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Research Article

Self-Care Options for Resilient Educators (SCORE) Teaches Aspiring Teachers How to Manage Stress in Light of COVID-Related Disruptions

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Abstract

Self-Care Options for Resilient Educators (SCORE) is an 8-week, asynchronous virtual training program that teaches stress management skills relevant to educators' job-related responsibilities and interpersonal interactions. From January-April 2020, 28 pre-service teachers participated in a quasi-experimental study of SCORE's feasibility and preliminary efficacy. Volunteers chose to either complete SCORE concurrent with their teaching internship or to complete the same assessments for comparison purposes. Recruitment and implementation took place prior to COVID-19 disruptions. Then, six weeks into SCORE, the participants encountered unanticipated school closures and uncertainties associated with their internships (e.g., Would they be able to complete their internships and degree programs? Would they be eligible to teach the next school year?). Despite disruptions to their teaching internships, the remote format of SCORE allowed the study to continue and for participants to complete the full training. Pre-intervention to post-intervention changes in outcomes for the intervention group reflected large effect sizes for decreases in burnout and increases in teacher efficacy. There were medium effects for increased self-compassion and small-to-

medium effects for increased cognitive reappraisal. However, pre-to-post intervention differences for the comparison group were relatively unchanged on most indicators. Results for secondary traumatic stress was remarkable, as the comparison group demonstrated a medium-to-large effect for an increase at post-intervention. This measure, however, revealed no effect in change for program participants. This finding is noteworthy and suggests that participation in SCORE or a similar program may help mitigate the potentially harmful effects of exposure to secondary trauma. Overall, this study's results support arguments for including stress management training during pre-service teaching internships.

Keywords
Teachers; pre-service teachers; stress; burnout; secondary trauma; self-care; stress management

1. Introduction

Teachers are routinely exposed to high levels of stress [1, 2]. Prior to the COVID-19 pandemic, a national survey of more than 800 respondents found that 61% of teachers experienced high daily stress "often" or "always" in comparison to 30% across all other professions [3]. According to a similar survey conducted after the outbreak, those percentages escalated to an alarming 78% and 40%, respectively [4]. Thus, pandemic-related factors are associated with increased stress levels for all adult workers, but the disproportionate stress among teachers was further elevated. This trend has been found among teachers at all levels across a variety of institutions worldwide [5]. Prior to COVID's devastating impact, the need to empower teachers with stress management skills and supports for their wellbeing has been recognized over the past four decades [6]. In light of the pandemic, however, this need is more critical than ever [4].

Prior to COVID, chronically high levels of stress have been associated with burnout, which is characterized by emotional exhaustion, or a loss of enthusiasm for teaching; depersonalization, or disengagement from work and students; and a lack of personal accomplishment [7, 8]. Multiple studies have suggested that teacher burnout is a threat to teacher health and wellness; stability in the teacher workforce; and their student's academic, social, and emotional outcomes [9-13]. Also, because teachers work closely with students who experience trauma or other adverse outcomes, they are at risk for experiencing secondary traumatic stress (STS) symptoms [14]. Unlike burnout, which develops from unmanaged chronic stress, STS symptoms may develop while working with a student who has experienced a single traumatic event (e.g., natural disaster, car accident, one-time victimization) or complex trauma from ongoing circumstances or recurring events (e.g., abuse, poverty, oppression). Common manifestations of STS include intrusive and distressing thoughts, preoccupation with a specific student or student concern, and spikes in anxiety levels that disrupt their typical functioning. Though rates of STS among teachers are not known, one large study analyzed over 300 staff members in six schools in the northwest United States. From that study alone, approximately 75% of participants experienced substantial levels of secondary traumatic stress [14].

The crisis of teacher stress should be a shared responsibility of policymakers, school leadership, teacher educators, and the teachers themselves [6]. Policymakers are responsible for mandates that empower educators to perform their jobs effectively, yet teachers often report feeling stifled by one-size-fits-all curricula and assessments; copious amounts of paperwork; heavy workloads; and unfair performance evaluations that do not reliably reflect the broad impact their work [3, 12]. School leadership is responsible for cultivating a supportive working environment. Perceptions of school leadership and collegiality have been noted as strong determinants of teacher job satisfaction and role longevity [9, 15, 16]. Teacher educators are responsible for preparing aspiring educators with diverse skills to support their position. While the emphasis is often on academic, social, and emotional learning practices, stress management is arguably an essential skill teachers need for their role [17]. Without the ability to effectively manage their stress, they are more likely to experience the deleterious effects of burnout and STS. Conversely, teacher engagement in healthy coping strategies (e.g., exercise, mindfulness, relaxation training) mitigates stress and burnout and is associated with desirable work experiences, job performance, and student outcomes [6, 12].

The current study's investigators were unable to locate any published intervention studies that specifically targeted STS in teachers. Like burnout, much of the education literature exposes the problem. One study has addressed teacher trauma, but the outcomes were based on delivering support to their students. Findings from Berger et al. [18] suggest that teachers reduced their own symptoms of stress associated with primary and secondary trauma after teaching a 16-week intervention to their students after experiencing an earthquake. Otherwise, the focus on trauma in education settings has been about teachers supporting their students through traumatic experiences versus supporting teachers who exhibit signs of STS [19]. Though burnout and STS are distinct constructs and experiences, stress management and self-care may play a key role in healing from and/or preventing the development of these conditions.

Despite the high risk of burnout and STS, teacher education programs do not typically offer training to address these issues [17]. Learning such skills while engaging in early field experiences may better prepare candidates for the multiple demands associated with teaching. There are numerous ways to effectively cope with stress and at the same time, promote one's wellbeing. In comparison to the literature that highlights the problems around teacher stress, burnout, and STS, publications about managing teacher stress interventions remain relatively sparse. Of research that is available, mostly within the last decade, there have been promising outcomes associated with programs that teach techniques and offer guided practice related to yoga [20], mindfulness [21], compassion [22] relaxation response [23], and cognitive reappraisal [24]. Results of such studies suggest participants experienced improvements related to their stress levels, perceptions of well-being, job satisfaction, and job performance.

Previously, the primary investigator of the current study developed an integrative program, four weeks in duration, that imparted information and guidance on ways teachers can apply the aforementioned practices [6]. Consumers of this program received information about multiple modalities and were encouraged to choose strategies consistent with their preferences, abilities, and accessibility. After selecting the stress management tools of their choice, consumers were guided through personalization of their own self-care plan. Then, the program instructed them through a self-directed process to implement the self-care plan. In contrast to the previously studied programs, this intervention was delivered through a completely asynchronous and virtual format.

The rationale behind the online implementation was to increase the convenience and therefore the accessibility of the training. The earliest version of this program was piloted in a randomized experiment involving 51 teachers and paraprofessionals [6]. Analyses revealed a large effect size related to program participation. More specifically, when compared to a control group, the program participants reported a significant increase in their self-care engagement. As such, they scored significantly lower on measures of burnout and significantly higher on teacher self-efficacy. Furthermore, the online asynchronous intervention was considered feasible, as 92.8% of participants completed the program. The majority also rated the program favorably and attributed changes in habits and positive outcomes to their training experience.

Self-Care Options for Resilient Educators (SCORE) is an updated version of this program, which was revised for implementation concurrent with Central Michigan University's teaching internship program. The primary goal of the present study was to explore the feasibility of SCORE as well as its preliminary efficacy for pre-service teacher outcomes pertaining to stress and use of coping strategies. Given the positive outcomes of the pilot study, the current iteration retained similar content and structure. However, to align with the schedule of the teaching internships, the program was reorganized from eight twice-weekly modules (four weeks in duration) to eight once-weekly modules (eight weeks in duration). In addition, considering the training status of the participants, the opening module shared more background information on the impact of stress, burnout, and STS on teachers. Then, including the strategies from the initial version, SCORE was expanded to include applications of spirituality. To promote inclusivity of diverse beliefs and philosophies, content relevant to spirituality was presented in a universal manner so that trainees could opt to include their preferred spiritual practices, if applicable, in their personalized plans. In addition, concepts associated with mindfulness (e.g., intentional focus, noticing details without judgment, self-compassion, compassion for others) were included as part of the other techniques. For example, the instruction for cognitive reappraisal included examples that promoted kindness to oneself and others. Relaxation response activation strategies instructed participants to notice bodily sensations as well as intentional stimulation of the relaxation response. The guided plan encouraged participants to practice self-compassion through a continual work in progress.

To determine SCORE's impact, the authors wanted to know if participation in the program was associated with:

- Reductions in:
    - Stress-related symptoms
    - Burnout
    - Secondary traumatic stress
- Increases in:
    - Compassion satisfaction
    - Teacher self-efficacy
    - Self-compassion
    - Use of cognitive reappraisal

In addition, the authors wanted to know about SCORE's feasibility as a training program concurrent with teaching internships. As such, participants were asked to provide open-ended responses about their experiences with SCORE.

A secondary goal was to highlight SCORE's impact through significant unanticipated surges in stress. Approximately halfway through the teaching internship assignments and three-quarters of

the way through SCORE's implementation, schools were suddenly closed due to COVID. At that time, March 13, 2020, nobody knew the trajectory for schools reopening, including the direction the internships would take. Taken by surprise, some participants were concerned they would not be able to complete their internship and graduate from their degree program as planned. This had implications for their eligibility to teach the next school year. Moreover, many school districts were uncertain as to whether or not they could hire new teachers. Such education- and career-related anxieties compounded other virus-related fears (e.g., contracting the virus, concerns about loved ones) experienced by many. However, as SCORE was completely asynchronous and virtual in format, the study continued forward. While COVID disruptions may have influenced the results described later in the paper, the unfortunate phenomenon also gave researchers an opportunity to investigate uses of integrative coping practices during times of crisis. This information may be valuable to the education field. Although we hope there will be no events in the foreseeable future with comparable global impact, teachers can expect to experience stress related to unplanned crises, traumas, or other dramatic uncertainties. These realities are discussed as they relate to the study findings.

2. Materials and Methods

2.1 Study Design

The study used a quasi-experimental design that included two groups of participants – those electing to participate in the SCORE program and a comparison group that did not. To make SCORE available to all teacher interns who desired access to the program, random assignment was not used. Instead, interns not electing to participate in SCORE were recruited for the purposes of providing data for comparison. The comparison group included volunteers who were willing to complete the same assessments before and after program implementation but opted not to participate in SCORE.

On July 22, 2019, Central Michigan University's Institutional Review Board (IRB) determined this project is exempt from IRB review according to section 45 CFR 46.104(d)2 (ii) of the revised Common Rule, which the university's IRB has adopted for reviewing research not supported or sponsored by a Common Rule agency.

2.2 Participants

During the Spring (January – April) 2020 semester, pre-service teachers assigned to teaching internships in K-12 classrooms were given the option to volunteer to participate in the study. Through a message distributed to the interns' institutional email, they were provided information about the study's purpose and procedures. Volunteers were solicited to either complete the 8-week virtual program, which included assessments before and after consuming the modules, or to opt for the comparison group that did not receive access to SCORE. Participants from the program group received a completion certificate and compensation in the form of a $50 gift card. The comparison group was compensated with a $25 gift card.

Thirty-four pre-service teachers consented to participation, with 23 enrolling in the SCORE group and 11 agreeing to complete assessments for the comparison group. Attrition in the SCORE group included three participants who asked to be moved to the comparison group. Two of whom cited a

lack of time and one, after completing 5 of 8 modules, indicated they were already engaging in similar activities through the school in which they interned. Twenty participants completed SCORE in its entirety. One participant's data was removed from the analyses, as she eventually joined the research team. Thus, data from the 19 program participants who completed SCORE was used to analyze outcomes. Among the 13 who volunteered for the comparison group, four (n=4) did not follow up to complete the post-program assessments nor respond to emailed reminders about the final set of assessments. Below, Table 1 details the demographic information of the final sample:

Table 1 Participant sample demographics (N=28).

Participant Details	SCORE	Comparison	Total
Gender			
Female	19	8	27
Male	0	1	1
Nonbinary	0	0	0
Race/Ethnicity			
White	18	9	27
Middle Eastern	1	0	1
Age (Years)			
21-25	17	8	25
26-30	2	1	3
Placement Type			
General Education	10	8	18
Special Education	9	1	10

Note. Data displayed are based on participant responses and do not reflect all options on the survey.

2.3 Program Details

SCORE was an asynchronous virtual training program that included didactic instruction about teacher stress, burnout, and trauma; information and demonstrations of various stress management strategies; interactive activities; and strategy implementation. The first module introduces the program and acquaints users with its formatting, rationale, and basic procedures. Participants also explore their own stress and stress management needs. Modules 2-6 focus on self-care strategies. These modules provide explanation of the mechanisms in which the strategies work and include demonstrations, examples, and guided practice. Modules 7-8 then extend the strategies to the workplace and include de-escalation techniques for times of heightened stress on the job. Throughout SCORE, participants are guided through their development and implementation of a personalized stress management plan. Participants completed the program independently at a pace of one module per week for eight consecutive weeks. Each module included approximately 45 minutes of content and activities. To confirm fidelity of implementation, three secret words were embedded within videos from each module. Secret words were inserted into the content in places unknown to participants. To verify their viewing of the module content, participants listed the three

secret words and completed activities through module worksheets. Module topics are outlined in Table 2.

Table 2 Components of Self-Care Options for Resilient Educators (SCORE).

Module	Topic and Contents
1	Introduction to Program & Getting Started • Introduction and how to use SCORE • Health • Job satisfaction and performance • Workplace relationships • Work context, learning environment, and student outcomes • Benefits of wellness and coping skills • Making plans that work
2	Developing Habits & Setting Boundaries • Time boundaries • Space boundaries • Interpersonal boundaries
3	Habits of Body: Input, Output, Break, Repeat • Food, drink, substances • Digestion • Exercise • Exposure to nature • Sleep
4	Habits of Mind (and Spirit, too!): Co-Creating My Experience • Control and Letting Go (Control Flowchart) • Gratitude • Self-Compassion and Compassion for Others
5	Mindfulness • Mindfulness meditation • Example of mindfulness in schools • Guided practice • Examples of active meditations and mindful activities
6	Relaxation Response Activation • Relaxation response activation strategies • Guided practice
7	Routines and Relationships at Work • Connection between self-care and other modern issues in education (e.g., social-emotional learning, inequities, trauma-informed practices, mental health first aid) • Secondary traumatic stress • Work-related routines that may prevent stress • Preventing stress through positive interactions at work

8	De-escalation and Program Wrap-Up • Identifying personal triggers • Emergency self-care for crises, trauma, or other hard-hitting events • Awareness of triggers in others • Supporting students and staff under duress

2.4 Outcomes and Assessments

Data was collected at two points in the study. Pre-intervention data was collected within a week of SCORE's implementation. Participants then repeated the same assessments at post-intervention 9 weeks later. Data was collected through online questionnaires. The pre-intervention form inquired about the demographic variables reported in Table 1 and outcomes related to stress and stress management practices (see 2.4.1 – 2.4.5). The post-intervention form included the same assessments as described under 2.4.1 – 2.4.5. Also at the post-intervention data point, the program group was asked to complete the assessments described under 2.4.6.

2.4.1 Stress-Related Symptoms

A 12-item survey [25] measured the extent to which participants experienced physiological (e.g., headaches, muscle tension, fatigue) and psychological (e.g., depression, irritability, anxiety) symptoms commonly associated with stress. Participants reported their symptoms through a 7-point Likert-type scale (1=never; 7=almost all day, every day). Scores may range from 12-60.

2.4.2 Professional Quality of Life

The *Professional Quality of Life Scale Version 5* (ProQoL-5; [26]) consists of 30 items with responses on a 5-point Likert-type scale (1=never; 5=very often). This assessment is used to measure compassion satisfaction and compassion fatigue (i.e., burnout, STS) in helping professionals, such as social workers, counsellors, and educators. Per the administration instructions, 19 items were worded to specifically reflect the teaching profession. For example, the item, "I like my work as a *[helper]*," was presented as, "I like my work as a teacher."

Compassion Satisfaction. This 10-item subscale measures pleasure derived from being able to work well and has demonstrated adequate internal consistency (α = .88). Scores may range from 10-50. Examples of items that load on the compassion satisfaction subscale include, "I get satisfaction from being able to teach people," and "My work makes me feel satisfied."

Compassion Fatigue (Burnout). This 10-item subscale measures feelings of hopelessness and difficulties in dealing with one's work. Its internal consistency was α = .75. Scores may range from 10-50. An example of an item that loads on the burnout subscale includes, "I feel trapped by my job as a teacher." Unlike the other ProQoL-5 subscales, five of the 10 items are reverse scored. An example includes, "I have beliefs that sustain me."

Compassion Fatigue (Secondary Traumatic Stress). This 10-item subscale measures symptoms related to exposure to extremely stressful events at work and has internal consistency at α = .81. Scores may range from 10-50. Examples of items that load on the STS subscale include, "I am

preoccupied with more than one person I teach," and "I feel as though I am experiencing the trauma of someone I teach."

2.4.3 Teacher Self-Efficacy

The *Teacher Sense of Efficacy Scale – Short Form* (TSES-SF; [27]), is a 12-item measure with responses on a 9-point Likert-type scale (1 = not at all; 9 = a great deal) with adequate internal consistency (α = .92). This scale consists of three dimensions that assess teachers' perceptions of their abilities relevant to instructional strategies, classroom management, and student engagement. For pre-service teachers, the test developers recommend using composite scores, which are obtained by calculating the mean for all items. Thus, the scores may range from 1-9. Examples of items include, "How much can you do to control disruptive behavior in the classroom?" and "To what extent can you provide an alternative explanation or example when students are confused?"

2.4.4 Self-Compassion

The *Self-Compassion Scale – Short Form* (SCS-SF; [28]) was used to measure the degree to which participants appraise themselves with kindness and compassion. The SCS-SF has 12 items with responses on a 5-point Likert-type scale (1=almost never; 5=almost always). Scores range from 12-60. This measure is a shortened version of the *Self-Compassion Scale* (SCS) with 6 subscales: 3 facets of self-compassion (i.e., Self-Kindness, Mindfulness, Common Humanity) and their respective opposites (i.e., Self-Judgment, Overidentification, Isolation), which are reverse scored. The SCS has demonstrated adequate internal consistency (α = .92), with subscale internal consistency values ranging from .75 (Mindfulness) to .81 (Overidentification). The overall test-retest reliability was .93 and was acceptable for each subscale as well (Kindness = .88, Self-Judgment = .88, Common Humanity = .80, Isolation = .85, Mindfulness = .85, Over-Identification = .88). The SCS-SF has demonstrated a very high correlation with the SCS ($r \geq .97$) and was therefore chosen over the long form for use in this study.

2.4.5 Cognitive Reappraisal

The Reappraisal subscale of the *Emotion Regulation Questionnaire* [29] was used to measure the degree to which participants change their thoughts to manage their emotional experiences. This subscale includes six items with responses on 7-point Likert-type scale (1=strongly disagree; 7=strongly agree). Cognitive reappraisal scores may range from 6-42. Examples of items include, "When I want to feel more *positive* emotion, I *change the way I'm thinking* about the situation," and "I control my emotions by *changing the way I think* about the situation I'm in."

2.4.6 Feasibility

At post-intervention, feasibility was assessed to determine whether SCORE is appropriate for further testing and potential use as a complement to teaching internships. For the purposes of this study, feasibility was assessed in terms of practicality and treatment acceptability.

Practicality. Practicality of SCORE was based on the intervention completion rate. A program is considered practical if at least 80% of participants complete the program [30].

Treatment Acceptability. SCORE participants were asked to rate SCORE as a program by responding to seven items through a 5-point Likert-type scale (1 = strongly disagree; 5 = strongly agree). In addition, they were presented with five open-ended prompts and asked to provide constructive feedback of SCORE and describe any changes in their self-care practices they attribute to their participation in SCORE. The investigators independently identified themes within the participant responses. To analyze these themes, they applied the constant comparative method [31, 32] and reported the frequencies for which each theme appeared.

2.5 Procedures

Figure 1 below illustrates the sequence of procedures and events for the study.

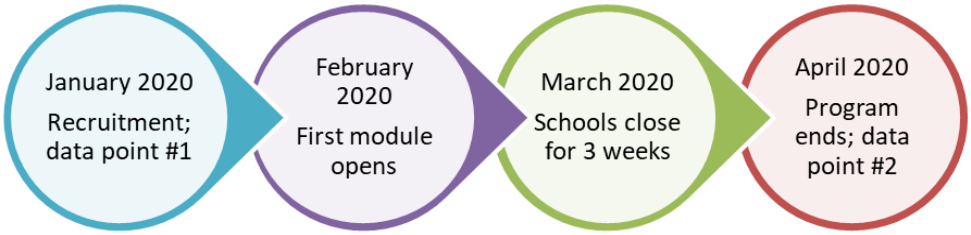

Figure 1 Data collection and intervention timeline

From mid-to-late January, through an email distribution list of current teacher interns, prospective participants received a message with information about volunteering for the study. Those electing to enroll in the study were presented with an online consent document and given the option to consent or decline their participation through an electronic form. Upon endorsing their consent, participants were provided access to the pre-intervention assessments. During the first week of February, program participants were given access to the first SCORE module. The program facilitator distributed a module worksheet each Monday. The format was a Word document that included step-by-step instructions and links to videos (e.g., facilitator's instruction, strategy demonstrations and examples). Participants were encouraged to contact the facilitator if they had any questions. Each module was due by the Sunday following its release. By the end of February, COVID was a widely known concern to the public, but there was little expectation of major changes in day-to-day affairs. On March 10, 2020, during Week 6 of SCORE, the first confirmed COVID case was announced in Michigan. At the end of that week, March 13, 2020, officials announced that schools would be temporarily closed. As this mandate was sudden and unexpected, there were no school-related operations for the next three weeks.

Because all procedures were executed through virtual means, the study continued as planned. At the time, participants were uncertain of the trajectory of their teaching internships but were asked to continue with SCORE as scheduled. Thus, it is noteworthy that participants completed the last two weeks of SCORE while schools were temporary closed and before the state's K-12 schools began utilizing remote learning options. After the final module was due for completion, the facilitator emailed all participants to provide access to the post-intervention assessments. The post-intervention questionnaire was similar to the one completed at pre-intervention, however the SCORE group was presented with additional items to assess feasibility. Participants completed the post-intervention assessments within a week of the final module closing.

3. Results

3.1 Pre-Intervention and Post-Intervention Analyses of Preliminary Efficacy

Means and standard deviations were calculated for each of the pre- and post-intervention outcomes and are presented by group and time in Table 3 below. Statistical power was limited as the sample was small and groups were unequal in size. In addition, some of the pre-intervention means were not equal between groups. Thus, pre-to-post differences were analyzed for each group separately. To test for significance in pre-to-post differences, researchers applied the standard alpha level of $p<.05$. Furthermore, Cohen's *d* was calculated for each outcome to determine the magnitude of pre-to-post changes. Because of the small sample size and limited statistical power, only results that demonstrated a medium (0.50) or large (0.80) magnitude of change were interpreted as having a cause-effect relationship with participation in SCORE.

Table 3 Pre-post means ($\bar{x}$), standard deviations (*s*), *p* values, and effect sizes (*d*) for the SCORE group (n=19) and comparison group (n=9).

		Pre		Post			
Outcomes		$\bar{x}$	*s*	$\bar{x}$	*s*	*p*	*d*
Stress Symptoms	SCORE	35.89	9.92	32.61	10.26	.181	-0.32
	Comparison	37.11	10.89	33.78	10.08	.148	-0.30
Compassion Satisfaction	SCORE	40.56	4.34	42.22	5.16	.101	0.33
	Comparison	44.11	3.33	44.33	5.05	.890	0.05
Burnout	SCORE	23.94	5.01	20.50	2.73	[1].008	**-0.83
	Comparison	21.00	4.12	20.89	3.55	.951	-0.03
STS	SCORE	22.17	4.38	21.44	4.09	.538	-0.17
	Comparison	18.22	3.77	20.89	3.59	.100	*0.69
Teacher Efficacy	SCORE	6.39	0.76	7.08	0.66	[1].004	**0.94
	Comparison	6.62	0.75	6.85	0.54	.394	0.34
Self-Compassion	SCORE	32.00	8.35	37.33	8.01	[1].012	*0.63
	Comparison	39.22	8.73	39.33	7.60	.960	0.01
Cognitive Reappraisal	SCORE	28.11	3.82	29.89	4.42	.087	0.42
	Comparison	30.67	6.08	30.56	4.19	.894	-0.02

Note. * = medium effect size. ** = large effect size. [1] = statistical significance at $p<.05$

Results show that at pre-intervention, the comparison group participants reported lower levels of unfavorable measures (e.g., burnout, STS) and higher levels of desirable outcomes (i.e., compassion satisfaction, teacher efficacy, self-compassion, cognitive reappraisal). From pre-to-post intervention, however, results for the comparison group did not reflect changes for most outcomes. The exception was for STS, where a medium-to-large effect ($d = 0.69$) was demonstrated. Instead of

a decrease, however, the comparison group mean showed a problematic increase from $\bar{x}$ = 18.22 (*s* = 3.77) to $\bar{x}$ = 20.89 (*s* = 3.59).

For the SCORE group, all pre-to-post changes were in the desired direction for each measure. A medium effect was demonstrated for increased self-compassion, *d* = 0.63, and large effects were found for decreases in burnout, *d* = -0.83, and increases in teacher efficacy, *d* = 0.94. There was no effect in pre-to-post changes for STS, *d* = -0.17, and all other effects were small. The small effect for increased cognitive reappraisal, however, was approaching medium in magnitude, *d* = 0.42.

3.2 Post-Intervention Feasibility Measures

3.2.1 Practicality

Aside from the participant whose data was excluded due to involvement with the research team, 22 participants were given access to SCORE. Three participants, as previously described, did not complete the program. Thus, 19 of 22 participants, or 86.5%, completed all eight modules. Because the completion rate was above 80%, SCORE is considered practical for use concurrent with teaching internships.

3.2.2 Treatment Acceptability

All SCORE participants, including the participant who completed the program partially, were asked to provide feedback about their perspectives and experiences with SCORE. Participant ratings and open-ended feedback suggest that SCORE has a high level of acceptability as a program for teacher interns.

SCORE Program Ratings. Using a 5-point Likert-type scale, participants responded to seven statements about their perceptions of SCORE. The majority (80-100%) endorsed favorable responses. See Table 4 for details about the frequencies and percentages of participant ratings for each item.

Table 4 Participant ratings of their SCORE experience.

Survey Item	Strongly Disagree	Somewhat Disagree	Neither Agree nor Disagree	Somewhat Agree	Strongly Agree
1. This program was easy to use.	0 (0%)	0 (0%)	0 (0%)	1 (5%)	18 (95%)
2. The online program more easily fit my schedule than traditional face-to-face meetings.	0 (0%)	0 (0%)	0 (0%)	1 (5%)	18 (95%)

3. I prefer the online program over traditional face-to-face meetings.	0 (0%)	0 (0%)	4 (21%)	1 (5%)	14 (74%)
4. As a result of my participation in SCORE, I made positive changes to my thoughts, behaviors, and/or habits relevant to teaching.	0 (0%)	0 (0%)	0 (0%)	9 (47%)	10 (53%)
5. As a result of my participation in SCORE, I made positive changes to my thoughts, behaviors, and/or habits in my personal life.	0 (0%)	0 (0%)	0 (0%)	9 (47%)	10 (53%)
6. I would recommend SCORE to others in a similar role.	0 (0%)	0 (0%)	0 (0%)	1 (5%)	18 (95%)
7. SCORE, or programs like SCORE, should be required in educator training and certification programs.	1 (5%)	0 (0%)	1 (5%)	2 (11%)	15 (79%)

Participant Feedback. The participants were asked to provide open-ended feedback based on five statements or inquiries. The top three themes identified for each item are presented in Figure 2.

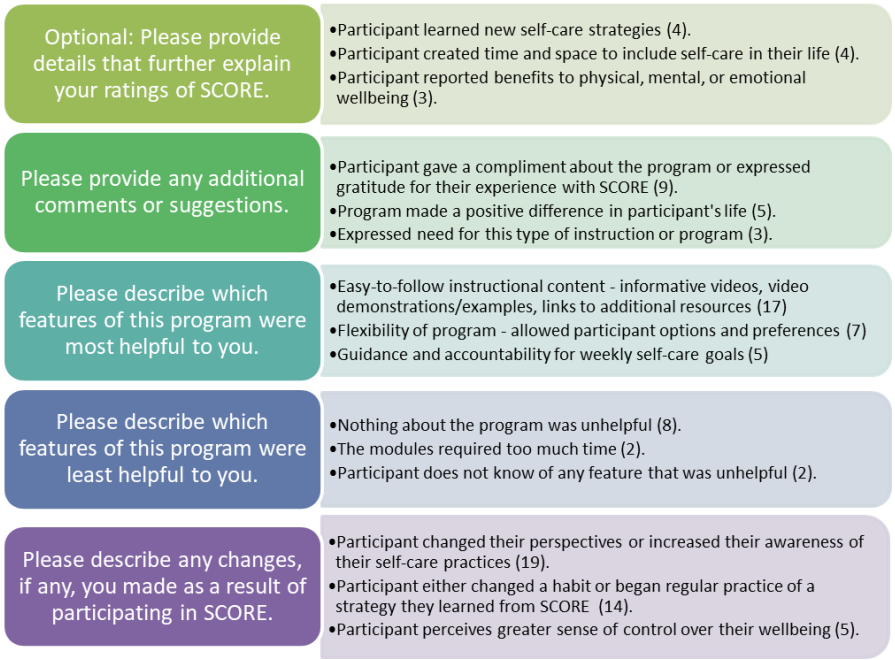

Figure 2 Top themes in participant responses for each open-ended item.

4. Discussion

The current study was a small, quasi-experiment that examined the feasibility and preliminary efficacy of SCORE, an asynchronous virtual stress management program for pre-service teachers. Researchers tested variables associated with stress and self-care practices. Furthermore, considerations are given to the unexpected pandemic-related disruptions to the teaching internships. Because of the virtual format, the study continued though participants were not attending their internships during the final two weeks of the study. Despite limitations to the study's design (e.g., small sample size, unequal groups, abrupt changes in conditions, homogenous race and gender identity of sample), the series of events afforded investigators a rare opportunity to explore the impact of a stress intervention amid a crisis.

Study findings corroborate previously known information about the therapeutic value of mind-body interventions for teachers, such as yoga, mindfulness, and relaxation techniques [20-23]. Results also align with prior research that suggests habits of mind, like use of cognitive reappraisal and application of self-compassion, have been associated with perceptions of health and happiness, both of which are related to desirable occupational outcomes like compassion for others, positive interpersonal relationships, job engagement, and career longevity [20, 22]. Previous studies also suggest that use of healthy coping mechanisms is associated with lower levels of burnout and higher levels of teacher efficacy [6, 12]. SCORE is a novel program in that it is personalized, integrative, and completely asynchronous. Furthermore, the study's targeted population – pre-service teachers – do not tend to receive this type of training as part of their professional preparation programs [17]. The results provide a foundation for further development of such training opportunities.

The comparison and SCORE groups both demonstrated decreases in stress-related symptoms, but the effects were small and unremarkable (d = -0.30 and -0.32, respectively). One possibility is that as far as symptoms go, there may have been relief from the school closures. Though schools eventually reopened, and participants completed their internships through remote learning formats, at the post-intervention data point, participants had not been attending their placements for three weeks. Thus, they may have experienced temporary reprieve from their daily grind. There was no way to assess for this, however, as participant consent did not include additional surveys or interviews about their COVID-related experiences. Another consideration is the assessment for this measure. Symptoms endorsed by participants (e.g., headaches, muscle tension) may reflect conditions other than stress. While stress is known to exacerbate the various physical and mental conditions endorsed by participants, it is not always the sole cause [6]. Because the assessment was a survey of symptoms, it may not reliably measure the degree to which an individual perceives their stress level. Future studies of SCORE may find it helpful to utilize a different instrument. Additionally, biometric indicators of stress, such as salivary cortisol, may result in clearer evidence of the degree to which participation in SCORE influences changes in stress.

Apart from stress symptoms, the comparison group's pre-intervention means indicated more favorable results than the SCORE group at the beginning of the study. The comparison group demonstrated lower levels of negative conditions (i.e., burnout, secondary trauma) and higher levels of positive conditions (i.e., compassion satisfaction, teacher efficacy, self-compassion, cognitive reappraisal). A plausible reason is because participants could elect to complete SCORE or provide comparison data without receiving the intervention. The choice to participate in the comparison group may reflect less perceived need for a stress intervention. First of all, investigators

do not know the degree to which comparison participants were already engaging in self-care practices. Comparison group participants may also have perceived more ideal conditions at the beginning of the study. From pre-to-post intervention, their results were relatively unchanged for all but one measure (i.e., STS). The SCORE group, however, demonstrated remarkable pre-to-post intervention differences for burnout, teacher efficacy, and self-compassion, which in turn, suggests benefits of their participation in SCORE.

Findings for pre-to-post intervention changes in STS were perhaps the most profound of the study's results. Previously, nothing was found in the extant literature about interventions specifically for teachers' STS. The intervention studies were focused on supporting students [18, 19]. The current study, however, investigated the impact of SCORE on STS. Prior to the implementation phase, the comparison group demonstrated much lower levels of STS ($\bar{x}$ = 18.22, s = 3.77). However, their post-intervention mean was substantially increased and reflected a medium-to-large effect size (d = 0.69). While this increase remained within the lower range of possible scores ($\bar{x}$ = 20.89, s = 3.59), such a substantial change in eight weeks is concerning – especially considering the likelihood these interns will continue to be exposed to STS in their careers [14]. The SCORE group, however, who began the study with a much higher mean ($\bar{x}$ = 22.17, s = 4.38), remained relatively unchanged (d = -0.17) by post-intervention ($\bar{x}$ = 21.44, s = 4.09). Findings therefore suggest participation in SCORE may help teacher interns mitigate the impact of exposure to secondary trauma. It is not that traumatic stress is reduced but rather prevented through participation in SCORE. A plausible explanation is that COVID-related disruptions may have imposed secondary traumatic effects on teacher interns. For example, items on the ProQoL [25] inquired about preoccupation with student issues and intrusive thoughts related to their work. The sudden school closures left many educators at all levels concerned about their students. For those three weeks, the status of students already facing difficult circumstances (e.g., poverty, family problems) were further elevated. SCORE participants, however, had recently completed modules about focusing on what they could control and letting go of what they could not. Letting go included spiritual practices (e.g., leaving concerns to a higher power, praying, energy-sending) and otherwise shifting focus to what they could control (e.g., engagement in self-care practices, trusting that everything always works out for the best). SCORE participants may have engaged with these practices and possibly mitigated their potential for developing STS. Further research, including qualitative studies that reflect on these experiences, may provide richer information about ways some pre-service teachers managed their response to the disruptions and uncertainties.

Another remarkable finding of this study was for teacher self-efficacy. Given that the primary goal of teacher preparation is to produce a workforce of qualified and capable teachers, these results may be especially of interest to university program administrators. As the study's duration coincided with the participants' teaching internships, the investigators expected teacher self-efficacy to increase for all participants. Nonetheless, consistent with the initial pilot of this program [6], SCORE participants reported a far greater increase in teacher self-efficacy. While the comparison group demonstrated a small effect (d = 0.34) for a pre-to-post intervention increase, the SCORE group's increase revealed a large effect (d = 0.94). Findings also corroborate previous research that suggests an inverse correlation between teacher burnout and self-efficacy [10, 13]. Therefore, it may behoove teacher educators to consider the extent to which their preparation programs incorporate concepts of stress management and self-care. Such training not only has promise for supporting pre-service teachers' wellbeing, but SCORE, or programs like SCORE, may

further elevate their teaching self-efficacy which in turn, may increase their performance as in-service teachers.

5. Conclusions

Including SCORE or similar instruction as part of a teacher preparation program is not only feasible, but it addresses a need long overlooked in new teacher training. Based on participant feedback, their experience with SCORE influenced their self-care engagement and yielded positive outcomes. To make SCORE more sustainable, it may be helpful to revise the program so that modules are shorter in length. Likewise, administrators of teacher preparation programs may wish to revisit their requirements and assess whether volume can be reduced in other areas to allow space for their trainees to develop the self-care habits that will support them throughout their career. Furthermore, integrating healthy practices, such as yoga, mindfulness, relaxation and instilling mindful habits such as self-compassion and cognitive reappraisal along with formal preparation for the more visible aspects of teaching – instructional strategies, behavior management, collaboration – would offer a holistic training experience that better prepares teacher interns for their future professional roles.

Because SCORE was a new intervention tested with teacher interns, these findings are only the beginning for development of a research base that suggests effective ways to teach stress-coping and self-care strategies to teacher trainees. Results of this study show promise for SCORE in cultivating these skills and therefore, promoting teacher wellbeing, capacity for job performance, and career longevity [6, 11, 12, 17, 21-24].

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Author Contributions

Dr Brandi Ansley was the principal investigator of this study. Dr Ansley engaged in all phases with this study, from design, permissions, recruitment, implementation, data collection, data analysis, and drafting the manuscript for publication. Meagan Wander assisted with data analysis and dissemination, which included proofreading and editing this manuscript.

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Competing Interests

Dr Brandi Ansley is the developer and facilitator of Self-Care Options for Resilient Educators, which was examined in this research.

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