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**TEACHER EMOTION REGULATION AND PROFESSIONAL QUALITY OF LIFE
AS PREDICTORS OF RESPONSES TO STUDENTS**

A Dissertation in
School Psychology

by

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ABSTRACT

The current study focused on teacher emotion regulation, professional quality of life, and responses to and relationships with a hypothetical student in a sample of Head Start teachers and teacher aides. The purpose of the study was to further knowledge along strands of research on teacher experience of secondary traumatic stress (STS)/compassion fatigue (CF) as well as teacher-specific utilization of emotion regulation strategies. The four primary research aims included an exploration of the degree and direction to which study variables were correlated; the degree to which expressive suppression and other related variables predicted emotionally punitive responses to a hypothetical student; whether compassion satisfaction (CS) moderated the relationship between suppression and CF; and the degree to which teachers' cognitive reappraisal and CF predicted relationship quality with a hypothetical student. A non-experimental, cross-sectional study design was employed. As hypothesized, the use of suppression to regulate emotions predicted punitive responses to students, while CS and working experience served as protective factors against punitive responses. CS did not serve as a moderating factor between suppression and CF as hypothesized. Reappraisal and extreme levels of CF did not significantly predict hypothetical student-teacher relationships, although the relationship directionality changed as a function of CF when looking at the interaction term. Results are interpreted within the limited literature existing on teacher CF and teacher emotion regulation, with recommendations for further study on the linkages between these variables.

Keywords: Emotion regulation, professional quality of life, teacher-student relationships

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Chapter 1

Introduction

Background of the Problem

Calls for schools to utilize a trauma-informed care approach with students have increased due to at least three major, interwoven considerations: increasing recognition of the prevalence and effect of trauma on children; disparities in trauma exposure and influence; and the high cost of current school responses to trauma. According to the second National Survey of Children's Exposure to Violence (NatSCEV II) conducted in 2011, about three in five children (57.7%) experienced at least one exposure to physical assault, sexual victimization, maltreatment, property victimization, or witnessing violence in the year prior (Finkelhor, Turner, Shattuck, Hamby, & Kracke, 2015). The 2014 NatSCEV III indicated that 37.3% of youth had experienced a physical assault, 2% of girls had experienced sexual victimization, and 15.2% of children and youth had experienced maltreatment (Finkelhor, Turner, Shattuck, & Hamby, 2015). Exposure to trauma and subsequent emotional and health outcomes are disparate along group memberships, with children in urban, low-income, racial/ethnic minority communities experiencing higher rates of exposure to community violence, leading some to call trauma-informed schools a social justice imperative (Ridgard, Laracy, DuPaul, Shapiro, & Power, 2015). Improved academic and behavioral functioning for students will ultimately reduce cost-ineffective responses to trauma such as special or alternative education and discipline procedures (Blaustein, 2013). More broadly, prevention of and intervention in child maltreatment falls firmly within the realm of schools as a protective environment where youth can be provided with a structured day that

includes supervision by caring adults and exposure to prosocial peers (Hall, Runion, & Perkins, 2017).

Students affected by chronic trauma often struggle with their regulatory capacities, interpersonal skills, intrapersonal development, and cognitive development (Blaustein, 2013). For instance, maltreated students may experience lower grades and standardized test scores as well as increased absenteeism and special education placements (Panlilio, 2016). In response to these and other needs, three-quarters of mental health services delivered to children are through schools (Burns & Hoagwood, 2002). Many such services are related to student self-regulation, self-control, and/or self-management given the clear link between these constructs and academic functioning. According to a federal report series by the Administration for Children and Families (ACF) titled *Self-Regulation and Toxic Stress*, teachers and other school personnel are the most common agents of delivery for self-regulation intervention programs for preschool- through high-school-aged individuals. The ACF report series called for existing student interventions to be bolstered to address several key areas, including systematic and integrated teaching of cognitive and emotional regulation skills; increased focus on adolescents; co-regulation training for caregivers of youth of all ages; and increased support for caregivers' self-regulation (Murray, Rosanbalm, & Christopoulos, 2016).

Support for children from parents or other caregiving adults, including teachers and mentors, is provided through warm and responsive interactions, behavior management, and a growth-oriented climate; co-regulation occurs when “support, coaching, [and] modeling is provided to facilitate a child’s ability to understand, express, and modulate their thoughts, feelings, and behavior” (Murray, Rosanbalm, Christopoulos, & Hamoudi, 2015, p. 14).

Regardless of how constructs are labeled, ranging from *co-regulation* to *emotion socialization*, it is the proximal, microsocial aspects of these caring relationships that are thought to influence the development of children’s self-regulation (Lunkenheimer, Olson, Hollenstein, Sameroff, &

Winter, 2011). In addition to directly promoting the development of self-regulation skills, co-regulation serves to buffer against stressors in the environmental context that might disrupt a child's self-regulation (Murray et al., 2015).

To successfully co-regulate with children, caregivers need a foundation of self-regulatory skills for modeling and coaching. More specifically, caregivers need instruction and support for using self-regulation skills in their own lives to more effectively teach and support children (Murray et al., 2016). Per a scan of social and emotional learning (SEL) in teacher preparation certification requirements for the Collaborative for Academic, Social, and Emotional Learning (CASEL; Schonert-Reichl, Kitil, & Hanson-Peterson, 2017), there are only two states in the U.S. that include self-regulation as a competency for teachers compared to thirty-seven states that include this competency for students. Thus, although many states require teachers to understand students' self-regulation skills – an encouraging finding – next to none required teachers to have this same knowledge regarding their self-regulation (Schonert-Reichl et al., 2017). Teacher self-regulation is a key implementation driver of later student self-regulation intervention delivery (Jennings & Greenberg, 2009). For many teachers, achieving and maintaining this self-regulatory foundation is easier said than done when their profession involves high levels of stress and compassion fatigue. The emotional burden of working with students who have experienced trauma can be especially challenging for teachers (Alisic, 2012), sometimes rising to the level of secondary traumatic stress (STS).

Problem Statement

Little is known about the experience of compassion fatigue or STS in educators relative to its occurrence in mental health providers, child protection caseworkers, health professionals, and other adults whose professions put them on the front lines of working with trauma-affected

individuals. This is a critical issue given the amount of time that traumatized students spend in classrooms with adults who may not have training in social and emotional learning (SEL), let alone training in mental health. The experiences of educators interacting with students in both their emotion regulation processes and their co-regulation abilities require further study that is just now beginning. To better understand the context of teachers supporting students who have been affected by trauma, the current study aimed to examine relationships between teachers' temperamental traits, experiences, emotion regulation, professional quality of life, and hypothetical interactions with students.

Chapter 2

Literature Review

This review is presented in two main sections. First, an overview of emotional self-regulation and co-regulation is provided. Second, aspects of teachers' professional quality of life are explored. Within the section on professional quality of life, research on student-teacher relationships is discussed. This section concludes with a summary related to the questions and hypotheses that guide the current study.

Emotion Regulation

Self-regulation involves several overlapping domains, including cognitive, emotional, and behavioral self-regulation, with the integration of cognitive and emotional processes necessary as a foundation for optimal functioning (Murray et al., 2015). Across these domains, some processes and skills influence a person's self-regulation, as well as factors influencing how well a person can self-regulate in a given context. Regulation performance depends upon the interrelated factors of biology, genetics, and temperament; self-regulation skills; intrinsic and extrinsic motivation; caregiver support; and environmental context (Murray et al., 2015).

Definitions of the construct of self-regulation have been inconsistent across researchers. For this study, the domain of emotional self-regulation “involves actively managing strong and unpleasant feelings and results in adaptive functioning in emotionally arousing situations. It requires awareness and understanding of feelings and involves self-calming strategies and tolerance or management of internal distress” (Murray et al., 2015, p. 6). In first developing the process model of emotion regulation, Gross (1998) distinguished between antecedent-focused and

response-focused emotion regulation strategies. Antecedent-focused emotion regulation includes the following strategies, all of which have the purpose of modifying the emotional influence: *situation selection*, where stimuli are approached or avoided; *situation modification*, where the situation is changed; *attention deployment*, where stimuli are attended to or ignored; and *cognitive change*, where appraisals of a situation are altered. In contrast, response-focused emotion regulation (e.g., *expressive suppression*) occurs after the experience of an emotion and involves modifying the physiological, experiential, or behavioral response. In a more recent iteration of the process model of evaluation, Gross (2015) identified three processes across one instance of regulating an emotion: *identification*, regarding whether to regulate emotion; *selection*, regarding what strategy to use to regulate emotion; and *implementation*, regarding the enacting of a particular tactic suited to the present situation. Within each process, there are sub-steps requiring perception, evaluation, and action (Figure 2-1).

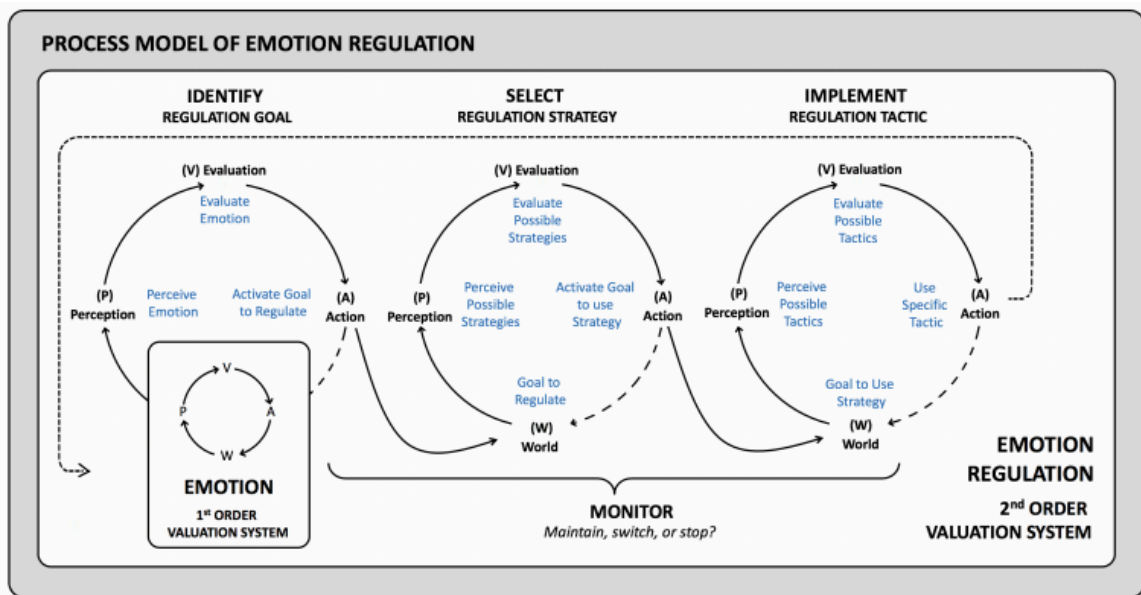


Figure 2-1: The process model of emotion regulation (Gross, 2015, 2019).

Many researchers have examined the outcomes of utilizing different emotion regulation strategies. An early study by Gross (1998) compared a form of antecedent-focused emotion regulation (cognitive reappraisal) to a form of response-focused emotion regulation (expressive suppression) in response to watching a disgusting film and found that reappraisal decreased the experience of disgust, while suppression increased the body's sympathetic activation. Later studies have further supported that reappraisal is likely a healthier bodily response than suppression; see John and Gross (2004) for a full review of healthy and unhealthy emotion regulation. Thus, although most discussions of emotion regulation acknowledge individual and contextual factors in emotion regulation strategy selection, practical suggestions about managing emotions typically endorse an active and antecedent-focused approach.

Emotional co-regulation for trauma-affected students

As with other skills, the teaching of emotion regulation strategies involves modeling of the behavior by a competent instructor. Co-regulation occurs when “support, coaching, [and] modeling is provided to facilitate a child’s ability to understand, express, and modulate their thoughts, feelings, and behavior” (Murray et al., 2015, p. 14). Co-regulation constructs have been studied most often in the context of parent-child relationships. Emotional co-regulation has been particularly well-studied in a developmental context as *emotion-related socializing behaviors* (ERSBs) by Eisenberg and colleagues, who described four ways that parents socialize their children’s emotions: reactions to children's emotions; discussion of emotion; expression of emotion; and selection or modification of the environment (Eisenberg, Cumberland, & Spinrad, 1998). Compared to the literature on parent ERSBs, research on teachers as socializers of emotional competence is limited; hypothesized differences between parents and teachers include teachers’ relatively reduced permanence of influence on students’ emotions as well as the reduced

strength of the effect from ERSBs given classroom demands of distributed teacher attention and the teacher's instructional role (Denham, Bassett, & Zinsser, 2012).

While people of all ages and circumstances can be supported through co-regulation in their skills in understanding, expressing, and managing their feelings (Murray et al., 2015), it is especially important to assist with emotional arousal when development of self-regulation has been disrupted due to circumstances such as complex trauma, that tends to occur by caretakers in the early years. Research on maltreating parents' lack of co-regulation and outcomes for their children is summarized by Kim and Cicchetti (2010), who note that caregivers of maltreated children are often less available to structure, explain, and regulate children's emotions. Specifically, parents who are physically abusive lack impulse control in response to stress, and neglectful parents are socially isolated, demonstrate lower empathy, lack impulse control, and lack verbal accessibility (Kim & Cicchetti 2010).

The onset of maltreatment in infancy or toddlerhood is predictive of emotion dysregulation and peer rejection (Kim & Cicchetti, 2010). Emotional regulation suffers for maltreated children in terms of identifying and modulating emotions, which later affects internalizing symptoms, social adjustment, and reactive aggression (Schatz, Smith, Borkowski, Whitman, & Keogh 2008). Latent class analysis and latent transition analysis of the emotion regulation and dysregulation of young children who had been maltreated demonstrated both stability of severely dysregulated behaviors and change of emotion regulation, especially in times of transition (e.g., home placement instability or entering school); the emotionally dysregulated children were found to be at increased risk for poor academic outcomes (Panlilio, Harden, & Harring, 2018). Thus, when co-regulatory needs are not met, the consequences for children can be drastic. There is evidence to support the malleability of trajectories for children's socioemotional development and self-regulation (Kagan, Moore, & Bredekamp, 1995; Murray et al., 2016). Especially in cases where parents or guardians are not appropriately socializing their

children's emotions, the importance of school personnel teaching students to identify, express, and manage feelings cannot be understated, beginning with a child's first school experience.

Focus of teacher co-regulation

For educators of young children, Gillespie (2015) provides the following tips for co-regulation: create trusting caretaking relationships; provide care that is responsive, consistent, and nurturing; allow exploration and a safe haven for return; and model self-regulatory skills. While these co-regulatory tips would be expected to promote positive outcomes across settings, they are especially important for an early childhood setting like preschool because such settings may be the first where a child is placed in a larger group, in which adult attention is more divided and it becomes less feasible to meet all individual sensory and interpersonal needs. The ability for early childhood educators to respond promptly and with care to children when they are having difficulty regulating themselves is more challenging in the group setting, particularly when childcare settings are more chaotic (Jeon, Hur, & Buettner, 2016), but remains critical as a supportive backdrop to facilitate the child's ability to wait and self-soothe (Gillespie, 2015). Preschool students experiencing emotional dysregulation should receive intervention given the relative opportunity for change in emotion regulation outcomes at this time of transition (Panlilio et al., 2018).

Given that co-regulation occurs within the context of a trusting relationship, it is relevant to consider research on student-teacher relationships. Preschool-age teachers must consider attachment and a child's understanding of cause-and-effect, which can be impeded by unpredictable or chaotic home environments (Wiebler, 2013). Student-teacher closeness is typical at the elementary level, but with changes in school structure at the secondary level, the emotional bonds between students and teachers lessen, and emotional understanding in teaching

begins to be seen as an interruption rather than a tool (Hargreaves, 2000). Co-regulation for adolescents and young adults may focus on de-escalation, modeling self-constraint, warm and soothing relationships, acknowledgment of distress, and cooperative problem solving (Bath, 2008). Unfortunately, as a student dealing with traumatic stress and deficits in self-regulation progresses from elementary through secondary age, their challenging behavior is more likely to elicit discipline-oriented responses. Secondary schools tend towards higher expectations for regulated behavior and lower tolerance for "survival skills" that may result from complex trauma (e.g., scanning constantly or giving up to avoid failure; Wiebler, 2013).

Teacher emotion regulation as a foundation for co-regulation

Interpersonal relationships with students and classroom management are significant predictors of teachers' emotions in the classroom. More specifically, student-teacher relationships include both interpersonal and professional dimensions (e.g., Hagenauer, Hascher, & Volet, 2015). The interpersonal or affective dimension has been conceptualized as "closeness," which reflects the affiliation between teacher and student (e.g., warmth, trust, affection, and openness) and "conflict," reflecting struggles and negative perceptions (Pianta, 2001). Interpersonal aspects of teacher-student relationships frequently evoke emotions in teachers (Hargreaves, 2000) of both positive valences (e.g., joy, excitement, warmth, and affection) and negative valences (e.g., anger, frustration, and anxiety; Jiang, Vauras, Volet, & Wang, 2016). Regarding teacher-student conflict, teachers' difficulty with emotion regulation and their antecedent appraisals in the face of difficult student behavior has been proposed as contributing to teacher burnout (Chang, 2009). For example, when disruptive classroom events occur, unpleasant emotions (i.e., anger and frustration) can lead to burnout for teachers who are unable to regulate their emotions (Durr, Chang, & Carson, 2014).

Teachers recognize the importance of their emotion regulation and are motivated to practice in the classroom due to outcome expectancies including more effective management, discipline, and positive student-teacher relationships (Sutton, Mudrey-Camino, & Knight, 2009). However, teachers are less confident about their ability to reduce negative emotions, and teacher preparation programs tend to provide little guidance on emotion regulation or classroom management; thus, teachers are left to find and attempt their own strategies, some of which are supported by theory (e.g., cognitive reappraisal) while others are less supported and may lead to negative health outcomes (e.g., expressive suppression; Sutton et al., 2009). Out of five emotion regulation strategies surveyed in a sample of Croatian teachers, the most highly utilized strategy was active modification, followed closely by reappraisal, then avoiding the situation, suppression, and tension reduction (Burić, Penezić, & Sorić, 2017). In contrast, although there were differences according to the situation, Taxer and James (2018) found that a sample of American teachers most frequently cited suppression as an emotion regulation strategy. Swartz and McElwain (2012) studied the emotion regulation of preservice teachers in a preschool setting and its associations with how teachers responded to children's emotions. The authors hypothesized that teachers utilizing reappraisal would respond more supportively, whereas teachers who tended to suppress their emotions would be less supportive. Swartz and McElwain expected these patterns to occur due to the emotional and cognitive resources available for the teacher, and for these patterns to result in mirrored co-regulation strategies with the child. Both expected outcomes were found, along with an interactive effect from accepting beliefs about children's emotions.

The selection of emotional regulation strategies is related to teachers' beliefs about emotional display rules in the classroom, though this relationship may be implicit (Durr et al., 2014). In a study of teacher emotion regulation strategies distinguishing between surface acting (enhancing or suppressing the expression of emotions) and deep acting (attempting to experience

emotion through redirection or cognitive reappraisal), surface acting positively predicted emotional exhaustion and negatively predicted personal accomplishment. Deep acting was positively related to personal accomplishment with positive emotions, but not with negative emotions (Barber, Grawitch, Carson, & Tsouloupas, 2011). The authors note that training teachers to reduce surface acting of positive emotional expression (e.g., “faking happy”) may not be enough; “training teachers to manage appropriate negative emotional expression, especially transitioning to and from a disciplinary role, should also be included as part of their professional development” (p. e184).

Thus, research on teachers' emotions in the classroom indicates a breadth of feelings that occur in response to student behaviors as students attain or do not attain classroom goals, with student engagement and student-teacher relationships important to the valence and intensity of teacher emotions (Hagenauer et al., 2015). The research to date primarily focuses on up-regulating positive emotions and down-regulating negative emotions (Sutton et al., 2009), despite findings that expressive suppression and surface acting with either positive or negative emotions may impair teachers' overall health and well-being.

Teacher Professional Quality of Life

Thus far, teacher beliefs about emotional display rules, relationships with students, and classroom management have all been cited as important to teacher emotion regulation. Daily, these and other factors contribute to a teacher's quality of life, including potential positive, negative, and traumatic reactions, respectively termed *compassion satisfaction*, *compassion fatigue*, and *secondary traumatic stress*. In educational literature, these constructs are often measured by the Professional Quality of Life Scale (ProQOL; Stamm, 2010), which replaces the

earlier Compassion Satisfaction and Fatigue Test (Figley, 1995). Each construct is described in turn and their relationships are illustrated in Figure 2-2.

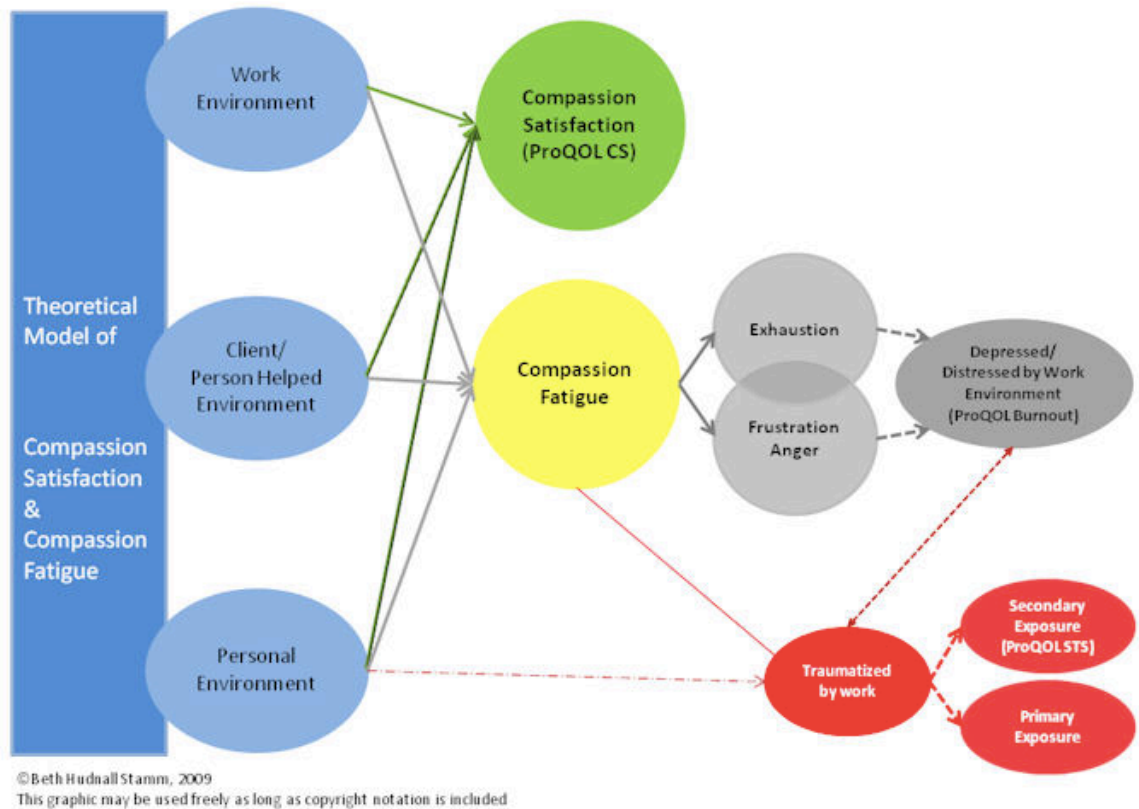


Figure 2-2: Model of CS-CF theory (Stamm, 2009).

Compassion satisfaction

Compassion satisfaction (CS) aims to capture the pleasure derived from being able to do work well, help others through work, and contribute to the work setting or society (Stamm, 2010, p. 12). Similar to the constructs of *meaningful work* (Brunzell, Stokes, & Waters, 2018), *trauma stewardship* (van Dernoot Lipsky, 2009), or *vicarious posttraumatic growth* (Arnold, Calhoun, Tedeschi, & Cann, 2005), CS can serve as a protective factor against the negative aspects of working in a helping profession. For example, Mäirean (2016) reviewed that healthcare workers

who had resources for coping had higher CS, and this, in turn, could prevent secondary trauma reactions. The author hypothesized and found that CS moderated the relationship between emotion regulation and STS, specifically between expressive suppression and intrusions. People who suppressed their emotions experienced similar amounts of intrusion across all levels of CS, but for people with a low tendency to suppress their emotions, fewer intrusions were experienced with higher levels of CS.

The person-environment, client environment, and work environment are all conceptualized to affect CS (Figure 2-2; Stamm, 2010). CS has been found to correlate with several variables, including but not limited to age, education, years in the field, personal trauma history, prior trauma training, mindfulness, and perceptions of the working environment. In a sample of UK therapists working with adult clients, four variables were significant, positive predictors of CS and accounted for 22.6% of the variance: older therapists, those who spent more time on other work duties (i.e., research and development rather than therapy), those who perceived more support from management, and those who perceived supervisory support had higher potential for CS (Sodeke-Gregson, Holtum, & Billings, 2013). There is little research on CS in teachers. In a sample of teachers working in high-poverty urban public schools, Abraham-Cook (2012) found that age and experience were significantly positively correlated with CS while time management, work stress, discipline and motivation, professional investment, and professional distress were significantly negatively correlated with CS.

Compassion fatigue/secondary traumatic stress

Compassion fatigue refers to the negative aspects of helping, which as described by Stamm (2010), includes two parts: burnout (i.e., exhaustion, frustration, anger and depression) and secondary traumatic stress. Stamm also notes that primary or direct trauma exposure can also

occur at work for those in helping professions. In many studies using the ProQOL measure, the terms *compassion fatigue (CF)* and *secondary traumatic stress (STS)* are used interchangeably to represent results from the ProQOL's STS subscale. STS presents as “the natural and consequent behaviors and emotions resulting from knowing about a traumatizing event experienced by a significant other—the stress resulting from helping or wanting to help a traumatized or suffering person” (Figley, 1995, p. 7). Although this concept was defined almost a quarter of a century ago and has been well-studied within populations of health and mental health workers, it did not gain national attention within the education realm until the last decade; see Hydon, Wong, Langley, Stein, and Kataoka (2015) for a description of the focus on educator CF/STS within the aftermath of Hurricane Katrina. Although conceptualized as synonymous, within the current study, STS is thought of as falling within the larger construct of CF but with distinct features. Further, although related to *vicarious trauma* in that they both result from exposure to others' trauma reactions, STS is distinguished by its primarily outward symptoms (e.g., intrusive imagery, avoidance of reminders and cues, hyperarousal, distressing emotions, and functional impairment) that can align with the symptoms of Post-Traumatic Stress Disorder (PTSD; Newell & MacNeil, 2010) whereas vicarious trauma often involves changes to cognition and beliefs. *Burnout* can result in similar effects but has an etiology in chronic work stress rather than traumatic exposure. To illustrate STS, one can imagine a teacher who experiences symptoms such as recurring thoughts, heightened emotions, hyperarousal, and sleeplessness after making a mandated report of child abuse (VanBergeijk & Sarmiento, 2006).

Qualitatively, teachers who provide emotional support to trauma-affected students indicate that they have difficulty with taking problems home and triggering memories of earlier personal experiences (Alisic, 2012). Teachers have reported indicators of STS as a result of teaching traumatized students including distressing emotions, intrusive imagery, numbing, somatic complaints, addictive or compulsive behaviors, physiological arousal, and impairment of

day-to-day functioning (Hill, 2011). In a sample of 300 school staff members with varied positions (i.e., educators, paraeducators, school social workers, school counselors, and administrators), Borntrager and colleagues (2012) found a high degree of STS despite approximately average burnout and CS. The sample was noteworthy for including 20% Native American participants. Three-quarters of the sample experienced high levels of intrusion, avoidance, and arousal as measured by the Secondary Traumatic Stress Scale (STSS) and overall STS measured by the ProQOL-IV. In Borntrager et al.'s study, STS levels of public school personnel were comparable to those found for mental health workers. Similarly, in a varied sample of Canadian educators, approximately 70% of respondents had experienced secondary trauma and 43% experienced moderate to severe CF (Koenig, Rodger, & Specht, 2018).

Predictors of secondary traumatic stress

Broadly, both organizational and individual factors have been studied concerning STS, primarily with populations of mental health providers or caseworkers. A research synthesis by Baird and Kracen (2006) delineated that the amount of exposure to trauma material has persuasive evidence for its link to STS, while personal trauma history has reasonable evidence as a contributor to the development of STS. A meta-analysis by Hensel, Ruiz, Finney, and Dewa (2015) examined risk factors for STS in therapeutic work with trauma-affected clients. They examined seventeen risk factors; of those, trauma caseload volume, caseload frequency, caseload ratio, and having a personal trauma history each had small significant effect sizes. Work support and social support were found to have small negative effect sizes. Gender was noted to need more research as a risk factor while considering trauma history. Specific to teachers, Caringi, Stanick, Trautman, Crosby, Devlin, and Adams (2015) emphasized the effect of the student

trauma on teachers' stress levels, and the experiences of lack of supervision and large class sizes as influential on stress management.

Personal trauma history associations with STS are typically positive but range in strength and significance (Hensel et al., 2015; Sodeke-Gregson et al., 2013). In the school sample surveyed by Borntrager and colleagues (2012), personal trauma history was not significantly correlated with STS. In one qualitative study, a few teachers' reports about providing support to students after trauma referred to their trauma history, a connection that resulted in teachers either feeling overwhelmed and less helpful or more motivated and proactive in their support provision (Alisic, 2012). Another teacher's qualitative report explained that although they experienced trauma growing up, it did not help prepare them to work with the specific situations faced by their students (Caringi, Stanick, Trautman, Crosby, Devlin, & Adams, 2015).

Present Study

The need for effective co-regulation between teachers and trauma-affected youth is clear and considered to be essential for both members of the relationship. It was previously stated that the ability to regulate oneself in the moment depends on biological and temperamental factors, self-regulation skills, motivation, external support, and environmental context (Murray et al., 2015). Many of these facets are being targeted through the trauma-informed schooling movement with instruction for students. Less emphasized is that teachers' social and emotional competence and close, warm relationships with students are mechanisms that can drive outcomes for students, as illustrated by the model from Jennings and Greenberg (2009) in Figure 2-3. There has been less empirical study on the factors affecting emotion regulation skills for teachers, such as temperament, utilization of specific emotion regulation strategies, and professional quality of life.

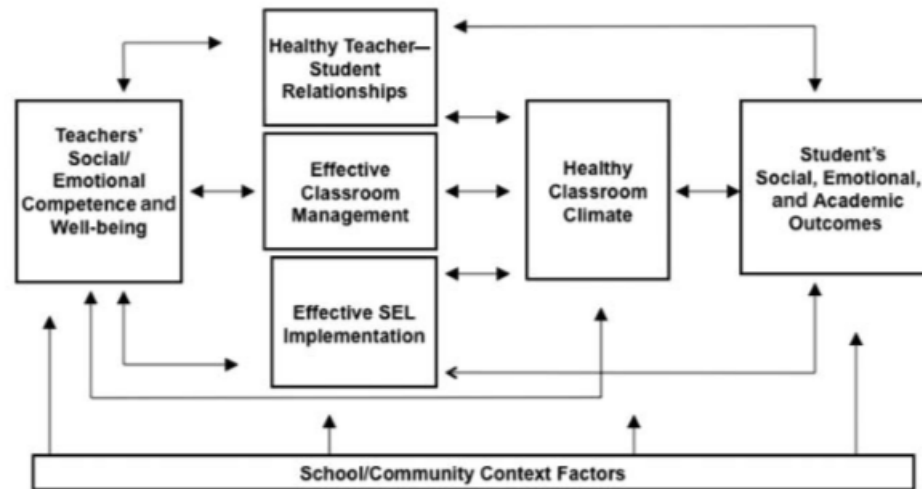


Figure 2-3: Model of the prosocial classroom (Jennings & Greenberg, 2009).

To better understand how to support teachers in their self-regulation and co-regulation of trauma-affected students, several research aims were explored. The direction and magnitudes of correlations for the following variables were examined: teachers' temperament, childhood traumatic events (number and impact), age, experience working with children, prior trauma training, use of regulatory strategies (i.e., avoidance, active modification, reappraisal, suppression, and tension reduction), responses to students, co-regulation beliefs, closeness and conflict in relationships with students, and professional quality of life. Given the exploratory nature of the study, variables with significant correlations to the outcomes of interest were considered for inclusion in regression models, with special focus on considering how CS and CF may serve as protective and risk factors, respectively. The major outcomes of interest were emotionally punitive responses to a hypothetical student in the classroom, CF, and student-teacher relationships – all factors influencing the daily climate of a typical classroom. Each research question aimed to inform practical recommendations about teacher emotion regulation in the classroom and influences of professional quality of life. The overarching goal was to provide evidence for the importance of these constructs to teachers and students alike, especially trauma-

affected students affected for whom unsupportive classroom environments can be particularly detrimental (Blaustein, 2013).

Four primary research aims guided the current study. The first aim was to understand the associations among the study variables, including the degree and direction to which they are correlated. Although correlations with the major outcomes of interest have been studied before, there are few published accounts of these associations for samples of teachers. CS and CF were expected to negatively correlate with each other. Teachers' trauma history variables have had mixed results in correlating with CF (e.g., Abraham-Cook, 2012; Borntrager, 2012), and it was of interest whether the number of events compared to event impact had a higher degree of association with CF. Generally, active emotion regulation strategies (i.e., reappraisal and modification) were expected to correlate with positive outcomes such as supportive responses, student-teacher closeness, and CS while avoidance and suppression should correlate with negative outcomes like punitive responses, student-teacher conflict, and CF. The second aim was to examine the degree to which suppression and other related variables predict emotionally punitive responses to a hypothetical student in the teachers' classroom. Suppression was hypothesized to be a significant predictor of punitive responses based on findings from Swartz and McElwain (2012). The third aim was to determine whether CS moderated the relationship between suppression and CF. Măirean (2016) found that CS moderated the relationship between expressive suppression and intrusions, a symptom of STS. Therefore, CS was hypothesized to potentially serve a moderating role between suppression and CF, recognizing that CF is a broader construct than the specific symptom of intrusions. The fourth aim investigated the degree to which teachers' emotion regulation and professional quality of life predict more positive relationships with a hypothetical student in their classroom. It was hypothesized that CF would hinder relationships, while reappraisal would support relationship quality. The interaction between these two variables was also explored.

Chapter 3

Method

The following section describes the study design, participant sample and recruitment methods, module development, measures, and analysis plan. All procedures were approved by the Institutional Review Board at the Pennsylvania State University (see Appendix H).

Study Design and Procedure

The data used in the current analyses were collected from a larger sample of teachers and other school personnel who completed training created by the researcher; sampling was non-random. Although all participants in the training completed the measures, they were given the option to opt-out of being included in the research sample before or following the training. Participants completed pre-training measures, module-specific tests for each of the training modules, and a post-training measure. The pre-training measures serve as a cross-sectional survey to answer the research questions posed in the current study. Measures were completed online via Qualtrics. All measures were utilized in the format prescribed by their authors, except for a scale on student-teacher relationships; respondents were asked to imagine that a child described in the second vignette from a prior measure, reproduced on their screen, was a student in their classroom. To the researcher's knowledge, the measure (STRS-SF) has not been used with vignettes before in published research.

Participants

Participants were recruited in the state of Pennsylvania via personal outreach by the researcher and those familiar with the research study. Two separate groups completed the larger training and survey measures: a group of Emotional Support teachers and a group of Head Start teachers, with some administrators and student support personnel (e.g., school psychologists) in each group. Only the Head Start teachers and teacher assistants are included for further analysis; demographic information for this subsample is provided in Table 3-1.

Table 3-1: Head Start teacher and teacher assistant demographics.

	<i>N</i>	Range	<i>M</i>	<i>SD</i>
Age	51	42	38.08	11.64
Teaching experience	40	31	10.90	9.16
			Frequency	Percentage
Ethnicity	Asian-American		2	3.9
	Black or African American		8	15.7
	Hispanic or Latina		10	19.6
	Native Hawaiian or Pacific Islander		1	2.0
	White or Caucasian		30	58.8
Gender	Female		51	100
Degree attained	High school		6	11.8
	Some college		9	17.6
	Associate degree		9	17.6
	Bachelor's degree		23	45.1
Income	Master's degree		4	7.8
	\$0 to \$49,999		37	72.6
	\$50,000 to \$99,999		10	19.6
	\$100,000 to \$149,999		1	2.0
Prior trauma PD	\$150,000 or more		1	2.0
	Yes		23	45.1
	No		28	54.9

Note. Listwise $n = 51$. PD = professional development

Measures

Teacher demographics

A demographic form was administered to collect participant age, race/ethnicity, gender, and socioeconomic status (SES). Participants were also asked about their education, including major of study, and prior experience working with children (amount of time engaged in informal experience as well as formal experience). If participants had formal experience as a teacher, they were asked to indicate the grade most recently taught. See Appendix A for the demographic questions.

Your Temperament Assessment Scale

The Your Temperament Assessment Scale (The Program for Infant/Toddler Care, 1995) was used to assess respondent temperament. This scale was designed for adults and measures nine facets of temperament: activity level, biological rhythms, adaptability, approach/withdrawal, sensitivity, the intensity of reaction, distractibility, quality of mood, and persistence. Responses were provided on bipolar Likert scales (e.g., from *active* to *quiet* on a 5-point scale). This scale is typically used during professional development and does not have any published psychometric properties; the items are reproduced in Appendix B.

Childhood Traumatic Events Scale

Prior traumatic experiences were examined using the Childhood Traumatic Events Scale (CTES; Pennebaker & Susman, 1988), which is a brief survey of six early traumatic experiences: death, divorce, violence, sexual abuse, illness, or other major upheavals. Participants respond

whether or not they experienced a particular event before the age of 17, with any endorsement of experience followed by three questions asking the participant's age at which the event occurred, the degree to which the trauma was upsetting, and the degree to which individuals confided the traumas to others. The latter two questions were rated on 7-point Likert scales, from 1 (*not at all traumatic*) to 7 (*extremely traumatic*) and 1 (*not at all*) to 7 (*a great deal*), respectively.

According to the author's website, no psychometric information is available for the questionnaire and it relies on face validity. However, concurrent validity findings from Scheller-Gilkey, Moynes, Cooper, Kant, and Miller (2004) demonstrate a medium correlation between scores of frequency and severity of early trauma on the CTES and frequency and severity of PTSD. Slightly lower but significant correlations were found between the severity of early trauma on the CTES and ten or more days of current alcohol use. Scoring is up to the discretion of the user, as is the wording of any item. CTES items can be found in Appendix C.

Teacher Emotion-Regulation Scale

The Teacher Emotion-Regulation Scale (TERS; Burić, Penezić, & Sorić, 2017) was administered as a measure of emotion regulation strategies of unpleasant emotions while in the teachers' workplace. This measure has been used with middle-school teachers in Croatia, in the Croatian language. Based on an initial study of Croatian teacher emotions and emotion regulation theory, as well as an EFA and CFA, the TERS includes five strategies across 40 items: avoiding the situation (e.g., "I avoid engaging in discussions with problematic parents"), active modification strategy (e.g., "I question my teaching methods when I feel helpless because of a certain student"), reappraisal (e.g., "If I get furious at students' behavior, I remind myself that these are just kids"), suppression (e.g., "I ignore the anger I feel while at work"), and tension reduction (e.g., "When I get upset at school, first I take a deep breath"). For each item, teachers

indicated the degree of agreement using a 5-point scale ranging from 1 (*strongly disagree*) to 5 (*strongly agree*). The TERS scales' internal consistency coefficients were above .80. Criterion validity was established based on theoretical relationships with teacher gender, years of working experience in education, teachers' emotions experienced about their students, teachers' self-efficacy, job satisfaction, and well-being (Burić, Penezić, & Sorić, 2017). See Appendix D for the TERS items.

Teacher Response Survey

Child behavior vignettes by Gottesman (2016) were used to collect participants' responses to, beliefs about, and responsibility for students. Participants were asked to read two short scenarios depicting children with emotion regulation difficulties. The vignettes and questions were created by Gottesman based on previous emotion regulation literature and were pilot-tested with a sample of ten doctoral students studying educational and school psychology. Although the vignettes did not specifically mention trauma as a cause for the emotion regulation difficulties of the students, the current sample likely assumed a connection based on the topic of the training they were attending. The text of each vignette and items from Gottesman's Teacher Response Survey (TRS) is reproduced in Appendix E. Following each vignette, teachers reported their probable responses (choosing between emotionally supporting, punitive, or neutral strategies), beliefs about the effect of their responses, and feelings of responsibility for helping the student. A sample supportive response is “providing individual instruction to Child A regarding how to control emotions,” whereas a punitive response may be “telling Child A that I will call his/her parents.”

Student-Teacher Relationship Scale – Short Form

Participants were asked to complete the Student-Teacher Relationship Scale – Short Form (STRS-SF; Pianta, 1992) in response to the second TRS vignette depicting a disruptive student. The STRS-SF is a 15-item teacher-report instrument that measures conflict (discordant interactions, lack of rapport) and closeness (warmth and openness) in the student-teacher relationship. A good relationship using this scale is defined as a relationship with low conflict and high closeness. Responses are given on a 5-point Likert-scale format ranging from 1 (*definitely does not apply*) to 5 (*definitely applies*), with one item reverse-coded, resulting in a possible score range of 8 to 40 for closeness and 7 to 35 for conflict. A total score was also calculated by summing the closeness items and the inverse of the conflict items, for a possible score range of 15 to 75, as previously done by Patrício, Barata, Calheiros, and Graça (2015). Items from the STRS-SF can be found in Appendix F.

Most studies of the STRS in American samples have used the full form. Psychometric properties for the short form have been validated in Norwegian and Greek populations, and it has been argued that the short-form may be more robust across cultures than the long-form given that there are mixed results for the dependency subscale in the full form (Patrício et al., 2015). In one study of American fourth- to sixth-grade students using the STRS-SF, Cronbach's alphas were $\alpha = .88$ to $.89$ for the conflict subscale and $\alpha = .84$ to $.86$ for the closeness subscale (Rudasill, Reio, Stipanovic, & Taylor, 2010).

Professional Quality of Life

The fifth version of the Professional Quality of Life Scale (ProQOL-5; Stamm, 2009) measures compassion satisfaction (CS) and compassion fatigue (CF) for those in helping

professions. The CF aspect includes subscales for burnout and secondary trauma (STS). There are 30 items scored on a 5-point scale ranging from 1 (*never*) to 5 (*very often*). The CS subscale is about the pleasure derived from doing one's work well, with higher scores representing greater satisfaction related to the ability to be an effective caregiver. The burnout subscale is associated with feelings of hopelessness and difficulties in dealing with work or in doing a job effectively, with higher scores indicating a higher risk for burnout. The STS subscale is about work-related, secondary exposure to extremely or traumatically stressful events. To make the measure read more smoothly for the current target group, the word “helper” was replaced with “teacher” per instructions from the scale website. See Appendix G. Although the ProQOL-5 was administered to participants in the current study, it was rescored using syntax from Heritage, Rees, and Hegney (2018) to create the ProQOL-21. Therefore, CS and CF scores are reported rather than CS, BO, and STS. With a sample of nurses, Heritage and colleagues found Cronbach $\alpha = .90$ for both the recalibrated CS and CF scales on the ProQOL-21.

Plan of Analyses

All statistical analyses were performed using SPSS, Version 25. Analyses addressed specific research aims as described below.

Research question 1. To what degree are teachers’ temperament, childhood traumatic events (number and impact), age, experience working with children, prior trauma training, regulatory strategies (i.e., avoidance, active modification, reappraisal, suppression, and tension reduction), responses to students, co-regulation beliefs, relationships with students, and professional quality of life related?

Data analysis. A bivariate Pearson correlation table was produced.

Research question 2. To what degree do working experience, suppression, and CS predict emotionally punitive responses to a hypothetical student in the classroom?

Data analysis. A linear regression analysis was utilized to examine predictors of emotionally punitive responses, including total working experience, suppression, and CS as predictors.

Research question 3. Does CS moderate the relationship between suppression and CF?

Data analysis. A linear regression analysis was used to examine whether suppression is moderated by CS to predict CF.

Research question 4. To what degree do teachers' emotion regulation strategies predict more positive relationships with a hypothetical student?

Data analysis. Regression analysis was utilized to examine predictors of positive student-teacher relationships, including CF and reappraisal entered in the first step and their interaction entered in the second step.

Chapter 4

Results

Descriptive statistics are provided first, followed by results according to each research question.

Temperament

On average, the current sample rated themselves to be quick to adapt and positive in their mood. Participants saw themselves as typically active, regular (in eating, sleeping, and elimination habits), persistent in continuing with difficult tasks, and outgoing in their initial approach to their first time with a task or person. Respondents were closer to the mid-range in rating their physical sensitivity (to noise level, temperature, or touch), the intensity of reactions, and distractibility. See Table 4-1.

Table 4-1: Means of dimensions of temperament.

	<i>M</i>	<i>SD</i>
Adaptability	4.28	1.01
Positive Mood	4.26	0.72
Regularity	3.94	1.08
Activity Level	3.82	1.04
Persistence	3.68	0.84
Approach	3.50	1.03
Physical Sensitivity	2.92	1.24
Intensity of Reaction	2.80	0.99
Distractibility	2.76	1.13

Note. Listwise $n = 50$.

Childhood Traumatic History

Participants were asked about the experience of five traumatic events before the age of 17 (death of a very close friend or family member; major upheaval between parents; traumatic sexual experience; the victim of violence; extremely ill or injured), as well as an open-ended option. Of the 50 respondents, 34% denied any traumatic experiences. Another 24% had experienced one event and 26% experienced two events. The remaining 16% experienced between three and six events (6%, 6%, 2%, and 2% respectively). The mean number of events for the sample was 1.4, with a standard deviation of 1.44. Among the open-ended traumatic experiences, participants reported being affected by events that happened to themselves or family members, including but not limited to unplanned or terminated pregnancies, bullying, frequent relocation, and familial mental illness.

Participants also rated how traumatic they found the events to be on a scale from 1 (*not at all traumatic*) to 7 (*extremely traumatic*). Based on responses from the 33 participants who endorsed at least one traumatic event, the mean impact was 4.97 (SD = 1.18), meaning all events had at least some impact on the respondent and most fell within a moderate range of impact in terms of traumatic experiences. When summed per respondent across their endorsed events, the mean total impact was 10.7 (SD = 7.36). This sample's ACE scores were roughly equivalent to data from the behavioral risk factor surveillance system from 2011 to 2014 (Merrick, Ford, Ports, & Guinn, 2018), indicating that the sample is comparable to a national average in terms of childhood trauma exposure.

Emotion Regulation

Because the TERS was recently developed, descriptive statistics for each item are provided in Table 4-2 to compare to the original results from Burić and colleagues (2017), which sampled a large number of Croatian middle-school teachers.

Table 4-2: Descriptive statistics of TERS items.

Subscale	Item No.	<i>M</i>	<i>SD</i>	Skewness (SE)	Kurtosis (SE)
Avoiding the situation	Item 1	4.12	.90	-1.31 (.34)	2.24 (.67)
	Item 2	3.27	.99	-.04 (.34)	-.68 (.67)
	Item 3	3.41	1.17	-.22 (.34)	-.98 (.67)
	Item 4	3.44	1.01	-.34 (.34)	-.59 (.67)
	Item 5	2.92	1.13	.17 (.34)	-.92 (.67)
Active modification strategy	Item 1	4.33	.55	-.02 (.34)	-.65 (.67)
	Item 2	3.67	1.00	-.69 (.34)	-.07 (.67)
	Item 3	4.42	.50	.35 (.34)	-1.96 (.67)
	Item 4	4.44	.54	-.16 (.34)	-1.13 (.67)
	Item 5	4.19	.74	-.99 (.35)	1.64 (.68)
Reappraisal	Item 1	3.88	.81	-.25 (.34)	-.47 (.67)
	Item 2	4.00	.82	-.47 (.34)	-.28 (.67)
	Item 3	4.34	.60	-.29 (.35)	-.60 (.68)
	Item 4	4.29	.71	-.50 (.34)	-.87 (.67)
	Item 5	3.96	.87	-.71 (.34)	.11 (.67)
Suppression	Item 1	3.25	1.08	-.10 (.34)	-.74 (.67)
	Item 2	3.19	1.14	-.12 (.34)	-.87 (.67)
	Item 3	3.17	1.06	-.46 (.34)	-.40 (.67)
	Item 4	3.06	.95	-.13 (.34)	-.54 (.67)
	Item 5	2.94	.95	.43 (.34)	-.45 (.67)
Tension reduction	Item 1	4.10	.83	-1.36 (.34)	3.36 (.67)
	Item 2	3.21	1.16	-.35 (.35)	-.80 (.68)
	Item 3	4.00	.77	-1.16 (.34)	3.61 (.67)
	Item 4	3.16	1.09	-.32 (.35)	-.37 (.69)
	Item 5	3.71	1.01	-.75 (.35)	.633 (.69)

Note. Listwise $n = 42$.

The current sample indicated high levels of emotion regulation strategy use, particularly with proactive and healthy approaches to regulating emotions. Specifically, active modification ($M = 4.20$) and reappraisal ($M = 4.09$) were the most utilized on average. Respondents utilized tension reduction ($M = 3.65$) at a notably higher rate compared to teachers in the original development sample ($M = 2.63$; Burić, Penezić, & Sorić, 2017). Situation avoidance and

suppression were used relatively less often but were still above the scale midpoint ($M = 3.43$ and $M = 3.12$, respectively). See Table 4-3 for a summary of TERS results by strategy.

Table 4-3: Emotion regulation findings from the TERS.

	<i>M</i>	<i>SD</i>
Active modification	4.20	0.36
Reappraisal	4.09	0.57
Tension reduction	3.65	0.74
Avoiding the situation	3.43	0.74
Suppression	3.12	0.85

Note. Listwise $n = 48$.

Compassion Satisfaction and Compassion Fatigue

Given the concerns related to the measurement of STS, multiple indices from the original ProQOL-5 data were calculated. First, the original scoring of the ProQOL-5 was used to calculate overall measures of CS, BO, and STS, which were then converted into t scores as shown in Table 4-4 and Figure 4-1. One outlier was removed from the STS scale, with a score of 78.31, to achieve normality.

Table 4-4: T scores from the ProQOL-5.

	ProQOL-5 CS	ProQOL-5 BO	ProQOL-5 STS
Median	51.55	50.15	46.35
Mode	56.99	38.73	42.81
Sample Minimum	26.51	29.21	35.70
Sample Maximum	65.70	71.09	71.21

Notes. Listwise $n = 37$. $M = 50$, $SD = 10$.

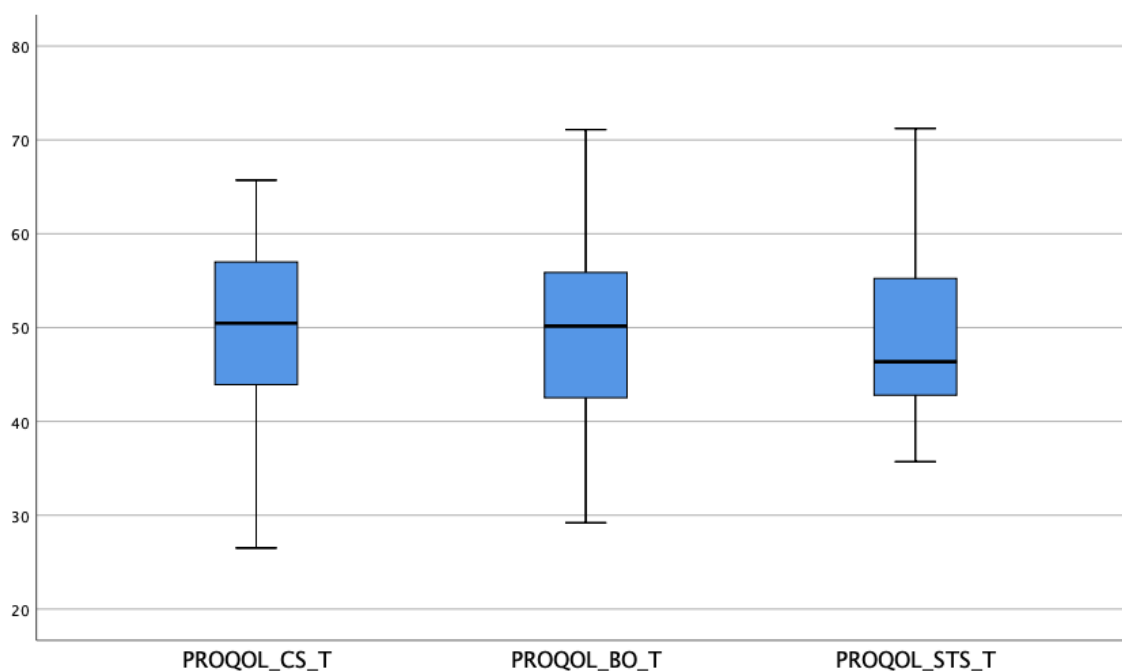


Figure 4-1: ProQOL-5 *t* score boxplots for CS, BO, and STS.

An adjusted STS score was also calculated based on the recommendation from Hemsworth and colleagues (2018) to remove two items from the original ProQOL-5 measure of STS. Finally, syntax shared by Heritage and colleagues (2018) adjusted the original ProQOL-5 data into two scales of CS and CF (indicated as the ProQOL-21). The CS scale required little to no adjustment, and the correlation between the ProQOL-5 CS and ProQOL-21 CS indicated they were nearly identical ($r = .999, p < .01$). Interestingly, the negative relationship between STS and the ProQOL-21 CS scale was not significant with the original scale but became significant ($r = -.341, p = .045$) following the Hemsworth, et al. (2018) adjustment. The ProQOL-21 CF appeared to have satisfactorily captured aspects of emotional, physical, and traumatic reactions associated with caring given that its correlations with the ProQOL-5 burnout and ProQOL-5 STS scales were .886 and .855, respectively, both of which were significant at the .01 level (see Table 4-5).

Table 4-5: Correlations between ProQOL sum scores.

	ProQOL-21 CS	ProQOL-21 CF
ProQOL-5 CS	.999**	-.396*
ProQOL-5 BO	-.538**	.886**
ProQOL-5 STS	-.291	.855**
ProQOL-5 STS Adjusted	-.341*	.841**
ProQOL-21 CF	-.303	1

Note. ** $p < .01$ (2-tailed). * $p < .05$ (2-tailed).

For the remainder of the analyses, the PROQOL-21 CS and CF scores are utilized (see Table 4-6). Total scores for 36 and 37 of the respondents could be summed for CS and CF scores, respectively. CS scores ranged from 18 (13th percentile) to 36 (98th percentile). The mean score was 29.08, which was at the 67th percentile. CF scores ranged from 11 (2nd percentile) to 36 (97th percentile). The CF mean of 22.65 was at the 64th percentile after rounding.

Table 4-6: ProQOL-21 descriptive statistics.

	<i>M</i>	<i>SD</i>	Percentile
ProQOL-21 CS	29.08	4.37	67
ProQOL-21 CF	22.65	6.37	64

Note. Listwise $n = 35$.

Teacher Responses

Two hypothetical vignettes (see Appendix E) were presented and teachers rated their agreement with potential responses. For the first vignette (pencil/aggression), 47 teachers had a mean agreement for emotionally supportive responses of 20.70 (SD = 2.44). For punitive responses, the mean agreement was 12 (SD = 3.26). The second vignette (snack/disruption) with 47 responses had agreement of 20.08 (SD = 2.46) for emotionally supportive responses and 9.28 (SD = 3.35) for punitive responses. Although significantly correlated within the .72-.74 range, because there were statistically significant differences between vignettes (supportive: $t(46) =$

2.30, $p = .026$; punitive: $t(46) = 7.77, p < .001$), the results were analyzed separately as displayed in Table 4-7.

In addition to their probability of giving of emotionally supportive or punitive responses, teachers were asked to rate their beliefs about the impact of their responses and their responsibility for co-regulating students' emotions. Mean responses indicated that overall, teachers felt their responses were likely to have a long-lasting impact on the student's behavior ($M = 4.29, SD = 0.89$) and that helping the child learn to manage their emotions was completely part of their responsibility as a teacher ($M = 4.82, SD = 0.37$).

Table 4-7: Means of TRS responses.

	Vignette 1 $M (SD)$	Vignette 2 $M (SD)$
Supportive responses	20.70 (2.44)	20.08 (2.46)
Punitive responses	12 (3.26)	9.28 (3.35)
Beliefs about impact	4.26 (.95)	4.35 (.90)
Beliefs about responsibility	4.81 (.40)	4.83 (.38)

Note. Listwise $n = 45$.

Student-Teacher Relationships

Teachers rated hypothetical relationships with the child from the second vignette (snack/disruption) using the STRS-SF. Based on responses from 47 participants, the mean closeness score was 33.25 ($SD = 4.00$; possible range 8-40, actual range 25-40) while the mean conflict score was 20.25 ($SD = 4.82$; possible range 7-35, actual range 9-31). Overall, total scores indicated positive relationships with the hypothetical students ($M = 54.74, SD = 7.08$; possible range 15-75, actual range 43-72).

Research Question 1: Variable Associations

Correlations were explored between the following variables: dimensions of temperament (i.e., activity level, regularity, adaptability, approach, physical sensitivity, intensity of emotion, distractibility, mood, and persistence), age, total working experience with children, number of childhood traumatic events and childhood trauma impact, receipt of prior trauma training, emotion regulation strategies (i.e., avoiding the situation, active modification, reappraisal, suppression, and tension reduction), responses to hypothetical students, student-teacher relationship, and professional quality of life. Results are displayed in Table 4-8, and some significant correlations are further discussed.

Of temperament inter-associations, there were several key variables. Adaptability was negatively correlated with distractibility ($r = -.385, p = .006$) and positively correlated with approach ($r = .351, p = .012$) and mood ($r = .317, p = .025$), all to a moderate degree. Distractibility was further negatively moderately associated with approach ($r = -.313, p = .027$) and positively moderately correlated with physical sensitivity ($r = .362, p = .010$) and intensity of emotional reaction ($r = .338, p = .016$). An inverse relationship of a moderate degree was found between physical sensitivity and regularity ($r = -.309, p = .029$). Lastly, approach was moderately associated with positive mood ($r = .423, p = .002$). Other notable temperament findings included a positive and moderate relationship between adult physical sensitivity and the number of childhood traumatic events ($r = .349, p = .014$), and between persistence and prior trauma training ($r = .306, p = .031$). Extending temperament to emotional regulation strategies, avoidance was positively associated with activity level ($r = .319, p = .026$) and suppression was positively associated with regularity ($r = .291, p = .044$). Feelings of responsibility for student emotion regulation were negatively correlated with intensity of reactions ($r = -.290, p = .048$) and positively correlated with adaptability ($r = .335, p = .021$). In terms of relationships with

students, physical sensitivity and closeness were positively associated ($r = .318, p = .030$) while positive mood and conflict were negatively associated ($r = -.305, p = .037$). Regularity had a moderately negative relationship with CF ($r = -.367, p = .028$).

A few positive inter-correlations between emotion regulation strategies were found. Avoidance was moderately associated with suppression ($r = .402, p = .005$), and there was a small correlation between suppression and tension reduction ($r = .294, p = .043$). Reappraisal and tension reduction were also correlated ($r = .471, p = .001$), to a moderate degree, as were reappraisal and active modification ($r = .379, p = .008$). Avoidance was moderately negatively associated with the teacher variables of age ($r = -.315, p = .027$), working experience ($r = -.413, p = .007$), and childhood trauma impact ($r = -.363, p = .041$). Active modification was negatively associated with prior trauma training ($r = -.309, p = .031$).

Emotionally supportive responses from the second vignette were positively, significantly associated with the following emotion regulation strategies: modification ($r = .474, p = .001$); reappraisal ($r = .544, p < .001$); and tension reduction ($r = .429, p = .003$). Each of these relationships has a large effect size (Cohen's d ranging from .95 to 1.3). Conversely, suppression was positively and significantly associated with punitive responses ($r = .325, p = .028$), with a medium effect size. In terms of the student-teacher relationship subscales, reappraisal was the only significantly related emotional regulation strategy. Reappraisal was positively associated with closeness ($r = .374, p = .011$) and negatively associated with conflict ($r = -.302, p = .039$), with an overall relationship correlation of .415 ($p = .004$). In addition, student-teacher closeness and emotionally supportive responses were significantly correlated ($r = .374, p = .011$).

CS was positively, significantly related to giving emotionally supportive responses ($r = .381, p = .029$) and beliefs about impact ($r = .437, p = .011$) on the TRS. CS was negatively, significantly related to punitive responses ($r = -.387, p = .029$).

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27			
17	.15	.29	-	.04	0	-	-	.11	.05	-	-	-	-	-	-	.40	.05	.51												
Suppression	8	1*	.004	.144	.12	.08	.03	.198	.30	.188	.30	.13	**																	
18	-	.25	.082	.285	.073	-	-	.11	.20	-	.05	.171	-	-	-	.379	.27	.1												
Reappraisal	20	7				.11	.144	1	.0468		.183	.11	.054	**	7															
19	-	.11	-	.248	.112	.01	-	.07	.12	.043	-	.090	-	.00	-	.176	.29	.471												
Tension reduction	.06	.9	.208			0	.133	7		.00		.1137	.196			4*	**													
20	-	.20	-	.104	.108	-	-	.03	-	.069	.08	-	-	-	-	.474	.23	.544	.429	.1										
Supportive	.18	.6	.085			.11	.130	.14	7	.098	.310	.24	.067	**	5	**	**	**												
21	.15	.13	.010	-	-	.12	-	.06	.00	-	-	-	-	-	-	.060	.32	-	.183	.05	.1									
Punitive	4	4		.102	.1223		.066	5	.180	.19	.117	.360	.16	.033		5*	.073	.7												
22 Impact belief	-	-	-	.088	.287	.03	.15	-	-	.109	.01	-	.099	.03	-	.007	-	.090	.239	.28	-	.1								
23	-	-	.335	.005	.241	-	.09	.17	-	.115	.05	.133	.241	-	-	.049	.19	.179	.16	-	.17	.1								
Responsibility belief	.26	.01	*			.29	0	0	.16	6		.14	.252	0		.0339	.05	.9												
24	.02	.07	-	-	.318	.12	.16	-	.11	.174	-	.017	.004	.04	-	.204	-	.347	.216	.37	-	.15	.081							
Closeness	5	9	.106	.011*		9	9	.10	.9		.00		.172	.07	*		4*	.16	.6	.6										
25	-	-	-	-	-	.14	-	-	.122	-	-	.076	.09	.134	-	-	-	-	.02	-	-	-	-	-	-	-	-	1		
Conflict	.04	.23	.070	.040	.0680		.03	.30	.02		.04	.020	3		.154	.10	.302	.090	.11	.6	.14	.09	.230							
26 Total relationship	.00	.16	-	.040	.252	-	.10	.13	.13	.055	.02	.010	-	-	-	.201	.02	.415	.235	.27	-	.26	.09	.724	-	.1				
27 PQL-21 CS	3	9	.038			.05	.7	.8	.6	6		.040	.00	.213	3	**		.11	.2	.7	**	.816								
28 PQL-21 CF	0	.36	.265	7	1	.20	.3	.167	.16		.026	.13	.109	.1478	.148	.07	.1	.04	0		.0446	.30								
	7*					2		0			8					8	3													

Note. ** $p < .01$. * $p < .05$.

Research Question 2: Prediction of Punitive Responses

Linear regression analysis examined the independent variables of working experience, the z scores of suppression, and the z scores of CS with punitive responses as the dependent variable. Assumptions for the regression analysis were checked. Scatterplots for suppression and CS were visually inspected for linear relationships with punitive responses. Outliers and normality were assessed using histograms, the Shapiro-Wilk test, and boxplots. Total working experience was maintained as a non-normal variable, $W(44) = .931, p = .011$. Suppression was normal, $W(48) = .954, p = .059$, as was CS with $W(36) = .959, p = .207$. One outlier from the punitive response variable required removal to achieve normality, $W(46) = .953, p = .061$. The Durbin-Watson test for auto-correlation was within the acceptable range ($DW = 1.93$), as were collinearity statistics (T ranging from .899 to .954 and VIF ranging from 1.048 to 1.112). Residuals appeared evenly spread in a scatterplot.

Results of the linear regression indicated that the overall model was significant, $F(3, 24) = 8.89, p < .001, R^2 = .53$. The coefficients of individual predictors were examined further; working experience ($t = -2.32, p = .029$), suppression ($t = 2.44, p = .022$) and CS ($t = -2.58, p = .016$) were all significant predictors of punitive responses in the model; see Table 4-9. Use of the emotion regulation strategy of suppression positively predicts punitive responses to students, while CS and working experience negatively predict punitive responses.

Table 4-9: Regression model of work experience, suppression, and CS on punitive responses.

Predictor variable	<i>B</i>	<i>SE B</i>	β
Constant	10.255	.728	
Work experience	-1.00	.043	-.338*
Suppression	1.046	.428	.362*
CS	0.966	.375	-.371*

Note. Adjusted $R^2 = .467$. * $p < .05$.

Research Question 3: Prediction of Compassion Fatigue

In a previous study, CS was found to moderate the relationship between suppression and intrusions, a symptom of STS (Máirean, 2016). Following a check of assumptions for variables not previously analyzed (i.e., CF and beliefs), regression analysis was used to examine whether CS moderated the relationship between suppression and CF in the current sample. Scatterplots for beliefs, suppression, and CS were studied to rule out non-linearity with CF. Outliers and normality were assessed using histograms, the Shapiro-Wilk test, and boxplots. CF was normal, $W(37) = .977, p = .623$, while beliefs about impact was not, $W(46) = .721, p < .001$. There were two outliers for responding in disagreement about a teachers' impact on students; these were maintained given the lack of variance in responding, which may have been related to a social desirability bias. Before conducting the regression, CS, CF, and suppression were standardized as z scores and an interaction term was computed between suppression and CS. The Durbin-Watson test for auto-correlation was within the acceptable range ($DW = 1.97$), as were collinearity statistics (T ranging from .738 to .951 and VIF ranging from 1.051 to 1.504). A scatterplot of residuals indicated some heteroscedasticity, with more variance at the lower values of the standardized predicted values.

The interaction between suppression and CS fell short of statistical significance, $F(4, 27) = 1.49, p = .232, \Delta R^2 = .114$, and main effect coefficients in the regression were non-significant (see Table 4-10). The reduced model without the interaction term remained non-significant, $F(3, 28) = .676, p = .574, \Delta R^2 = .068$.

Table 4-10: Regression model of beliefs, suppression, CS, and their interaction on CF.

Predictor variable	<i>B</i>	<i>SE B</i>	β
Beliefs about their impact	.031	.245	.027
Suppression	-.165	.198	-.168
CS	-.240	.184	-.260
SuppressionxCS	.489	.253	.388

Note. Adjusted $R^2 = .06$

Research Question 4: Prediction of Student-Teacher Relationship

Linear regression was calculated to predict the hypothetical student-teacher relationships based on a teachers' tendency to use reappraisal and their level of CF (high versus low), as well as the interaction between these variables. Assumptions for reappraisal and student-teacher relationships were checked, beginning with scatterplots showing linear relationships. The STRS-SF total score was normal, $W(47) = .970, p = .260$ with no outliers. One violation of assumptions was identified in that reappraisal was non-normal, $W(48) = .941, p = .018$, with a positive skew (skewness = .086, SE = .34 and kurtosis = -.74, SE = .67); there were no outliers. Reappraisal was standardized for analysis. CF responses were grouped by low versus high levels of CF, with low CF representing participants who fell below the 30th percentile ($n = 8$) and high CF including those above the 70th percentile ($n = 12$) of participants, based on norms from Heritage, Rees, and Hegney (2018). Participants without complete data for the analysis and those falling in the moderate range of CF were removed for the regression.

The Durbin-Watson test for auto-correlation indicated slight negative autocorrelation ($DW = 2.80$), with T ranging from .974 to .994 and VIF ranging from 1.006 to 1.027). Residuals appeared approximately homoscedastic in a scatterplot. The overall model was not significant, $F(3,16) = 3.181, p = .053$, nor was the reduced model with the interaction term removed, $F(2, 17) = .014, p = .986$. Coefficients are reported in Table 4-11; although neither the main effects of reappraisal or high versus low CF were significant, the interaction term was ($t = -3.082, p = .007$).

Table 4-11: Regression model of high/low CF, reappraisal, and the interaction of CF and reappraisal on the overall student-teacher relationship.

	<i>B</i>	<i>SE B</i>	<i>β</i>
Reappraisal	.404	1.410	.057
CF	.870	1.357	.129
CFxReappraisal	-3.439	1.116	-.618*

Note. Adjusted $R^2 = .256$. * $p < .05$.

Chapter 5

Discussion

The current study was guided by emotion regulation and CS-CF theories with a trauma-informed lens. In particular, CS-CF has been studied for the past 25 years with professionals who work with trauma-affected individuals but has only recently been applied to teachers who work with many students each day. Thus, this study was exploratory in both the research aims and measurement tools utilized. This discussion section interprets the results compared to what is known about teachers and STS, discusses limitations and conclusions of the study, and identifies priorities for the next steps.

Discussion of Notable Findings

The current sample represented Head Start teachers and teacher aides in a single location. Several demographic and experiential variables related to key outcomes. This sample's ACE scores were roughly equivalent to data from the behavioral risk factor surveillance system from 2011 to 2014 (Merrick, Ford, Ports, & Guinn, 2018), indicating that the sample's childhood trauma exposures are comparable to a current national average. The more childhood traumatic events experienced, the more physically sensitive respondents in this study rated themselves to be. Interestingly, their rating of traumatic impact was inversely related to the use of avoidance to regulate emotions. Avoidance was also negatively associated with age to a moderate degree, which was unexpected given the positivity effect for older adults (a bias wherein older adults prefer to and are better able to attend to positive input; Scheibe, & Zacher, 2013). Similarly, current findings differed from Burić, Penezić, and Sorić (2017) in that avoidance was negatively

related to working experience; in fact, avoidance was the only regulation strategy significantly related to working experience, while the validation study for the TERS found that teachers with more years of experience more intensely related their emotions for four of the five strategies (with a negligible correlation for active modification). It is important to note that the experience variable in the current study includes both formal and informal experience working with children, and thus includes more variability than years of formal teaching experience.

Some emotion regulation strategies were associated with each other, indicating a tendency to respond in certain ways. Specifically, avoidance and suppression were associated with each other as less direct emotion regulation strategies. Modification and reappraisal, both active and cognitively demanding strategies, were also associated. Tension reduction tended to be used by those who utilized suppression and reappraisal in the present sample. Given the link between teacher and student emotion regulation (Jennings & Greenberg, 2009), it would be hoped that those who had received prior training on trauma utilized productive strategies for managing emotions at a higher rate; however, all associations between prior training and emotion regulation strategies were negative or negligible, including one significant association in which active modification was negatively associated with prior training. Although specific details on prior trauma training were not queried, it is likely that the sessions focused on student regulation but not necessarily teacher regulation. For better outcomes, trauma training should align with what is known about effective professional development for teachers (e.g., Michael Pressley's recommendations as summarized in Mohan, Lundeberg, & Reffitt, 2008): it should be offered for those with interest in developing their co-regulatory skills, collaborating with colleagues, and continuously improving their practices over an extended time.

When rating responses to students, there were statistically significant differences between the vignettes of two students with emotion regulation difficulties; teachers appeared to feel more strongly in response to the aggressive student (Vignette 1) compared to the disruptive student

(Vignette 2), especially with punitive responses in response to Child A kicking another student. Results from the TRS and STRS-SF that were included for analyses only referred to Vignette 2, the disruptive student, which evoked a lower mean level of punitive responses. In predicting punitive responses, working experience, suppression, and CS accounted for approximately half of the variance in the model – which is notable especially at the preschool level. The tendency to use suppression was a positive predictor of punitive responses to students, which aligns with the general trend in prior research for suppression to be associated with negative outcomes. CS and working experience were negative predictors of punitive responses, meaning that the amount of time that teachers have been in their role and their experience of meaningful helping both serve as protective factors against punitive responses to emotion regulation difficulties. The effect sizes of the associations between emotion regulation strategies and supportiveness in response to students were noteworthy, with modification, tension reduction, and reappraisal all showing large practical significance.

The relationship between reappraisal and student-teacher closeness and conflict was shown to be moderately and significantly correlated in the first research question, with a positive relationship between reappraisal and closeness and a negative relationship between reappraisal and conflict. Although the overall regression model in the fourth research question did not reach significance, the predictive interaction term suggests a need for further investigation on whether the use of reappraisal becomes less effective in supporting a positive student-teacher relationship at higher levels of CF. Taken together, the results of the current study fit within the model of a prosocial classroom as depicted by Jennings and Greenberg (2009) in terms of the influence of teachers' wellbeing on their healthy relationships with students.

It is worth considering, then, how to help teachers assess their own wellbeing and find resources or support to improve self-care and coping. Improvements in school culture and systemic needs for school staff and students alike are necessary to reduce stress and burnout

caused by job demands. Effective professional development is a key component of these supports. At the same time, teachers can be proactive in attending to their physical, psychological, emotional/social, and intellectual health, especially when exposed to trauma in their classrooms. Assessments like the ProQOL-5 can provide initial direction for educators in gauging their CF needs. Utilization of existing support systems like teacher mentorships, collaborative learning teams, and employee assistance programs may be the ideal places to begin given the aspect of social support. Similarly, mental health professionals in schools such as school psychologists can consult with teachers who are struggling to regulate themselves or their students. Trauma-informed mindfulness can be incorporated in the classroom using supports like the Calm Schools Initiative (<https://www.calm.com/schools>), or Stop, Breathe, and Think for Educators (<https://www.stopbreathethink.com/educators/>). Mindfulness apps abound for teachers to practice self-care on their own as well. Whatever strategies are attempted, they should align with the teacher's values and ideally support the meaning and purpose that underlies their compassion satisfaction.

Contributions to the Research Agenda on STS

Although some aspects of teachers' professional quality of life have an extensive research base, such as burnout, rates of CS and STS for this profession are largely unknown. As delineated in a public health framework by Molnar and colleagues (2017), the first step in advancing research on STS is *defining the problem including measuring the scope or prevalence*. In the current sample, the first known reporting of Head Start teachers and teacher aides (not home visitors), 32.4% of participants were in the highest quartile compared to ProQOL-21 CF norms. Only two published articles have provided frequency rates to compare levels of CF. Briefly from these studies, 75% of school personnel in a sample from the northwest U.S.

(Borntrager et al., 2012) and 43% of a sample of Canadian educators (Koenig, Rodger, & Specht, 2018) were found to have high levels of STS.

The second step in understanding CF for educators is *identifying risk and protective factors for negative outcomes*. The current study could not systematically explore risk and protective factors for CF; instead, variables were selected based on theory and significant associations to negative outcomes, including how CS and CF may contribute to negative outcomes in the classroom. CS was used as a predictor along with working experience and suppression to predict punitive responses, and the resulting analysis supported CS as a protective factor in how teachers responded to hypothetical students demonstrating behavioral concerns in a vignette. CS did not serve as a moderating variable between suppression and CF upon further evaluation. The most intriguing result is the potential influence of CF on the effectiveness of reappraisal as a strategy to maintain positive student-teacher relationships, pending further study.

The third step of Molnar's framework, *developing interventions and policies*, is already well underway in education despite the limited teacher-specific literature. Groups such as the U.S. Department of Education have provided training on STS (Hydon et al., 2015) developed by experts in CF from other fields. Building on their work, Caringi et al. (2015) made several intervention recommendations, emphasizing a team-based and multi-tiered (MTSS) approach; see their discussion for specific steps schools can take to improve their STS mitigation. This analysis supports policy and intervention proposals. It was found that suppression affected hypothetical outcomes of interactions with students. The importance of effective emotion regulation for teachers is not a new idea, but becomes more critical when placed in the trauma-informed lens: these results indicate teachers ineffectively utilizing reappraisal due to CF may be punishing students for acting-out behavior that could be born of trauma, despite the well-known tenet of trauma-informed practice that consequences should not resemble discipline by a maltreating perpetrator. These daily, individual responses to children are the mechanisms for co-regulation

and therefore cannot be squandered. Policy or practice change could come in the form of increased SEL for teachers' regulation during preservice training and the inclusion of self-regulation as a competency for teachers.

For this change to occur, *monitoring and evaluating interventions and policies over time* is the essential fourth step of the public health framework. According to deans in colleges of education interviewed by Schonert-Reichl and colleagues (2017), one factor that could influence decisions regarding the incorporation of more SEL content in teacher preparation programming is research showing effectiveness for teachers, which is limited relative to research showing effectiveness for students. Although the current study does not provide evidence of training outcomes for teaching emotion regulation strategies to educators, it does illuminate potential adverse consequences of not doing so.

Limitations

Some limitations affect the interpretation of results for the current study. Generalizability is limited given the small convenience sample, with all participants working under similar working conditions that were not controlled. Of particular interest, this group of Head Start teachers and teacher aids has an overall lower level of CF compared to samples of northwestern U.S. and Canadian school personnel. Although some explanations for this difference could be postulated, any explanation would be incomplete without a fuller account of individual differences, organizational practices, and workplace climate. The sample size is of concern when considering missing data, which was notably high for CF, and the limited power of the regression analyses. In terms of study design, the cross-sectional nature of the data means that causality cannot be assumed; although theory was utilized to select predictor variables, there are likely bidirectional effects that were not captured through the limited analyses.

Measurement was conducted using freely available scales, each of which warrants discussion. Measurement of emotion regulation strategies was completed with a new measure, the TERS (Burić et al., 2017), which has not been utilized in U.S. samples. The scales assessing temperament and traumatic events were selected based on face validity, and the traumatic events questionnaire only reflected experiences during childhood (the second measure of recent traumatic events was not administered). For practical relevance, the study included the TRS and STRS-SF to capture teacher interactions with students. However, these measures were completed based on vignettes created by Gottesman (2016) and validated with a sample of graduate students, which has not been explored as an approach to rating student-teacher relationships.

Most notably, concerns have been raised about the theoretical distinction and psychometric properties between burnout and STS as measured by the ProQOL under the umbrella of CF (e.g., Cieslak, Shoji, Douglas, Melville, Luszczynska, & Benight, 2014). There is evidence of a directional relationship in that burnout has been identified as a risk factor for the development of STS (Shoji et al., 2015). Despite this, Hemsworth, Baregheh, Aoun, and Kazanjian (2018) found on the ProQOL-5 scale that inter-item correlations were all significant for the CS scale but were inconsistent for burnout and STS, with the scale average inter-item correlations for STS just below and burnout below the recommended value of $r = .3$. Similarly, in terms of convergent validity, the explained variance was satisfactory for the CS scale but slightly below 50% for STS and well below for burnout. Reliability, as well as construct and discriminant validity, was established for all three scales across all three samples in the study. One recommendation from Hemsworth and colleagues (2018) was to drop two items from the STS scale for improved psychometric properties. In an alternative version of the ProQOL scale, the ProQOL-21, Heritage, Rees, and Hegney (2018) also found that the burnout and STS scales demonstrated less than adequate measurement properties. Instead of recommending modifications within the burnout and STS scales, Heritage and colleagues used items from each

scale to create an overall CF scale, again with a modified scoring format and cutoff scores. The authors conceptualize the CF scale as “a combination of STS items that capture aspects of the trauma associated with caring, along with other items related to emotional and physical exhaustion associated with caring” (p. 16). Although improved in terms of psychometric properties, there is a limitation in potentially clouding the directionality of burnout as a risk factor for STS when utilizing this combined CF scale. Further still, there remains theoretical clarity to be found in the construct validity between CS and CF; Geoffrion, Lamothe, Morizot, & Giguère (2019) suggest CS and CF are not separate constructs but instead exist on a continuum of professional quality of life.

Future Directions

Borntrager and colleagues were the first to publish a systematic examination of STS in public school personnel as recently as 2012. Their sample included teachers, paraeducators, school counselors, school social workers, and administrators. Although the high rates of STS found in the aforementioned study are cause for concern, the job training, requirements, and traumatic exposure of the school personnel included vary greatly, and specific conclusions for teachers cannot be drawn. Although the same can be said for the current sample in that there is a lack of generalizability beyond the Head Start teachers and teacher aides sampled, the relatively lower experience of CF is a positive sign. Given the variability in the few studies examining the prevalence of STS in educators, understanding the scope of the problem requires more research with generalizable samples.

Further study is also needed on teacher use of emotion regulation strategies. Prior literature has not neglected the teachers’ experience of emotion in the classroom; however, as discussed by Burić and colleagues (2017), investigations have only been framed within the

emotion regulation literature rather than stress and coping or emotional labor since Sutton (2004). Further, the TERS is the first teacher-specific measure of emotion regulation strategies developed in 2017 to examine these processes across all aspects of a teachers' day, to include interactions with other adults (e.g., parents and administrators) as well as student-teacher interactions. The current study appears to be the first to utilize the TERS following its initial development and validation.

The relationships between emotion regulation and student-teacher interactions are not well researched, and there is less still addressing how CS and CF may influence these relationships. Co-regulation can be time-intensive and require great dexterity of emotional skill. This poses difficulty in feasibility for teachers who are responsible for the supervision of a classroom full of students and also implies that teachers must be well trained in emotion regulation to apply and generalize its principles in co-regulatory relationships. Initial evidence from this study points to potential detrimental effects of utilizing reappraisal when experiencing high levels of CF; further study and a thorough explanation of the mechanism behind this interaction effect is needed before making decisions about how to effectively address this concern in training or professional development. For instance, one potential next step is to investigate whether *affective flexibility* (Malooly, Genet, & Siemer, 2013), previously found to affect reappraisal ability, is related to CF.

Conclusions

Although the measurement of CS and CF/STS requires continued refinement, these constructs appear important to the functioning of teachers in the preschool environment. CS was correlated with teacher beliefs about their impact on students, as well as giving emotionally supportive responses and refraining from punitive responses. Along with working experience, CS

plays a protective role in that it negatively predicts punitive responses to students. Further, there may be initial evidence for an interaction between CF at extreme degrees and reappraisal in predicting student-teacher relationships. Therefore, it is recommended that trainers take a holistic view of teachers in the field when providing instruction on teacher emotion regulation strategies; their instruction may have unintended negative consequences if they do not first address a teacher's state of professional quality of life

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Appendix A
Demographic Questionnaire

Please complete the following questions about yourself.

What is your age? _____

What is your ethnicity?

- Asian, Asian-American
- Black or African American
- Hispanic, Hispanic-American, Latino
- American Indian, Alaskan Native
- Native Hawaiian or Pacific Islander
- White or Caucasian
- Other _____

What is your sex?

- Male
- Female
- Other _____

In which state do you currently reside?

▼ Alabama ... I do not reside in the United States

What is the highest level of school you have completed or the highest degree you have received?

- Less than high school degree
- High school graduate (high school diploma or equivalent including GED)
- Some college but no degree
- Associate degree in college (2-year)
- Bachelor's degree in college (4-year)
- Master's degree
- Doctoral degree
- Professional degree (JD, MD)

What is/was your field(s) of study beyond high school? _____

Information about income is very important to understand. Would you please give your best guess? Please indicate the answer that includes your entire household income in the previous year before taxes.

- Less than \$10,000
- \$10,000 to \$19,999
- \$20,000 to \$29,999
- \$30,000 to \$39,999

- \$40,000 to \$49,999
- \$50,000 to \$59,999
- \$60,000 to \$69,999
- \$70,000 to \$79,999
- \$80,000 to \$89,999
- \$90,000 to \$99,999
- \$100,000 to \$149,999
- \$150,000 or more

Which best describes your current position?

- Preservice teacher (including undergraduates not yet involved in student teaching)
- Inservice teacher (including instructional coaches, department heads, vocational, literacy specialist, etc.)
- Paraeducator (paraprofessionals, teacher aides, etc.)
- Support personnel (school counselor, school psychologist, social worker, school nurse, etc.)
- Administrator (school-level or district level)
- Other _____

What is your prior experience working with children (in years)?

Informal experience (e.g., babysitting, camp counselor) _____

Formal teaching experience _____

What K-12 grade(s) have you taught?

K-2nd grade

3rd-5th grade

6th-8th grade

9th-12th grade

Have you ever received training on trauma-informed approaches in schools and/or with children?

Yes

No

Appendix B

Your Temperament Assessment Scale

By answering the following questions for yourself, you can increase your understanding of your own temperament.

Activity Level. How much do you need to move around during the workday? Can you sit through a long meeting without wiggling?

	1	2	3	4	5	
Active						Quiet
	((((((

Regularity. How regular are you in your eating, sleeping, and elimination habits?

	1	2	3	4	5	
Regular						Irregular
	((((((

Adaptability. How quickly do you adapt to a change in schedule or routine, a new place or food?

	1	2	3	4	5	
Adapt quickly						Slow to adapt
	((((((

Approach/Withdrawal. How do you react the first time to new people, places, activities, or tools?

	1	2	3	4	5	
Initial approach	(((((Initial withdrawal

Physical Sensitivity. How aware are you of slight differences in noise level, temperature, or touch?

	1	2	3	4	5	
Not sensitive	(((((Very sensitive

Intensity of Reaction. How strong are your reactions?

	1	2	3	4	5	
High intensity	(((((Mild reaction

Distractibility. Are you easily distracted?

	1	2	3	4	5	
Very distractible	(((((Not distractible

Positive or Negative Mood. How much of the time do you show pleasant, joyful behavior compared with unpleasant or grouchy moods?

	1	2	3	4	5	
Positive mood	(((((Negative mood

Persistence. How long will you continue with a difficult task?

	1	2	3	4	5	
Long attention span	(((((Short attention span

Appendix C

Childhood Traumatic Events Scale (CTES)

For the following questions, answer each item that is relevant. Be as honest as you can. Each question refers to any event that you may have experienced **prior to the age of 17**.

Prior to the age of 17, did you experience a death of a very close friend or family member?

Yes

No

How old were you? _____

How traumatic was this?

1 - Not at all traumatic

2

3

4 - Somewhat traumatic

5

6

7 - Extremely traumatic

How much did you confide in others about this traumatic experience at the time?

- 1 - Not at all
- 2
- 3
- 4
- 5
- 6
- 7 - A great deal

Prior to the age of 17, was there a major upheaval between your parents (such as divorce, separation)?

- Yes
- No

How old were you? _____

How traumatic was this?

- 1 - Not at all traumatic
- 2
- 3
- 4 - Somewhat traumatic

- 5
- 6
- 7 - Extremely traumatic

How much did you confide in others?

- 1 - Not at all
- 2
- 3
- 4
- 5
- 6
- 7 - A great deal

Prior to the age of 17, did you have a traumatic sexual experience (raped, molested, etc.)?

- Yes
- No

How old were you? _____

How traumatic was this?

- 1 - Not at all traumatic

- 2
- 3
- 4 - Somewhat traumatic
- 5
- 6
- 7 - Extremely traumatic

How much did you confide in others?

- 1 - Not at all
- 2
- 3
- 4
- 5
- 6
- 7 - A great deal

Prior to the age of 17, were you the victim of violence (child abuse, mugged or assaulted - other than sexual)?

- Yes
- No

How old were you? _____

How traumatic was this?

- 1 - Not at all traumatic
- 2
- 3
- 4 - Somewhat traumatic
- 5
- 6
- 7 - Extremely traumatic

How much did you confide in others?

- 1 - Not at all
- 2
- 3
- 4
- 5
- 6
- 7 - A great deal

Prior to the age of 17, were you extremely ill or injured?

- Yes
- No

How old were you? _____

How traumatic was this?

- 1 - Not at all traumatic
- 2
- 3
- 4 - Somewhat traumatic
- 5
- 6
- 7 - Extremely traumatic

How much did you confide in others?

- 1 - Not at all
- 2
- 3
- 4
- 5
- 6
- 7 - A great deal

Prior to the age of 17, did you experience any other major upheaval that you think may have shaped your life or personality significantly?

Yes

No

How old were you? _____

What was the event? _____

How traumatic was this?

1 - Not at all traumatic

2

3

4- Somewhat traumatic

5

6

7 - Extremely traumatic

How much did you confide in others?

1 - Not at all

2

- 3
- 4
- 5
- 6
- 7 - A great deal

Appendix D

Teacher Emotion-Regulation Scale (TERS)

Here are some statements describing strategies and techniques which you as a teacher can use in order to regulate emotions you experience at work. Please rate the degree of your agreement with each statement.

	Strongly disagree	Disagree	Neither agree nor disagree	Agree	Strongly agree
I try to avoid conflicting situations at school.					
I withdraw when the conversation turns in the wrong direction.					
In my work I try to avoid discussions about unpleasant topics.					
I pull back from conflicting situations at work.					
I avoid engaging in discussions with troublesome parents.					
When students make me angry with their behavior, I try to correct them and direct them on the right path.					
I question my own teaching methods when I feel helpless about some student.					
I am developing additional skills and knowledge to make my work with students less stressful.					
I ask more-experienced colleagues for advice when I have a problem at work.					
I am seeking additional information in order to solve problems at work that trouble me.					
When I become upset at work, I remind myself of my own priorities in life.					

	Strongly disagree	Disagree	Neither agree nor disagree	Agree	Strongly agree
In school, I calm myself by viewing things from another perspective.					
When I become furious at students' behavior, I remind myself that they are just kids.					
If, for some reason, I feel miserable at work, I redirect my thoughts to something positive.					
If I feel helpless, I make myself aware that some things are beyond my control.					
When I feel unhappy because of my job, I try to suppress that.					
I do not even want to think about the frustrations that I experience at work.					
I ignore the hurt I feel in some situations at work.					
If I feel annoyed with some situations at school, I try to suppress that.					
I ignore the anger I experience at work.					
I breathe deeply in order to reduce the tension from unpleasant situations at work.					
If students "drive me crazy" in class, I open the window to take a breath of fresh air.					
When I become upset at work, I first take a deep breath.					
When I get "out of line" at school, I count to ten.					
I breathe deeply in order to reduce the rage I feel occasionally at work.					

Appendix E

Teacher Response Survey (TRS)

Vignette 1:

Child A is sitting at a table with three other students. One of these other students mistakenly takes Child A's pencil. Child A shouts, "Give it back!" and then kicks the student in the leg. Child A engages in this type of behavior approximately three times a week.

Vignette 2:

Child A notices that his/her favorite snack is missing from his/her backpack. When it is time to transition to the carpet for a reading lesson, Child A refuses to come to the carpet and starts screaming, "I didn't have snack. I'm not coming!" Child A engages in this type of behavior approximately three times a week.

For each item, select the circle that best fits. My response to this incident would probably involve:

Strongly Disagree	Disagree	Neither Disagree Nor Agree	Agree	Strongly Agree
----------------------	----------	----------------------------------	-------	-------------------

Reprimanding Child A.

Assisting Child A in a calming exercise.

Referring Child A for a psycho-educational evaluation.

Using more praise in my interactions with Child A.

Telling Child A that I will call his/her parents.

Providing individual instruction to Child A regarding how to control emotions.

Keeping records of Child A's behavior.

Taking away recess privileges.

Giving a class lesson on how to control emotions.

Insisting that Child A apologize.

Strongly
Disagree

Disagree

Neither
Disagree Nor
Agree

Agree

Strongly
Agree

Validating Child A after some time has elapsed.
Using a loud voice to redirect Child A.

How I respond to Child A is:

- 1 (Unlikely to have a long-lasting impact on Child A's behavior.)
- 2
- 3
- 4
- 5 (Likely to have a long-lasting impact on Child A's behavior.)

Helping Child A learn how to manage his/her emotions is:

- 1 (Not part of my responsibility.)
- 2
- 3
- 4
- 5 (Completely part of my responsibility.)

Appendix F

Student-Teacher Relationship Scale – Short Form (STRS-SF)

Please reflect on the degree to which each of the following statements currently applies to your relationship with this child. Using the scale below, select the appropriate number for each item.

	Definitely does not apply	Not really	Neutral, not sure	Applies somewhat	Definitely applies
I share an affectionate, warm relationship with this child.					
This child and I always seem to be struggling with each other.					
If upset, this child will seek comfort from me.					
This child is uncomfortable with physical affection or touch from me.					
This child values his/her relationship with me.					
When I praise this child, he/she beams with pride.					
This child spontaneously shares information about himself/herself.					
This child easily becomes angry with me.					
It is easy to be in tune with what this child is feeling.					
This child remains angry or is resistant after being disciplined.					
Dealing with this child drains my energy					
When this child is in a bad mood, I know we're in for a long and difficult day.					
This child's feelings toward me can be unpredictable or can change suddenly.					
This child is sneaky or manipulative with me.					
This child openly shares his/her feelings and experiences with me.					

Appendix G

Professional Quality of Life Scale (ProQOL-5)

When you teach people you have direct contact with their lives. As you may have found, your compassion for those you teach can affect you in positive and negative ways. Below are some questions about your experiences, both positive and negative, as a teacher. Consider each of the following questions about you and your current work situation. Select the number that honestly reflects how frequently you experienced these things in the last 30 days.

If you are not currently a teacher, think about your closest experience (e.g., camp counselor, babysitter).

Never Rarely Sometimes Often Very
Often

I am happy.

I am preoccupied with more than one person I teach.

I get satisfaction from being able to teach people.

I feel connected to others.

I jump or am startled by unexpected sounds.

I feel invigorated after working with those I teach.

I find it difficult to separate my personal life from my life as a teacher.

I am not as productive at work because I am losing sleep over traumatic experiences of a person I teach.

I think that I might have been affected by the traumatic stress of those I teach.

I feel trapped by my job as a teacher.

Because of my teaching, I have felt "on edge" about various things.

I like my work as a teacher.

I feel depressed because of the traumatic experiences of the people I teach.

I feel as though I am experiencing the trauma of someone I have taught.

I have beliefs that sustain me.

I am pleased with how I am able to keep up with teaching techniques and protocols.

I am the person I always wanted to be.

My work makes me feel satisfied.

I feel worn out because of my work as a teacher.

Never Rarely Sometimes Often Very Often

I have happy thoughts and feelings about those I teach and how I could help them.

I feel overwhelmed because my work load seems endless.

I believe I can make a difference through my work.

I avoid certain activities or situations because they remind me of frightening experiences of the people I teach.

I am proud of what I can do to teach.

As a result of my teaching, I have intrusive, frightening thoughts.

I feel "bogged down" by the system.

I have thoughts that I am a "success" as a teacher.

I can't recall important parts of my work with trauma victims.

I am a very caring person.

I am happy that I chose to do this work.

Appendix H

IRB Approval Documentation



PennState

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Vice President for Research
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APPROVAL OF SUBMISSION

Date: January 17, 2018

From: Philip Frum, IRB Analyst

To: Megan Runion

Type of Submission:	Initial Study
Title of Study:	Preparing Teachers to Work with Trauma-Affected Students Through Co-Regulation Training
Principal Investigator:	Megan Runion
Study ID:	STUDY00008611
Submission ID:	STUDY00008611
Funding:	Not Applicable
IND, IDE, or HDE:	Not Applicable
Documents Approved:	<ul style="list-style-type: none"> • 02_Pre-Training_Measures.docx (0.01), Category: Data Collection Instrument • 11_Post-Training_Measures.docx (0.01), Category: Data Collection Instrument • 12_Follow-Up_Training_Measures.docx (0.01), Category: Data Collection Instrument • HRP-588 - ORP Consent Form Regulation Training_primary.pdf (0.03), Category: Consent Form • HRP-588 - ORP Consent Form Regulation Training_secondary.pdf (0.02), Category: Consent Form • HRP-591 - Protocol for Human Subject Research - Regulation training.pdf (0.04), Category: IRB Protocol • Introduction to Study.pptx (0.01), Category: Recruitment Materials • Module 1 Putting on Your Trauma Lenses 171211.pptx (0.01), Category: Other • Module 2 Taking Care of Yourself 171211.pptx (0.01), Category: Other • Module 3 Identifying Emotions 171211.pptx (0.01), Category: Other • Module 4 Managing Emotions 171209.pptx (0.01), Category: Other • Module 5 Solving Problems 171213.pptx (0.01), Category: Other • Module 6 Resolving Conflicts 171213.pptx (0.01), Category: Other

We would like to know how the IRB Program can better serve you. Please fill out our survey; it should take about a minute: <https://www.research.psu.edu/irb/feedback>.
10/20

	<ul style="list-style-type: none"> • Module 7 Organizing Material 171213.pptx (0.01), Category: Other • Module 8 Completing Tasks 171213.pptx (0.01), Category: Other • Module 9 Integrating into Your Classroom Practice 171209.pptx (0.01), Category: Other • ProQOL-5.docx (0.01), Category: Data Collection Instrument • Regulation Training Pre-Post Knowledge Tests.docx (0.01), Category: Data Collection Instrument • Regulation Training Recruitment Flyer.docx (0.03), Category: Recruitment Materials • Secondary_Participant_Feedback.docx (0.01), Category: Data Collection Instrument
Review Level:	Expedited

On 1/17/2018, the IRB approved the above-referenced Initial Study. This approval is effective through 1/16/2019 inclusive. You must submit a continuing review form with all required explanations for this study at least 45 days before the study's approval end date. You can submit a continuing review by navigating to the active study and clicking 'Create Modification / CR'.

If continuing review approval is not granted before 1/16/2019, approval of this study expires on that date.

To document consent, use the consent documents that were approved and stamped by the IRB. Go to the Documents tab to download them.

In conducting this study, you are required to follow the requirements listed in the Investigator Manual ([IRB-103](#)), which can be found by navigating to the IRB Library within CATS IRB (<http://irb.psu.edu>). These requirements include, but are not limited to:

- Documenting consent
- Requesting modification(s)
- Requesting continuing review
- Closing a study
- Reporting new information about a study
- Registering an applicable clinical trial
- Maintaining research records

This correspondence should be maintained with your records.

VITA

Megan C. Runion

Education

- Dec. 2019 *Ph.D.*, School Psychology, The Pennsylvania State University
- May 2016 *M.Ed.*, School Psychology, The Pennsylvania State University
- Dec. 2012 *B.A.*, Psychology, Minor in Human Development, The University of Maryland

Professional and Research Experience

- 2018-2019 School Psychology Intern, Fairfax County Public Schools
- 2013-2018 Clearinghouse for Military Family Readiness, The Pennsylvania State University

Selected Publications

- Culler, E., Moeller, J., **Runion, M.**, Perkins, K., Morgan, N., Aronson, K., ... & Embler (2019). School utilization of spouse perspectives on military parental absence for program planning. *Children & Schools, 41*(3), 169–178.
- Bertuccio, R., **Runion, M.**, Culler, E., Moeller, J., & Hall, C. (2019). A comparison of autism-specific training outcomes for teachers and paraeducators. *Teacher Education and Special Education*.
- Hall, C., **Runion, M.**, & Perkins, D. (2017). School-based prevention and intervention of child maltreatment: Current practice and future directions. In Dixon, Perkins, Craig, & Hamilton-Giachritsis (Eds.), *What Works in Child Protection: An Evidence-Based Approach to Assessment and Intervention in Care Proceedings*. Hoboken, NJ: Wiley-Blackwell.
- Materia, F., Miller, E., **Runion, M.**, Chesnut, R., Irvin, J., Richardson, C., & Perkins, D. (2016). Let's get technical: Enhancing program evaluation through the use and integration of Internet and mobile technologies. *Evaluation and Program Planning, 56*, 31-42