outcomes, as well as qualitative analyses of focus group discussions on perceived program impacts (Table 1).

**Quantitative Surveys** *The Teacher Concerns Inventory* assesses occupational stress among teachers (Fimian, 1984). For this study, a reduced version of the survey was administered containing a total of 20 items across 3 subscales: Time Management, Work-Related Stress, and Discipline and Motivation. Participants were asked to respond to items assessing their experiences of time management pressures, work-related stressors, and frustration related to student problems with discipline and motivation on a scale of 1–5 (1 = *no strength/not noticeable*; 5 = *major strength/extremely noticeable*). The subscales displayed good reliability within the sample ( $\alpha$ -values of 0.75–0.89).

*The Perceived Stress Scale (PSS)* is a 10-item measure that assesses the degree of stress an individual experienced over the last month on a scale of 0–4 (0 = *never*; 4 = *very often*) (Cohen et al., 1983). The PSS has been shown to correlate with life-event scores, depressive and physical symptomatology, utilization of health services, and social anxiety (Cohen et al., 1983). Within this sample, the PSS displayed good reliability ( $\alpha$ -values of 0.75 and 0.85).

*The Patient Health Questionnaire (PHQ)* is an assessment of depressive symptoms (Kroenke et al., 2001). Participants were asked to respond on a scale of 0–3 (0 = *not at all*; 3 = *nearly every day*) how often they experience depressive symptoms within the past 2 weeks. The PHQ displayed good reliability within our sample of teachers ( $\alpha = 0.83$ ).

*The Generalized Anxiety Disorder Scale* is a brief, yet highly reliable and valid self-reported measure of Generalized Anxiety Disorder (Spitzer et al., 2006). Participants were asked to respond to 7 items, on a scale of 0–3 (0 = *not at all*; 3 = *nearly every day*), indicating how often they were bothered by certain problems. The measure demonstrated high reliability within our sample ( $\alpha$ -values of 0.89 and 0.93).

*The Pittsburgh Sleep Quality Index* assesses sleep quality and sleep disturbances over the past month (Buysse et al., 1989). A reduced version of the questionnaire was administered in this study, containing 6 subscales: Sleep Latency, Duration of Sleep, Sleep Efficiency, Sleep Disturbance, Use of Sleep Medications, and Overall Sleep Quality. Participants were asked to report how long it took for them to fall asleep each night, how many hours of sleep they got each night, how many hours they spent in bed each night, how often they had trouble sleeping, how often they took medication to help them sleep, and their quality of sleep. Higher scores indicate worse outcomes. The sleep measure displayed adequate reliability in our sample ( $\alpha$ -values of 0.72 and 0.75).



The *Brief COPE* is a measure of effective and ineffective coping mechanisms (Carver, 1997), including use of strategies such as self-distraction, venting, planning, humor, and self-blame. Participants were asked to respond to 26 of the scale's 28 items that assessed how they felt and what they did when experiencing a stressful event on a scale of 1–4 (1 = *I usually don't do this at all*; 4 = *I usually do this a lot*). The two substance use items were not included to protect teachers' privacy and job security. To distinguish the endorsement of typically positive (adaptive) coping approaches and typically negative (maladaptive) coping approaches, items were grouped based on previous experience with this measure (Sibinga et al., 2013) and confirmatory factor analysis. The positive and negative coping subscales demonstrated acceptable to good reliability ( $\alpha$ -values of 0.65–0.81).

The *Five Facet Mindfulness Questionnaire (FFMQ)* is a 24-item self-report measure that assesses five well-defined facets of mindfulness: Describing, Nonreactivity, Nonjudging, Observing, and Acting with awareness (Baer et al., 2006). The items pertain to everyday experiences of, and responses to, feelings, thoughts, and sensations. Participants were asked to respond to items on a scale of 1–5 (1 = *never or very rarely true*; 5 = *very often or always true*) based on their experiences in the last month. Alphas for each of the subscales revealed good reliability within the study sample ( $\alpha$ -values = 0.72–0.83), with the exception of the Observe subscale at baseline ( $\alpha$  = 0.56). At baseline, participants were also asked if they had any prior experience with practicing meditation or mindfulness. Participants were asked to respond on a scale of 0–3 (0 = *no experience*; 3 = *a lot of experience*).

The *Self-Compassion Scale (SCS)* was developed to measure various aspects of an individual's self-compassion (Neff, 2003). We used four items from the Self-Kindness subscale of the SCS that assess kindness, patience, and acceptance toward oneself and one's flaws and also adapted those items to assess attitudes and behaviors of kindness, patience, and acceptance toward others. Participants were asked to respond to the eight statements on a scale of 1–5 (1 = *almost never*; 5 = *almost always*). The SCS displayed acceptable to high reliability ( $\alpha$ -values of 0.68–0.88).

At baseline, teachers were asked to report their gender (male, female, other), and age in years. Teacher race was also collected (African/American or Black, White, Asian or Pacific Islander, American Indian, or Alaska Native), as well as Hispanic/Latinx ethnicity. Teachers reported on their current relationship status, which included five categories: married or cohabitating with a partner, divorced or separated, single, dating, or widowed. Finally, teachers reported their number of years with teaching experience, and their level of school currently being taught (i.e., elementary school, middle school, or both).

## Focus Group Discussions

As noted above, focus group discussions explored participant experiences and perceptions of the intervention and its delivery, including changes experienced as a result of the practices. The focus group questions are presented in Table 1.

## Data Analyses

### Quantitative Analyses

Descriptive statistics were calculated to characterize the sample. To assess *intervention implementation and demand*, response frequencies for relevant post-program survey items were examined. To further assess *demand*, linear regression models were estimated to identify demographic characteristics and baseline mental health variables associated with use of the self-care and classroom practices. To evaluate *acceptability*, response frequencies were examined for items assessing satisfaction with the website and helpfulness of the self-care and classroom practices. Linear regression analyses were conducted to examine demographic characteristics and baseline mental health variables associated with satisfaction with the site, reported helpfulness of the self-care practices, and reported helpfulness of the classroom practices.

To address *limited-efficacy testing*, baseline and post-program survey score distributions were first examined, and Shapiro-Wilk tests were conducted on the differences between baseline and post-program scores. Simple logistic regressions were used to examine potential baseline differences between teachers who completed the post-program survey and those who did not. Paired sample *t*-tests were conducted to evaluate the changes from baseline to post-intervention in teachers' stress, mental health, sleep, coping, self-compassion, and mindfulness in the overall sample. To examine potential dosage effects, the sample was then divided into those who reported using program self-care practices and those who reported not using any self-care practices. A second binary variable was calculated by dividing the sample into those who reported using classroom practices and those who reported not using any classroom practices. Finally, the sample was divided into those who opened any study emails and those who did not. Paired samples *t*-tests of pre- to post-program changes in mental health variables were then conducted across the three binary variables. Scores on measures were only calculated if the participant answered 85% or more of the measure. Stata version 14 was used for all quantitative analyses (StataCorp, 2015).

## Qualitative Analyses

Focus groups were audio recorded and transcribed verbatim and a qualitative thematic analysis was conducted using an inductive approach (Braun & Clarke, 2006). The five authors met initially to review the data and coding process. Three authors (LA, AA, MM) then conducted thematic coding of the six interviews. One coder had conducted study interviews (LW); the other coders had not (AA, MM). Each of the three coders made separate lists of significant themes they identified in the interviews. The five authors met again to review and further define the themes identified during coding. TM and ES assisted with organization of themes and resolved coding discrepancies during this meeting. The three coders then used the themes and codes to retrieve quotes from the interviews using Excel and calculated the number of participants who endorsed each theme. Comments from a single participant were only coded for a given theme once, even if the same theme was endorsed more than once by that individual. A final meeting was then conducted with all five authors to confirm the coding and endorsement of each theme.

## Results

Fifty teachers between the ages of 24 and 65 years ( $M = 39.51$ ,  $SD = 10.19$ ) enrolled in the study at baseline (see Table 2 for sample sociodemographic characteristics). The sample was 52% African American and 80% female, with an average of 10.68 years of teaching experience ( $SD = 7.34$ ). The majority of the sample had little (36%) or no experience (46%) with mindfulness practices. Of the overall sample, 41 (82%) teachers participated in the post-program survey. Twenty-four teachers (48%) participated in focus groups or individual interviews.

## Implementation

### Quantitative

Seventy-one percent of participants reported no technical issues with the website (Table 3). Of those who reported issues, 50% categorized the issues as challenges acclimating to the website, 20% as issues solved by technical support from the school or study team, and 30% did not characterize the issues. Approximately 10% of participants reported issues receiving the weekly Sunday email announcement, and 2.4% reported issues receiving emails from the study team.

**Table 2** Participant sociodemographic characteristics ( $n = 50$ )

Characteristic	<i>n</i>	%
Gender:		
Female	40	80.0
Male	9	18.0
Genderqueer	1	2.0
Race:		
African American/Black	26	52.0
White	21	42.0
Asian/Pacific Islander	1	2.0
American Indian/Alaskan Native	1	2.0
Ethnicity:		
Hispanic/Latino	2	4.0
Not Hispanic/Latino	48	96.0
Relationship status:		
Married/co-habiting with partner	29	58.0
Divorced/separated	5	10.0
Single	11	22.0
Dating	3	6.0
Widowed	2	4.0
Employment:		
Elementary school	36	72.0
Middle school	7	14.0
Both	7	14.0
Mindfulness experience:		
No experience	23	46.0
A little experience	18	36.0
Some experience	9	18.0
A lot of experience	0	0.0
	<i>M</i>	<i>SD</i>
Age in years	39.51	10.19
Teaching experience in years	10.68	7.34

### Qualitative

Consistent with the quantitative data, qualitative analyses of the focus group data indicated some challenges related to technical difficulty with the videos and with navigating the site (Table 5).

### Demand

#### Quantitative

Of the 41 teachers who completed the post-intervention survey, 35 (85.4%) reported using the self-care practices at least once during the past month. Close to 59% reported using self-care practices only 1–3 times in total. Linear regression analyses indicated that teachers with higher baseline scores on the “acting with awareness” subscale



**Table 3** Quantitative metrics of implementation, demand, and acceptability ( $n = 41$ )

Domain	Survey responses	<i>n</i>	%
Implementation	Technical problems with website		
	Not at all	27	71.1
	A little bit	7	18.4
	Moderately	3	7.9
Demand	Very much	1	2.6
	Use of self-care practices		
	Never	6	14.6
	1–3 times	24	58.5
	4–6 times	6	14.6
	7 or more times	5	12.2
	Use of classroom practices		
	Never	14	34.2
	1–3 times	21	51.2
	4–6 times	4	9.8
7 or more times	2	4.9	
Acceptability	Helpfulness of practices in classroom		
	Not at all helpful	6	15.8
	A little bit helpful	14	36.8
	Quite helpful	14	36.8
	Extremely helpful	4	10.5
	Helpfulness of practices for self-care		
	Not at all helpful	2	5.3
	A little bit helpful	16	42.1
	Quite helpful	15	39.5
	Extremely helpful	5	13.2
	Satisfaction with look/feel of website		
	Not at all	2	5.0
	A little bit	7	17.5
	Moderately	15	37.5
Very much	16	40.0	
Interest in program next year			
Not interested	0	0.0	
A little interested	9	22.5	
Moderately interested	12	30.0	
Very interested	19	47.5	

of the FFMQ mindfulness measure ( $\beta = -0.50, p = 0.001$ ) and those with higher scores on the Self-Compassion Scale self-kindness items ( $\beta = -0.30, p = 0.05$ ) were less likely to use program self-care practices.

Overall, 27 (65.9%) of the teachers at post-program reported using the classroom practices at least once during the past month. Approximately 51% reported using classroom practices only 1–3 times in total. Several baseline characteristics were associated with using the classroom practices in the past month, including a divorced/separated relationship status ( $\beta = 1.28, p = 0.01$ ), higher depressive

symptoms ( $\beta = 0.05, p = 0.03$ ), higher anxiety symptoms ( $\beta = 0.05, p = 0.02$ ), lower awareness ( $\beta = -0.34, p = 0.02$ ), and lower self-kindness ( $\beta = -0.31, p = 0.02$ ).

Of the full sample of 50 teachers, 20 (40%) opened at least half of the weekly emails, whereas 10 (20%) did not open any. Of the teachers who opened weekly emails, 27 (67.5%) clicked on the link to the website at least once during the study period. As teachers could access the website directly, rather than only by opening weekly emails and clicking embedded links, these metrics do not measure frequency of site visits or use of practices.

Of note, 64% of teachers used self-care but not classroom practices, while only 17% used classroom but not self-care practices, suggesting self-care practices may have been of greater interest to teachers in this sample. Forty-three percent of teachers who did not open weekly emails *did* report using self-care or classroom activities, highlighting that teachers did not access the website solely using links in the emails.

### Qualitative

With respect to intervention engagement among the qualitative sample, 9 teachers in the qualitative sample (45%) opened at least half the emails, 16 (80%) reported using self-care activities in the last month, and 13 (65%) reported using the classroom activities in the last month. Lack of time to explore the practices was identified as a key barrier to program use (Table 5) and was mentioned by 17% of focus group participants.

### Acceptability

#### Quantitative

Thirty-one of the 41 teachers who completed the post-program survey (77.5%) reported at least moderate satisfaction with the look and feel of the website (Table 3). Several baseline characteristics were associated with increased satisfaction, including female gender ( $\beta = 0.78, p = 0.02$ ), lower stress ( $\beta = -0.06, p = 0.04$ ), and greater positive coping skills ( $\beta = 0.67, p = 0.04$ ). When rating the helpfulness of the self-care practices on the site, a majority reported they were helpful; 15 (39.5%) reported that the practices were quite helpful, and 5 (13.2%) reported that they were extremely helpful. When rating the classroom practices, 14 (36.8%) reported that the practices were quite helpful, and 4 (10.5%) reported that they were extremely helpful. No characteristics were associated with reported helpfulness of the self-care practices. Several baseline characteristics were associated with greater perceived helpfulness of classroom practices, including higher depressive symptoms ( $\beta = 0.08, p = 0.002$ ), greater anxiety symptoms ( $\beta = 0.06, p = 0.02$ ),

lower nonreacting ( $\beta = -0.42, p = 0.048$ ), greater negative coping skills ( $\beta = 0.62, p = 0.02$ ), more sleep disturbances ( $\beta = 0.25, p = 0.04$ ), and overall sleep issues ( $\beta = 0.07, p = 0.03$ ). All teacher respondents expressed interest in the program for the subsequent year.

### Qualitative

Qualitative analyses highlighted that the weekly emails providing new mindfulness content for the week were particularly well received by participants and helped start their week in a positive way (Table 5). Two types of acceptability challenges relating to the classroom practices were also identified in the qualitative data, one pertaining to the fact that some students were not interested in the practices and the other related to the vocabulary and developmental level of language on the website, which was perceived by some participants as not an optimal fit for their students (Table 5).

### Limited-Efficacy Testing

#### Quantitative

Variables were normally distributed (skewness range =  $-0.96$ – $1.62$ ; excess kurtosis range =  $-1.57$ – $1.34$ ), with the exception of the sleep medication variable at post

intervention (skewness = 2.07; excess kurtosis = 2.94). Shapiro-Wilk tests of the differences between baseline and post intervention variables found that all differences were normally distributed with the exception of the sleep medication variable ( $W = 0.90, p = 0.001$ ). Violin plots of all study variables at pre- and post-program can be found in Table S1. Violin plots are a combination of box plots and kernel density plots, providing information on median and interquartile range, as well as the distribution of the data within a variable (Hintz & Nelson, 1998). Examination of baseline differences between participants who completed the post-program survey and those who did not showed that the two groups did not differ with respect to gender, age, race/ethnicity, years of teaching experience, type of teaching position (i.e., elementary vs. middle school), or baseline levels of most survey variables. However, teachers who completed the post-program survey had significantly greater depression symptoms ( $OR = 1.21, p = 0.04$ ) and lower kindness to others ( $OR = 0.19, p = 0.04$ ) at baseline than those who did not complete the post-program survey (Table S2).

As shown in Table 4, at post-intervention, significant improvement was seen in the mindfulness sub-scale of non-judging ( $t(39) = -3.37, p = 0.002$ ), a hypothesized proximal outcomes in the intervention conceptual model, as well as several health and wellness outcomes, including work-related stress ( $t(39) = 3.50, p = 0.001$ ), overall perceived

**Table 4** Pre-post changes in measures of mental health ( $n = 41$ )

Measures	Baseline $\alpha$	Baseline score $M$ ( $SD$ )	Post-program score $M$ ( $SD$ )	$t$ -score ( $df$ 39)	$p$ -value
TCI—Time Management	0.79	3.79 (0.73)	3.56 (0.65)	1.90	0.07
<b>TCI—Work-Related Stress</b>	<b>0.89</b>	<b>3.63 (0.93)</b>	<b>3.24 (0.85)</b>	<b>3.50</b>	<b>0.001</b>
TCI—Discipline/Motivation	0.80	3.27 (0.84)	3.15 (1.00)	0.81	0.42
<b>PSS</b>	<b>0.75</b>	<b>21.53 (4.81)</b>	<b>19.05 (5.49)</b>	<b>2.91</b>	<b>0.01</b>
PSQI—Sleep Latency	--	1.28 (1.24)	1.03 (0.97)	1.66	0.11
<b>PSQI—Duration of Sleep</b>	--	<b>1.20 (0.94)</b>	<b>0.83 (1.03)</b>	<b>2.94</b>	<b>0.01</b>
PSQI—Sleep Efficiency	--	0.91 (1.20)	0.63 (1.09)	1.15	0.26
<b>PSQI—Sleep Disturbance</b>	--	<b>2.15 (1.22)</b>	<b>1.61 (1.07)</b>	<b>2.76</b>	<b>0.01</b>
<b>PSQI—Sleep Medications</b>	--	<b>0.71 (1.10)</b>	<b>0.41 (0.89)</b>	<b>2.22</b>	<b>0.03</b>
<b>PSQI—Sleep Quality</b>	--	<b>1.76 (0.89)</b>	<b>1.22 (1.01)</b>	<b>3.72</b>	<b>0.001</b>
<b>PSQI—Total</b>	<b>0.72</b>	<b>8.00 (4.09)</b>	<b>5.71 (4.20)</b>	<b>3.28</b>	<b>0.002</b>
<b>PHQ</b>	<b>0.83</b>	<b>10.66 (5.21)</b>	<b>7.37 (5.20)</b>	<b>3.55</b>	<b>0.001</b>
<b>GAD-7</b>	<b>0.89</b>	<b>10.49 (5.73)</b>	<b>8.24 (5.75)</b>	<b>2.38</b>	<b>0.02</b>
FFMQ—Describe	0.74	3.63 (0.66)	3.63 (0.69)	0.00	1.00
FFMQ—Nonreact	0.76	3.01 (0.70)	3.11 (0.72)	-0.82	0.41
<b>FFMQ—Nonjudge</b>	<b>0.72</b>	<b>3.05 (0.71)</b>	<b>3.37 (0.77)</b>	<b>-3.37</b>	<b>0.002</b>
FFMQ—Observe	0.56	3.26 (0.78)	3.35 (0.84)	-0.78	0.44
FFMQ—Act w/ Awareness	0.81	3.20 (0.86)	3.41 (0.86)	-1.27	0.21
Brief COPE—Positive Coping	0.81	2.73 (0.44)	2.70 (0.42)	0.45	0.66
Brief COPE—Neg. Coping**	0.65	1.96 (0.58)	1.76 (0.56)	1.89	0.07
SCS—Self-Kindness	0.85	3.41 (0.90)	3.68 (0.82)	-1.98	0.06
SCS—Kindness to Others	0.80	3.99 (0.65)	4.13 (0.52)	-1.31	0.20

**Table 5** Qualitative themes across feasibility domains ( $n = 24$ )

Domain	Theme	Sample quotes
Implementation	Navigation of the site and multimedia	<p><i>I just had trouble navigating through things. It seems like when I clicked on things, the same page would pop up. That was just the one thing, I was like, "Wait, if I clicked on this, but it already popped up, did I already read it?" The first time, I was like, "Huh?" Once I got used to it, then everything flowed fine. [S2, F]</i></p> <p><i>I think in the beginning I was very frustrated...I didn't know where I was going. [S3, F]</i></p> <p><i>Sometimes the links had a hard time opening [S3, F]</i></p>
Demand	Lack of time to experience the program	<p><i>I feel like I probably could have put a lot more time into it if I had a lot more time. [S2, F]</i></p> <p><i>Because I was in grad class, a lot of my time was just on homework. [S2, F]</i></p> <p><i>But just, sometimes, you don't have enough time to go through them. [S3, F]</i></p>
Acceptability	Enjoying the weekly emails	<p><i>When I would see it pop up on my Apple watch, it was like, "Oh, you have a new activity." Let's see. Just keeping looking at it every week or just keeping it fresh in my mind, just being, "OK, I got to look at it and I got to see what the activity is, and where can I put it in the schedule?" [S2, F]</i></p> <p><i>That weekly email was the best thing because it was just a reminder that it was coming. I could go in right from there. That was the best way to stay connected with it. [S2, F]</i></p> <p><i>They were very positive, to get your week started. It's always nice to get started on a positive note. [S3, F]</i></p> <p><i>That was great, because Sunday is when I needed it. Sometimes on Monday mornings, before I would come to work, I would open it up. [S1, F]</i></p>
	Inability to engage all students	<p><i>My ones that I really wanted to buy into it, didn't buy into it. Next year, I don't know if I'm going to have to do a prize or something, but I have to make it more mandatory. This year was kind of optional. The yoga piece. [S2, F]</i></p> <p><i>Then they're the ones that while everybody else is trying to actually get calm, they're laughing at them, making fun of them, and creating more distraction. Then you have some people that are on the edge, that are like, "I want to do that, but then I don't want these guys to tease me." [S1, F]</i></p>
	Vocabulary on website not tailored to students	<p><i>With the children, you might just explain it in kid-friendly language, so they can understand what they're doing. [S3, F]</i></p> <p><i>My kids can't really read. [S3, F]</i></p> <p><i>The classroom stuff, the things I had the most trouble trying to convert how to speak to the kids, how to deal with the connecting with others. It just has to be worded differently for them. [S1, F]</i></p> <p><i>The way that it was worded seemed more appropriate for younger people, to get younger people on board. Middle schoolers, if it even sounds like it's for younger kids, they tune out right away. [S1, F]</i></p>
Limited-efficacy testing	Reminder to relax	<p><i>I'm a worry wort and I'm just like "Aah!" I put way too much pressure on myself", so just to relax and be like, "OK, some things are not in my control, so I can't stress about it." If I can't fix it, then [snaps] ...not to wash my hands of it, but I got to push it onto someone else. [S2, F]</i></p> <p><i>Another reminder, another platform, to do similar techniques, de stress, relax, calm down. [S1, M]</i></p> <p><i>I've become more mindful in thinking about ways to release it versus harboring like, "Oh, I can't believe this happened," or something like that. [S3, F]</i></p>

**Table 5** (continued)

Domain	Theme	Sample quotes
	Better teacher with difficult students	<p><i>A lot of times it's stuff you've heard about, but it's a good reminder of, "Oh, yeah, that would be something different that I don't normally think to do if I'm stressed out." [S3, F]</i></p> <p><i>You're learning about, or reminding yourself of how people relate to each other, the best ways to maintain good relationships, and that type thing with yourself and with people around you. [S2, F]</i></p> <p><i>In the connection with others and, in particular, working with middle school students who can be tough to work with, so now that's another thing that's starting to come back to me now, like managing my own anger sometimes. [S2, F]</i></p> <p><i>Just the way I related to him the last couple of weeks was so different, because I had to think about his situation coming to a new school, not knowing people, not understanding the rules, and those types of things. I think that made me a better teacher. [S3, F]</i></p> <p><i>I feel like I came in as a better teacher, because I had let [the stress] go. [S3, F]</i></p>
	Lower anger and aggression in the classroom	<p><i>But the deep breathing, I am using with one of my high fliers. He seems to really like it and it sometimes calms him down. [S3, F]</i></p> <p><i>Once you see that it works, it calms her down. You can watch her de-escalate. [S3, F]</i></p> <p><i>...for specific students in particular who are on the autism spectrum, it worked out really well for her... [S3, F]</i></p> <p><i>It definitely calmed some of them. [S1, F]</i></p>

S1 school no. 1, S2 school no. 2, S3 school no. 3, M male participant, F female participant

stress,  $t(39) = 2.91, p = 0.01$ ), depressive symptoms ( $t(39) = 3.55, p = 0.001$ ), and anxiety symptoms, ( $t(39) = 2.38, p = 0.02$ ). Several improvements were also found in teachers' self-reported sleep, including increased sleep duration ( $t(39) = 2.94, p = 0.01$ ), improved sleep quality ( $t(39) = 3.72, p = 0.001$ ), fewer sleep disturbances ( $t(39) = 2.76, p = 0.01$ ), and reduced use of sleep medications ( $t(39) = 2.22, p = 0.03$ ).

Three sets of dosage analyses were conducted to determine whether teachers who engaged with intervention practices, and materials showed improvements as compared with those who did not. Dosage analyses showed that teachers who reported using self-care strategies and teachers who reported using classroom strategies over the past month had more significant improvements between pre- and post-intervention than teachers who did not report using the self-care activities or classroom strategies (Tables S3 and S4). Similarly, teachers who opened any of the weekly emails had more significant improvements in stress, sleep, and mental health outcomes than teachers who did not open any of the weekly emails (Table S5).

### Qualitative

Consistent with the survey findings, 60% of focus group participants mentioned decreased stress or enhanced relaxation as a result of the intervention (Table 5). Two other themes

relating to program impact that were distinct from quantitative findings were also identified. The first was participants' enhanced capacities for interacting compassionately and effectively with students, including "difficult" students, and second was participant perceptions that some students were benefitting from the practices.

### Discussion

This feasibility study of an online mindfulness program for teachers, DeStress Monday at School, evaluated four components of feasibility identified by Bowen et al. (2009): implementation, demand, acceptability, and limited-efficacy testing. Our findings indicated mixed support for program feasibility, including addressable implementation issues, challenges with demand, generally positive ratings of program acceptability, and promising results of limited-efficacy testing. Findings for each component are discussed as follows.

**Implementation** Over two-thirds of participants reported no challenges with the program site. When there were difficulties, they were most commonly technical difficulties playing intervention videos due to firewall issues when inside school buildings. Fortunately, these issues were successfully resolved over the course of the intervention and should be

planned for in future implementation. The intervention's online format with automated weekly emails facilitated delivery with minimal staff time required for support. This format holds promise for implementation on a large scale assuming the program is otherwise feasible and beneficial.

**Demand** A large majority of participants (85%) accessed the self-care mindfulness practices at least once, and a majority (66%) accessed the classroom practices at least once. However, over half of participants reported only using practices 1–3 times. As suggested by the qualitative data, many teachers may have been too busy to engage with the intervention. Others may simply not have been interested in, or receptive to, mindfulness. While most teachers did engage with program content, especially for self-care, this is an important area to explore in future research to ascertain whether there are ways to engage a larger percentage of teachers or to identify characteristics of teachers who are interested in mindfulness practices and tailor the intervention more specifically to their needs.

To what extent can the program be expected to benefit those who only use it 1–3 times? Of note, research has found that even brief exposures to mindfulness may be helpful. A recent systematic review of 85 studies found that mindfulness interventions had positive impacts on a variety of health and mental health outcomes “after only one session and with interventions as brief as 5 min” (Howarth et al. 2019, p. 1957), and other recent studies with randomized designs indicate that a single brief mindfulness session (10–15 min) can improve attention (Norris et al. 2018) and emotion processing (Wu et al., 2019). Future research on DeStress Monday at School should explore questions of dosage in more detail to better understand barriers to using practices and impacts of brief program exposures.

**Acceptability** Most teachers reported at least moderate satisfaction with the look and feel of the website. Most participants found the practices to be helpful, with 95% of participants who completed the post-survey reporting the self-care practices were helpful and approximately 84% reporting the classroom practices were helpful. Additionally, all teacher respondents reported interest in the program for future years. The qualitative data supplemented these positive survey responses, with participants highlighting that they enjoyed the weekly emails prompting them to access new practices. Areas of lower satisfaction involved perceptions that some students were not interested in the practices and that the reading level on the site was not a developmental fit for all students.

In summary, while not all teachers were interested in engaging with the intervention, those who did engage appeared to be largely satisfied with their experience. Of note, participants who found the classroom practices to be

helpful were more likely to report signs of emotional distress at baseline, including higher depressive and anxiety symptoms, more negative coping, and worse sleep. This finding suggests the classroom practices may be a useful resource for teachers who are struggling emotionally.

**Limited-Efficacy Testing** Significant pre-post program improvements were observed in a number of hypothesized health and wellness outcomes, including work-related stress, perceived stress, anxiety, depression, and several sleep characteristics (longer duration, better quality, less disordered sleep, and less sleep medication use). Significant pre-post changes were not observed, however, in coping or in time management or discipline/motivation, which are aspects of burnout related to occupational stress. With respect to the hypothesized proximal outcomes in our conceptual model, the mindfulness subscale of non-judging showed significant improvement from pre to post program; the other four mindfulness subscales did not improve significantly, although the direction of scores was generally in the predicted direction. Contrary to prediction, self-compassion did not change significantly, nor did compassion for others. Quantitative results regarding program benefits were supported by qualitative findings on increased relaxation and capacity for handling difficult emotions. These analyses provide preliminary support for aspects of our proposed conceptual model, while also highlighting that further model refinement will be necessary in subsequent research with a more rigorous design and power to test mediational pathways.

Lack of a control group in the current study is a serious methodological limitation; as the pre-post study design does not address threats to internal validity, analyses regarding intervention outcomes should be interpreted with caution. The three sets of dosage analyses, however, provide additional support for the study hypotheses. For instance, participants who reported using self-care care practices were found to have more pre-post health and wellness improvements than those who did not, including improved time management, work stress, stress, sleep latency, sleep duration, sleep disturbances, sleep quality, total sleep problems, anxiety, and nonjudging. By contrast, both those who did and did not use self-care practices reported reductions in depressive symptoms, suggesting that depressive symptoms may have improved due to the passage of time, non-specific effects of participating in a study, or other factors rather than to intervention impact. While those who reported using self-care practices appeared to have the largest range of positive health outcomes at post-test relative to those who did not use practices, results generally followed similar patterns when comparing participants who reported using classroom practices with those who did not and those who opened program emails with those who did not. In addition, themes from the qualitative analyses supported indications of intervention



benefits in the survey data, particularly the fact that over 60% of focus group participants reported decreased stress and increased relaxation as a result of intervention practices.

Our finding that a structured online mindfulness program may be beneficial for classroom teachers is consistent with research on in-person mindfulness programming for classroom teachers, such as the CARE and SMART programs (Benn et al., 2012; Crain et al., 2016; Jennings et al., 2017; Roeser et al., 2013), in which improvements were seen in stress and psychological functioning. To our knowledge, this is the first study to assess a structured online mindfulness program for teachers. The web-based platform has the potential to increase accessibility and broaden program reach to include teachers who would not otherwise commit to an in-person program for reasons of time, schedule, or distance to the in-person location. As the response to the COVID-19 pandemic has led to an extensive shift to online schooling, some of which is thought very likely to continue (World Economic Forum, 2020), the possibility to increase accessible and effective tools to support teachers' self-care and classroom activities may be of great value.

## Limitations and Future Research

This feasibility study has a number of significant limitations, most notably the absence of a control group, as discussed above. We also had low statistical power due to our small sample size of 50, and we conducted many statistical tests without controlling for multiple comparisons, which greatly increases the chances of false positive results. Quantitative limited-efficacy testing may also have been biased toward positive results because participants who did not complete post-test surveys were not included in analyses, and those participants may not have benefitted from the intervention. Our goal, however, was to conduct exploratory analyses to observe patterns of findings in the context of a feasibility study. Moreover, confidence in the observed patterns is enhanced based on substantial correspondence between our quantitative and qualitative findings and the fact that dosage analyses revealed more benefits for participants who reported program usage versus no usage and those who opened program emails versus those who did not. Objective data on program usage underestimated actual usage because it was only possible to track site visits initiated through the email link, whereas participants could also go directly to the website. In addition, participants were assessed at post-program but no follow-up assessments were conducted.

This study provides insight into feasibility strengths and challenges of the DeStress Monday at School intervention. Intervention demand posed the most serious challenge, with a subset of participants who never accessed practices, and

many who only used practices 1–3 times in total. Our formative research, however, indicated that teachers experience considerable stress and would welcome ways to address it; future research should explore barriers and facilitators to teacher use of the mindfulness practices. Moreover, program implementation was feasible, program acceptability was high among those who used it, and participants were generally satisfied with the site and found the practices to be helpful. Limited-efficacy testing indicated potential program benefits related to teacher outcomes of stress, mental health, and sleep. The program's classroom activities were perceived as especially helpful by teachers experiencing anxiety and depression symptoms, negative coping, and sleep problems, possibly providing them with a sense of support in the classroom. Taken together, our findings indicate that the intervention merits further evaluation. Future research should use a randomized controlled design, larger sample size, longer follow-up assessments, evaluation of teacher capacity to implement classroom practices effectively and appropriately, and assessment of classroom and student outcomes to better elucidate the effect of this promising program. Providing accessible and effective mindfulness programming for stressed classroom teachers may ultimately result in benefits for both teachers and students, laying the groundwork for improved classroom climate and learning.

**Supplementary Information** The online version contains supplementary material available at <https://doi.org/10.1007/s12671-023-02142-3>.

**Acknowledgements** We thank Peggy Neu, Ron Hernandez, and other members of The Monday Campaigns team for their partnership and technical expertise in developing the DeStress Monday at School online platform, format, and graphics. We also thank mindfulness instructors Tawanna Kane and Trish Magyar for their development of audio and video practices for the program, and the teachers who participated in the study for their time and support.

**Author Contributions** TM: conceptualization, funding acquisition, methodology, formal analysis, writing—original draft and editing; LW: project administration, investigation, formal analysis, writing—original draft and editing; AA: formal analysis, writing—review and editing; MM: formal analysis, writing—review and editing; ES: conceptualization, funding acquisition, methodology, formal analysis, writing—original draft and editing.

**Funding** Our work was funded by the Lerner Center for Public Health Promotion.

**Data Availability** Data are available on request from authors.

## Declarations

**Ethics Approval** This study was approved by the Institutional Review Boards of the Johns Hopkins Bloomberg School of Public Health and Baltimore City Public Schools.

**Informed Consent** Informed consent was obtained from all participants.

**Conflict of Interest** The authors declare no competing interests.

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