



# Transforming Empathy-Based Stress to Compassion: Skillful Means to Preventing Teacher Burnout

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## Abstract

**Objectives** Teachers play a critical role in preparing our children and adolescents for a successful future. However, despite the large number of students impacted by trauma and adversity, teachers are often not well prepared to provide trauma-sensitive support. Furthermore, while working to support students exposed to trauma and adversity, teachers may experience empathy-based stress exacerbating already high levels of stress among them. This narrative review explores the issue of empathy-based stress within the context of the prosocial classroom model which proposes that teachers' social and emotional competence and well-being are key to their ability to create and maintain supportive learning environments critical to student academic and behavioral outcomes.

**Methods** Recent findings in neuroscience and education research are applied to support teachers' development of these competencies.

**Results** We propose that shifting from empathy-based stress to compassionate responding may be one such competency to help teachers' respond effectively to their students' needs while protecting their own wellbeing.

**Conclusion** We review research that supports this proposition and explore implications for teacher professional learning, educational policy, and further research.

**Keywords** Trauma · Empathy-based stress · Vicarious trauma · Secondary trauma · Compassion · Teachers

Today, our education systems are impacted by high levels of teacher stress and burnout. Indeed, teachers report some of the highest levels of stress among all professionals (Greenberg et al., 2017) and, since the advent of the COVID-19 pandemic, these levels have skyrocketed (Kurtz, 2021; Steiner & Woo, 2021). At the same time, students' exposure to trauma has also increased, along with increases in mental health problems (Raccanello et al., 2022). Teachers often develop close relationships with their students and are in the front lines in terms of witnessing and hearing about students' experiences of adversity and trauma (Hydon et al., 2015; Sizemore, 2016). The exposure to student adversity and trauma may lead to empathy-based stress (EBS), defined as “stressor–strain-based process of trauma at work, wherein exposure to secondary or indirect trauma, combined with empathic experience, results in empathy-based strain and additional outcomes (i.e., other

occupational health/strain outcomes; work affect, behaviors, and cognitions)” (Rauvola et al., 2019, p. 299). This may add to teachers' already high levels of stress and further contribute to burnout. However, research suggests that the capacity to intentionally cultivate compassion may serve as a skillful means to protect against EBS (Klimecki et al., 2014). Thus, in this narrative review, we propose that professional learning that introduces the skill to intentionally shift EBS to compassion may be a critical component of the social and emotional competencies teachers need for their profession. In this context, we define compassion as “the feeling that arises in witnessing another's suffering and the motivates a subsequent desire to help” (Goetz et al., 2010, p. 351).

We begin this article by reviewing what is known about the impact trauma has on student learning and behavior, and consequently the learning environment, and teacher well-being, including EBS and burnout. We describe what may constitute a supportive learning environment for trauma-exposed students, introduce the Prosocial Classroom Model (Jennings & Greenberg, 2009), and elaborate on the social and emotional competencies teachers need to effectively create supportive learning communities. We review

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neuroscience research demonstrating that the capacity to intentionally cultivate compassion may protect against EBS, and review the research reporting on the impacts of professional development programs that teach this skill to teachers. We conclude with recommendations for practice, policy, and future research.

## Student Exposure to Trauma and Its Impact on Teachers' Well-Being

The Substance Abuse and Mental Health Services Administration (SAMHSA, 2014) defines individual trauma as the result of an event or circumstances that are experienced as physically or emotionally harmful and have “lasting adverse effects on the individual’s functioning and mental, physical, social, emotional, or spiritual well-being” (2014, p. 7). Millions of children and adolescents are exposed to traumatic events worldwide (e.g., Smith et al., 2019), and exposure to trauma can have long-term adverse impacts on their social, emotional, and physical development and well-being (Fairbank & Fairbank, 2009; Pynoos et al., 2009). In the USA, it is estimated that 50–60% of individuals experience some type of adverse or trauma experience before they reach adulthood (Merrick et al., 2018; National Child Traumatic Stress Network, 2018). Experiences of discrimination, adversity, and chronic stress from systemic inequities (Akbar, 2017; Myers et al., 2015; Sondel et al., 2018); historical trauma (Kirmayer et al., 2014); and intergenerational trauma (Goodman, 2016) increase the risk of trauma among students from marginalized groups. In addition, schools located in high-poverty, urban regions of the USA encounter significant challenges such as high rates of teacher turnover and low teacher effectiveness (Carver-Thomas & Darling-Hammond, 2019; Papay et al., 2017). Consequently, children and adolescents who are most vulnerable to trauma and could benefit greatly from a reliable and competent teaching staff are the least likely to have such access (Jennings, 2018). With the advent of the COVID-19 pandemic and subsequent disruption to the routine from school closures, prolonged financial instability among families, significant decrease in social interactions, and increased presence of illness and death in all communities, the number of students who have experienced trauma or are at risk of trauma has surged (Fitzgerald et al., 2021; Taylor, 2021).

Students with trauma experiences often display behavioral, socioemotional, and/or academic challenges in the classroom that may negatively impact students’ well-being (Bell et al., 2013) and may require special education supports (National Child Traumatic Stress Network, 2018; Tuchinda, 2020). Although adaptive in the context of trauma and adversity, behaviors stemming from trauma experiences,

such as hypervigilance, aggressiveness, and dissociation, can interfere with students’ ability to build healthy relationships and to deploy executive functions that support academic learning (Jennings, 2018). Moreover, living under conditions of high stress can disrupt a student’s ability to think clearly, consider long-term consequences, and weigh all options before decision-making (Starcke & Brand, 2012). Consequently, studies have shown that students impacted by adverse experiences are at increased risk for future suspensions (Ramirez et al., 2012), delinquency, substance abuse (Lansford et al., 2002), significant discrepancies in focus (Delaney-Black et al., 2002), and decreased high school graduation rates (DePaoli et al., 2018).

To address the effects of trauma and help traumatized individuals, Bloom’s (1999) recommendations for creating safe environments to counteract the effects of chronic stress can be directly applied to the learning environments found in schools. A supportive environment for students with trauma experiences should focus on mastery, avoid exacerbating experiences of helplessness, provide ample opportunities to verbally and nonverbally express experiences and feelings, and establish environments that prioritize and preserve safety (Jennings, 2018). Students with trauma experiences often need relationship coaching and exposure to healthy and supportive relationships with adults (Keane & Evans, 2022). To provide this support, educators need to cultivate a compassionate perspective that understands that many behaviors that appear to be socially maladaptive and even destructive in the school setting may be adaptive to the students’ trauma environment or be their attempt to manage unbearable and overwhelming emotions (Ellis & Del Giudice, 2019; Jennings, 2018). In addition, educators trained to identify trauma-impacted student behaviors may act as mediators who translate nonverbal distress signals into verbal understanding to garner support for healthy change in students. As a learning community, sources of social stress may be evaluated and refined to buffer or reduce the effects of these stressors (Levy et al., 2016).

Schools have a shortage of professionals with expertise to provide trauma-specific treatment to vulnerable students (Lin et al., 2016). The gap in the emotional and mental health support students may need but fail to receive from home and through mental health professionals is often filled by teachers (Brunzell et al., 2015) who already have many other responsibilities and demands on their time (Prilleltensky et al., 2016). In addition, teachers are often not well prepared to provide support for the many students who are impacted by trauma and adversity and are frequently troubled by witnessing the effects of students’ experiences of adversity (Fleckman et al., 2022). Despite the U.S. Surgeon General’s (2000) recommendation for teachers to receive training to recognize and manage mental health challenges among students, many schools lack the resources

to provide it (Hydon et al., 2015). The heightened stress caused by the impact of trauma-related behaviors in the classroom may be further compounded when teachers feel ill prepared to support students or lack training in mental health management (Kidger et al., 2009; Rothì et al., 2008). This adds to teachers' emotional labor, stress, and anxiety (Alisic et al., 2012; Blitz et al., 2016; Herman et al., 2018), which may lead to negative consequences of empathic disengagement, burnout, and higher rates of turnover (e.g., Caringi et al., 2015).

## Defining Empathy-Based Stress

Teachers ill prepared to support students exposed to trauma may become at risk for EBS. Collectively, the research on secondary exposure to trauma is challenged by construct definition and measurement confusion. Various terms have been used to describe the phenomena of empathic distress that surfaces from working with those who have experienced trauma. While subtle differences exist, the terms compassion fatigue, secondary traumatic stress, and vicarious trauma have been used interchangeably to refer to negative consequences of empathic engagement with an individual who has experienced trauma (Sabin-Farrell & Turpin, 2003). Voss Horrell et al. (2011) suggested that compassion fatigue, burnout, vicarious trauma, and secondary traumatic stress encompass a homogenous group of psychological consequences to secondary exposure from shared risk factors. Notably, the term “compassion fatigue” has been used to describe the “cost of caring” that may involve the reduced capacity to feel empathy (Figley, 1995). However, in light of the research that follows differentiating compassion and empathy, this term has become viewed as a misnomer (DeDecker, 2020).

In a qualitative review of the literature reporting on instances of compassion fatigue, secondary traumatic stress, and vicarious trauma, Rauvola et al. (2019) presented the overarching term *empathy-based stress* (EBS), defined as stress associated with exposure to secondary or indirect trauma combined with empathy and psychological distress resulting in post-traumatic stress symptoms and disengagement from work and helping behaviors (Rauvola et al., 2019). In this paper, we have chosen to use the term EBS in this way. The working definitions and symptoms of each underlying construct are summarized in Table 1 (Rauvola et al., 2019).

Research on the EBS strains have shown high levels of EBS among school personnel, including teachers, akin to levels found among mental health workers (Borntreger et al., 2012; Ormiston et al., 2022). Teachers who continuously work with students who have a history of trauma or hear about students' trauma experiences may experience EBS

**Table 1** Empathy-based stress construct definitions, symptoms, and related terminology

Construct	Definition	Symptoms	Alternate and related terms
Empathy-based stress	Experience of adverse psychological and/or physical reactions to trauma exposure at work, resulting from empathic engagement following trauma exposure	Symptoms vary, depending on the specific manifestation of strain (i.e., vicarious traumatization, secondary traumatic stress, compassion fatigue, other health outcomes)	“Risks and hazards” of caring work
Vicarious traumatization	Transformation of the “inner experience” of trauma-exposed individuals (McCann and Pearlman 1990; Pearlman and Saakvite 1995)	Symptoms include worldview shifts and cognitive disruptions	Vicarious trauma; vicarious post-traumatic growth, vicarious resilience
Secondary traumatic stress	Stress reaction induced following exposure to traumatic material; PTSD parallel (Figley, 1995)	Symptoms similar to PTSD, but from secondary exposure	Secondary traumatization, secondary traumatic stress disorder
Compassion fatigue	Acute, affective phenomenon engendering high levels of stress after trauma exposure (Figley, 1995)	Symptoms parallel original trauma victim's (e.g., avoidance, hyperarousal, numbing, sleep disturbances)	Compassion stress; compassion satisfaction

From “Compassion fatigue, secondary traumatic stress, and vicarious traumatization: A qualitative review and research agenda” by R. S. Rauvola, D. M. Vega, and K. N. Lavigne, 2019, *Occupational Health Science*, 3(3), p. 297–336 (<https://doi.org/10.1007/s41542-019-00045-1>). Copyright 2019 by Springer Nature

and its associated symptoms: anxiety, sleep difficulties, decreased productivity (Caringi et al., 2015; Hatcher et al., 2011), decreased motivation, withdrawal from colleagues, increased absenteeism (Wolpov et al., 2009), physical and emotional problems, behavioral changes, cognitive dysfunction, and spiritual uncertainty (Hupe & Stevenson, 2019; Hydon et al., 2015). At the extreme, teachers who are exposed to accounts of students' trauma experiences may develop post-traumatic stress symptoms similar to first responders and child welfare workers (Knight, 2010; Motta, 2020).

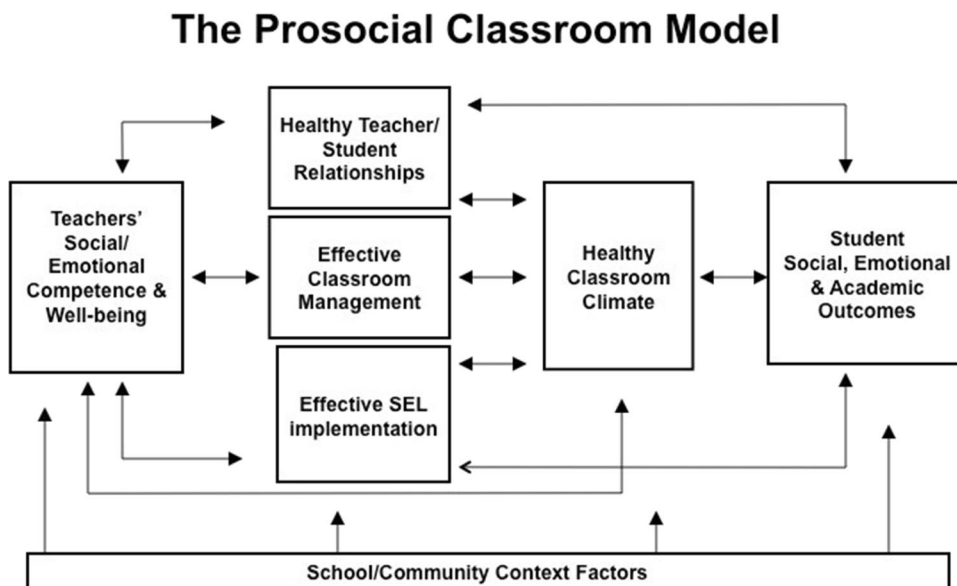
Among human service professionals working with trauma survivors, EBS has been shown to lead to burnout, a construct involving emotional exhaustion, depersonalization, and reduced personal accomplishment (Maslach & Jackson, 1981). In a meta-analysis of 41 empirical studies of professionals working with trauma survivors (e.g., social workers, nurses, therapists, soldiers, law enforcement, etc.), Cieslak et al. (2014) found strong associations between secondary traumatic stress and burnout (weighted  $r = 0.69$ ). Schmidt et al. (2022) found that secondary traumatic stress significantly and positively predicted burnout among early-career school-based agricultural education teachers. Both the ill effects of stress and its correlation with increased levels of burnout and decreasing teacher efficacy (Brouwers & Tomic, 2000; Hoglund et al., 2015) and the challenges of working with students who have experiences of trauma are well researched (Hydon et al., 2015) suggesting that EBS may constitute a stressor that directly contributes to teacher burnout. However, more research is needed to better measure, understand, and support teachers who may experience EBS in the context of their work.

## Teacher Social and Emotional Competence

To perform their roles as instructors, provide students with social and emotional support, and cope with the demands of working with students exposed to trauma, teachers need particular social and emotional competencies that can be acquired through psychoeducational professional learning (Brown et al., 2020). The prosocial classroom theoretical model (Jennings & Greenberg, 2009) proposes that teachers' social and emotional competence (SEC) and well-being support their capacity to create and maintain learning environments associated with desired student academic and behavioral outcomes. The model further describes how supportive teacher-student relationships, effective classroom management, and effective social emotional learning program implementation contribute to a supportive classroom climate and desirable student outcomes (Fig. 1). Social and emotional learning programs are an effective means for building socially supportive learning communities, especially in the wake of the COVID-19 pandemic (Cipriano et al., 2020), and research has shown that social support can protect individuals from the lifelong negative impacts of trauma (McLaughlin et al., 2020).

Jennings and Greenberg (2009) asserted that context-specific SECs are required for teachers to manage the demands of the classroom. During emotionally challenging times, more socially and emotionally competent teachers can manage their physiological arousal in healthy ways that do not detract from their relationships with students and coworkers, enabling them to view their work as more enjoyable (Goddard et al., 2004). In contrast, when teachers lack these competencies, students show lower levels of on-task behavior and performance (Marzano et al., 2003)

**Fig. 1** A model of teacher well being and social and emotional competence, support and classroom and student outcomes. Note. From "The Prosocial Classroom: Teacher Social and Emotional Competence in Relation to Student and Classroom Outcomes" by P. A. Jennings, and M. T. Greenberg, 2009, *Review of Educational Research*, 79, p. 491-525 (<https://doi.org/10.3102/0034654308325693>). Copyright 2009 by SAGE Publications



and the classroom climate deteriorates, triggering a “burnout cascade” (Jennings & Greenberg, 2009) within the teacher. Teachers become emotionally exhausted as they try to manage the increasing challenging behaviors, and they may resort to reactive and punitive responses that do not teach self-regulation, may trigger students’ trauma symptoms (Jennings, 2018), and may contribute to a self-reinforcing cycle of classroom disruption (Osher et al., 2007). We argue that today, those SECs include the capacity to recognize students’ needs and cultivate compassion to both address their needs and protect themselves against the negative effects of EBS.

### Need for Professional Learning to Address Empathy-Based Stress and Promote Social and Emotional Competence

School interventions designed to address trauma-related stress often focus entirely on students (Jennings, 2018), neglecting to provide teachers with the support they need to address students’ trauma symptoms and address symptoms stemming from their own trauma histories (Hydon et al., 2015). The latter is particularly relevant, as having a personal trauma history has been shown to be positively related to secondary traumatic stress (Hensel et al., 2015). EBS may expedite the “burnout cascade” (Jennings & Greenberg, 2009). Indeed, classroom teachers who struggle to teach vulnerable students report compounding symptoms of burnout (Sullivan et al., 2014). This burden adds to the ever-increasing professional and emotional demands placed on teachers (Provasnik & Dorfman, 2005). Thus, teachers facing challenging student behaviors and increasing mental health concerns need both the knowledge and support to implement new trauma-informed practices (Hughes, 2004) and tools for stress reduction, self-regulation, coping strategies, and self-care (Hydon et al., 2015; Jennings, 2018).

Particularly in the context of the recovery from the COVID-19 pandemic, professional development that addresses management of EBS as a part of teacher professional learning is critical. Since SEC is context dependent (Jennings & Greenberg, 2009), teachers who have previously functioned at a high level before the pandemic may need special training to adapt and manage their own social and emotional life in the post-pandemic context while providing social and emotion support to their students. During the height of the COVID-19 pandemic, teachers faced unique struggles to manage their classrooms. While coping with ubiquitous stressors, they also had to transfer to a remote format of teaching while providing instructional and emotional support to their students with limited resources from their schools (Kurtz, 2020). This was an extremely challenging task because the proximal positive relationships between

teachers and students is a critical component of both student’s academic, social, and emotional development, and teachers’ own work satisfaction (Klem & Connell, 2004; Spilt et al., 2011). The COVID-19 pandemic also emerged at a particularly challenging time of high teacher burnout and shortage in the USA (García & Weiss, 2019; Kurtz, 2020). As we have discussed, EBS is a growing challenge among teachers, especially during the COVID-19 pandemic, which may contribute to the high levels of stress teachers report. Therefore, there is a need to better understand EBS and how to support the development of teachers’ capacity to manage this stress. In the next section, we differentiate empathy and compassion and explain how intentionally cultivating compassion may help reduce and prevent EBS.

### Reducing and Preventing Empathy-Based Stress by Cultivating Compassion

In their groundbreaking work, Klimecki and Singer (2011) clarified the distinction between empathy (the capacity to share another’s feelings) and compassion (the feeling of concern for another who is suffering and the motivation to help). Empathy plays a role in compassion in that we cannot recognize and understand another’s suffering without it, but empathy directed toward suffering can also be painful (Gilbert, 2010). Similar to earlier research (Batson, 1991; Eisenberg et al., 2006), Klimecki and Singer (2011) found that when directed toward someone who is suffering, empathy can easily lead to distress and withdrawal, whereas compassion leads to positive affect and altruism. They also found important differences in brain activity between these two states related to these emotional and behavioral outcomes. While excessive empathetic distress led to increased activations in a brain network associated with negative affect and pain (insula and anterior middle cingulate cortex), training in compassion increased positive emotions, helping behavior, and activations of brain networks associated with reward, positive affect, and social connection (medial orbitofrontal cortex and striatum) (Klimecki & Singer, 2011).

Based upon these findings, Singer and Klimecki (2014) presented a model to differentiate between two contrasting responses to the suffering of others: empathic distress and compassion. They define empathetic distress as “a strong aversive and self-oriented response to the suffering of others, accompanied by the desire to withdraw from a situation in order to protect oneself from excessive negative feelings” (Singer & Klimecki, 2014, p. 875). In contrast, they state that “compassion does not mean sharing the suffering of the other: rather, it is characterized by feelings of warmth, concern and care for the other, as well as a strong motivation to improve the other’s wellbeing” (Singer & Klimecki, 2014, p. 875). Thus, empathy has risks of responding in ways that

may be harmful to both the person experiencing empathy and the subject of the empathy, since there is a tendency to withdraw, whereas compassion, by definition, is associated with positive affect, approach, and prosocial motivation. These findings provide insight into possible intervention strategies to reduce and prevent EBS among those who work with individuals who are exposed to trauma and are exhibiting trauma symptoms.

A traditional Buddhist contemplative practice to cultivate compassion called loving-kindness meditation, *mettā* (Pali) or *maitrī* (Sanskrit), has been studied extensively (e.g., Galante et al., 2014; Zeng et al., 2015). In this practice, participants are invited to cultivate feelings of care and benevolence toward themselves and others who are more or less close to them, including loved ones, strangers, and people they find difficult. The intention of this practice is to learn to generate and extend feelings of warmth and compassion toward all human beings, and ultimately all living things, with the understanding of interdependence (Chödrön, 2017). Throughout the remaining sections of this paper, when we refer to compassion training, we are referring to this traditional practice (e.g., loving-kindness meditation).

To examine whether compassion training promotes prosocial responding, Leiberg et al. (2011) conducted a series of experiments using the Zurich Prosocial Game, a computerized experimental task that allows researchers to examine helping behavior toward strangers. Two players simultaneously search for treasures in a maze with occasional obstacles, and players can help one another with these obstacles, allowing researchers to observe and record helping behavior under controlled conditions. Researchers found that participants randomly assigned to several days of compassion training showed increases in helping behavior, compared to those assigned to a control condition involving a memory training. Similarly, another group of researchers found that participants who engaged in compassion training were more likely to offer a seat to a person using crutches than those in a waitlist control group (Condon et al., 2014).

To examine the neural plasticity associated with compassion training, Klimecki et al. (2013) conducted a series of fMRI studies involving participants who received compassion training over several days. To examine whether a short-term compassion training can change both self-reported emotional responses to suffering and associated brain activations, researchers randomly assigned participants to either view video clips of people suffering or affectively neutral scenes from everyday life while their brains were being scanned, before and after they participated in compassion training or a control condition involving memory training. After viewing the clips, participants were asked to report to what degree they felt empathy, positive emotions, and negative emotions when viewing the clip.

The compassion training resulted in increased neural activations of the medial orbitofrontal cortex and the striatum, brain regions associated with positive affect and social connectedness (e.g., rewards). Furthermore, participants' self-reports of positive affect in response to both the scenes of suffering and everyday scenes increased as a result of compassion training. Comparable results were found across several similar studies (Klimecki et al., 2014). Thus, compassion training may neutralize feelings of burnout and social disconnectedness by strengthening feelings of reward through positive affect and social connectedness.

Extending this research further, Klimecki et al. (2014) compared individuals randomly assigned to two conditions: empathy and then compassion training and memory training (active control group). The empathy training procedure was similar to the compassion training (traditional loving-kindness practice), but instructed participants to focus on resonating with suffering, rather than extending caring feelings toward others. Each group was tested using self-report measures of affect and the video clip paradigm described above at three time points: baseline, after the treatment group received the empathy training and then again after this group received the compassion training. During each of these training periods, the control group received memory training. The empathy training involved asking participants to imagine their suffering as if it were their own and the compassion training was the same as in the previous research (e.g., loving-kindness meditation).

This study design allowed investigators to identify changes associated with excessive empathizing with suffering and to examine whether compassion training would result in more adaptive responses. Furthermore, it allowed investigators to compare different empathy-related responses within participants. Results showed that the empathy training increased both self-reported empathy and negative affect. Interestingly, this increase was found after viewing both the video clips of people experiencing suffering and those of everyday events, which were affectively neutral, showing that empathizing too much not only results in negative emotions in response to suffering, but can also lead to a more emotionally negative response to neutral stimuli. This may be evidence that excessive empathy impacts overall mood.

Compared to the control group, investigators found that empathy training increased activations in the insula and the anterior middle cingulate cortex, providing evidence for neural plasticity associated with EBS. As hypothesized, compassion training reversed these effects on both the self-reported negative affect and the neural activation. After compassion training, participants' self-reported negative affect returned to baseline levels and positive affect increased in response to the clips of suffering and the clips of everyday events. Compassion training also resulted in an increase in

activation of the medial orbitofrontal cortex and the striatum, associated with reward and social connectedness.

## Compassion-Based Approaches to Supporting Teachers' Well-Being

Based upon these findings, we argue that professional learning involving compassion practice may be essential for teachers who are working closely with students exposed to trauma and hardship. Indeed, several studies of professional learning programs for teachers that include training in this practice have shown improvements in teachers' SEC, well-being, and prosocial behavior. Cultivating Awareness and Resilience in Education (CARE) is one such program that combines mindful awareness and compassion practices with emotion skills training to build teachers' SEC and well-being. In a large randomized controlled trial in 32 high-poverty (> 75% of students qualified to receive free or reduced price lunch; Glander, 2015) urban schools involving 224 teachers randomly assigned to receive CARE or be in a waitlist control group, the program was found to significantly improve teachers' emotion regulation and mindfulness and reduce psychological distress and time urgency, some of which continued to improve months later (Jennings et al., 2017, 2019). Furthermore, classroom observations using a standardized measure of classroom interactions (CLASS; Pianta et al., 2008) showed that classrooms of teachers who received CARE were more emotionally supportive than those of control group teachers. More specifically, teachers were observed to be more sensitive to the needs of their students and the classrooms were more emotionally positive and productive. Furthermore, teachers who received CARE reported that students improved in engagement, motivation, and reading competence (Brown et al., 2023).

Another mindfulness-based program designed to support teachers' SEC included similar mindfulness and compassion practices but also self-compassion practices were studied in two field trials involving 113 primary and secondary school teachers from Canada and the USA (Roeser et al., 2013). Data were collected at three time points: baseline, immediately post-program, and at 3-month follow-up. After baseline assessment, teachers were randomly assigned to receive the program or be in a waitlist control group. Compared to controls, the intervention group demonstrated greater mindfulness, focused attention and working memory capacity, and occupational self-compassion, and reductions in occupational stress and burnout at post-program and follow-up. However, there were no statistically significant differences between the groups in physiological measures of stress. A notable finding was that group differences in mindfulness and self-compassion measured post-program mediated reductions in stress, burnout, and symptoms of anxiety and

depression at follow-up, suggesting that the program had direct impacts on mindfulness and self-compassion that resulted in subsequent improvements in stress, burnout, and psychological symptoms.

These studies suggest that compassion training may play a role in reducing teachers' psychological distress and promoting their SEC and well-being. Although trauma exposure was not explicitly measured in either of these studies, given the very-high-poverty urban context of the schools in the CARE study, it is likely that many of the students in the sample were at increased risk for trauma exposure and those rated low on social skills may have been exhibiting symptoms of trauma or extreme adversity. The second study did not report the demographic characteristics of the schools where the teachers worked, so it is not possible to make assumptions about the probability of trauma exposure among these teachers' students based on exposure to poverty. Next, we discuss the importance of these findings and their implications for future research, policy, and practice.

## Discussion

Teachers are facing the highest levels of occupational stress in recent history contributing to growing levels of attrition. This poses immediate and long-term threats to the teacher supply (Steiner & Woo, 2021), especially in low-income urban contexts where exposure to trauma is more likely and students may most benefit from high-quality learning environments (Jennings, 2018; Papay et al., 2017). With the advent of the COVID-19 pandemic, both trauma and exposure to suffering became ubiquitous, especially among teachers who found that many of their students became disconnected from school due to various hardships (Kurtz, 2021). The prosocial classroom model explains how teachers' social and emotional competencies support their capacity to create and maintain emotionally supportive classroom environments associated with desired student academic achievement and prosocial behavior (Jennings & Greenberg, 2009). These competencies include the ability to manage the various forms of distress that arise in the classroom context, including interactions with trauma-exposed students that may result in EBS. Furthermore, teachers' SEC is key to creating emotionally safe environments that help students exposed to trauma adapt to the school environment (Jennings, 2018).

We reviewed recent findings in neuroscience that have demonstrated clear biological and behavioral differences between empathy (i.e., sharing another's feelings) and compassion (i.e., the feeling of concern for someone who is suffering and the motivation to help them). Although empathy is critical to helping behavior because we need to be able to recognize and understand cognitively and emotionally what another is feeling, it has risks when it becomes distressing.

Empathetic distress can lead to withdrawal behavior, whereas compassion is associated with approach behavior, positive affect, and helping behavior.

We also reviewed research demonstrating that compassion can be intentionally cultivated with practice. Further, professional learning programs for teachers that include compassion training promote important SECs and well-being resulting in supportive learning environments and desired student outcomes (Brown et al., 2023; Jennings et al., 2017, 2019). We argue that those SECs include the capacity to recognize students' needs and cultivate compassion in a way that address students' needs *and* protects teachers from the negative effects of EBS. However, more research is necessary to address this hypothesis and to examine the efficacy of compassion training on EBS among teachers.

One first step would be to include self-report measures of EBS when testing interventions designed to promote teacher SEC, such as CARE. Furthermore, interventions such as CARE may be refined to apply compassion training to specific EBS experiences teachers are facing in their own context. For example, in the CARE program, teachers reflect on specific incidents they experience that trigger automatic stress reactions and interfere with their teaching. Information about EBS, its impacts on psychological and behavioral outcomes, and how the intentional cultivation of compassion may buffer against these negative outcomes can be included in programs like CARE to help teachers more explicitly apply compassion training to prevent EBS.

Studies of programs like CARE (or an adaptation of CARE) can be refined with the addition of observational measures, other objective measures of helping behavior, and/or responses to suffering appropriate for the classroom context at multiple time points during training. This may lead to better understanding of the process of developing the skill to shift one's psychological state from EBS to compassion. The use of qualitative methods may be critical to help us understand the internal processes (i.e., thoughts and feelings) that teachers experience as they work to deploy the process of shifting from EBS to compassion. Additional research is also required to understand the mechanisms of change. The programs described earlier involve multiple components (e.g., mindfulness- and compassion-based practices and emotion skills instruction), and it is difficult to ascertain which elements produced which outcomes. New methods in implementation science that isolate training elements may be applied to tease out which elements alone or in combination are most appropriate to a particular context (Collins et al., 2007). Other intervention strategies that further refine the cultivation of compassion in the classroom context can also be explored this way.

The research reviewed in this article has important implications for practice and policy. Teacher education programs and teacher professional learning need to address

trauma-sensitive supports for students *and* teachers. It is becoming clear that teaching is an emotionally demanding profession and that teachers require more time for professional development to cultivate the social and emotional competencies they need to manage these demands. Acquiring SEC including the capacity to intentionally generate and extend compassion may help teachers build resilience and serve as protective factors to prevent EBS.

Programs such as CARE may help; however, they are time consuming, and schools have difficulty fitting it into their limited time for professional learning. School districts are suffering from the growing teacher shortage, and policy makers are looking for ways to better support teachers. Intentionally expanding the time teachers have to do this work and providing evidence-based programming may become a necessity. However, the responsibility for the demands teachers face cannot be laid on them alone. Antiquated, unnecessary, and burdensome structural barriers and pressures in the school systems make teachers' jobs more difficult. These require major systemic changes that cannot be addressed by simply improving teachers' coping strategies (Jennings, 2020). We need to transform our systems to better support the well-being of both children and adults, e.g., school systems that promote prosocial leadership by reducing interactions that emphasize coercion and threat and promoting interactions that are emotionally supportive (Jennings et al., 2021). School leaders can take concrete steps to reduce the burden on teachers by recruiting and retaining more paraprofessionals to allow teachers to take breaks when needed (Carver-Thomas & Darling-Hammond, 2019). More school mental health workers are required to lift some of the burden of helping children and adolescents with trauma symptoms that interfere with learning to school (Garcia & Weiss, 2020). Leaders can treat teachers as professionals by increasing compensation, autonomy, and influence. They can engage teachers in decisions that will directly impact them, such as the adoption of a new curriculum or evaluation protocol and support collaboration and learning communities (Jennings, 2020). Additional supports will be required to support the retention of effective teachers in high-poverty, urban contexts. This may include additional financial incentives and reduced class sizes (Garcia & Weiss, 2020).

In conclusion, cultivating compassion has the potential to counteract the negative effects of EBS. Recent research in the field of neuroscience shows that compassion is a state that can be intentionally cultivated through practice and provides hope for sustainability among helping professionals who work with people exposed to trauma. Thus, compassion training may be a critical component of professional learning to cultivate the SEC teachers need to support their students while also protecting themselves against the negative impacts of EBS.



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