

Advancing Science and Practice for Vicarious Traumatization/Secondary Traumatic Stress: A Research Agenda

Beth E. Molnar
Northeastern University

Ginny Sprang
University of Kentucky

Kyle D. Killian
Capella University

Ruth Gottfried
Georgia State University

Vanessa Emery
Northeastern University

Brian E. Bride
Georgia State University

Professionals working in the fields of trauma, victim assistance, mental health, law enforcement, fire response, emergency medical services, and other professions are exposed to traumatic events on a regular basis; in some cases, workers are exposed every day. *Vicarious trauma* (VT) refers to the exposure to the trauma experiences of others, considered an occupational challenge for all of these professions. Research can assist in development of strategies to avoid being left vulnerable to negative impacts of this work, known as vicarious traumatization or secondary traumatic stress (STS). This article reviews existing research and outlines a research agenda for addressing vicarious traumatization/STS in the workplace. The review is organized by the 4 steps of a public health approach: (a) defining the problem including measuring the scope or prevalence, (b) identifying risk and protective factors for negative outcomes, (c) developing interventions and policies, and (d) monitoring and evaluating interventions and policies over time. A research agenda for the field is put forward following these same steps.

Keywords: vicarious trauma, secondary traumatic stress, first responders, victim services, compassion fatigue

The expectation that we can be immersed in suffering and loss daily and not be touched by it is as unrealistic as expecting to be able to walk through water without getting wet.

(Rachel Naomi Remen, 1996, *Kitchen Table Wisdom*, p. 52)

Editor's Note. Cambria Walsh served as the action editor for this article.—BEB

Beth E. Molnar, Institute on Urban Health Research and Practice, Bouvé College of Health Sciences, Northeastern University; Ginny Sprang, Department of Psychiatry, Center on Trauma and Children, University of Kentucky; Kyle D. Killian, Marriage and Family Therapy Program, Harold Abel School of Social & Behavioral Sciences, Capella University; Ruth Gottfried, School of Social Work, Georgia State University; Vanessa Emery, Institute on Urban Health Research & Practice, Bouvé College of Health Sciences, Northeastern University; Brian E. Bride, School of Social Work, Georgia State University

We acknowledge the funding provided to Beth E. Molnar for the Vicarious Trauma Toolkit project, Office for Victims of Crime, from the Department of Justice (Grant VF-GX-K011). Ruth Gottfried also acknowledges her postdoctoral fellowship from the Haruv Institute in Jerusalem, Israel.

Correspondence concerning this article should be addressed to Beth E. Molnar, Institute on Urban Health Research and Practice, Northeastern University, 360 Huntington Avenue, Mail Stop 314 INV, Boston, MA 02115. E-mail: b.molnar@northeastern.edu

Professionals working in the fields of trauma, victim assistance, mental health, law enforcement, fire response, emergency medical services, and other professions are exposed to traumatic events on a regular basis; in some cases, workers are exposed every day. These exposures can include both mass casualty events such as the 2012 Boston Marathon bombings and the September 11, 2001 terrorist attacks, or chronic exposure to ongoing incidents of sexual assaults, intimate partner violence, child maltreatment, homicides, and suicides, among others. First responders and other professionals bear witness to traumatic experiences and damaging, cruel treatment experienced by others, as one author put it, “shattering assumptions of invulnerability” (Janoff-Bulman, 1992). What she is referring to here is the transformation of a person’s world view from one that the world is “consistently benevolent and meaningful” to a realization that malevolent, hostile events happen as exemplified by those who have experienced trauma. While this is a regular occupational challenge for many professions, a new public health approach is needed to prevent and mitigate the negative impacts of these exposures in the workplace.

Taking a public health approach to preventing negative impacts on professionals exposed to vicarious or secondary trauma requires four steps: (a) defining the problem including measuring the scope or prevalence, (b) identifying risk and protective factors for negative outcomes, (c) developing interventions and policies, and (d) monitoring and evaluating interventions and policies over time.

Previously, the professional fields where vicarious or secondary trauma is likely to occur have been more reactive than prevention oriented, as much of the existing research base focuses on the aftermath of negative reactions to the exposure to the trauma of others.

At present, the fields are poised to move beyond an expectation of automatic resilience for workers, defined as an assumption that workers possess strengths to overcome stress or crisis, either on their own or by seeking out the appropriate resources. Instead the fields are moving toward social norms that obligate organizations to recognize the inevitability of vicarious/secondary exposure to trauma in these professions, and to provide resources proactively to prevent professionals from having deleterious effects. To make these changes, a rigorous scientific base in multiple areas must be developed. The purpose of this article is to outline a research agenda for moving each of these public health steps forward, starting with the state of research evidence currently available as it applies to first responders and other professionals who provide services to trauma exposed populations. The proposed research agenda will build a scientific foundation for effective intervention and policy development to mitigate the consequences of vicarious/secondary trauma before they occur, in addition to continuing to build the evidence base for effective treatments.

VT refers to the exposure to the trauma experiences of others. Charles Figley (1995) declared that stress is a “normal and natural byproduct of working with traumatized people” (p. 573). It makes sense that listening to traumatic material (e.g., a case of severe war trauma, or a survivor’s detailed, harrowing account of political torture, or sexual assault, or investigating online child pornography) for 40 hours a week or longer could lead to acute distress for the listener/viewer. VT is an occupational challenge for the fields of victim services, emergency medical services, fire services, law enforcement and other professionals. It is also a challenge for the medical profession, but that research is beyond the scope of this article. Working with victims of violence and trauma has been shown to change the worldview of responders and can also put individuals and organizations at risk for a range of negative consequences, such as changing responders’ perception of safety and their ability to trust others (Bell, Kulkarni, & Dalton, 2003; Knight, 2013; McCann & Pearlman, 1990; Newell & MacNeil, 2010; Pearlman & Saakvitne, 1995; Vicarious Trauma Institute, 2015).

Vicarious traumatization is a term that some in the field use to refer to the impact of indirect trauma exposure (Canfield, 2005; McCann & Pearlman, 1990; Pearlman & Saakvitne, 1995). A *vicarious trauma-informed organization* recognizes these challenges and assumes the responsibility for proactively addressing the impact of vicarious trauma through policies, procedures, practices, and programs.

STS, synonymous (for purposes of this article) with vicarious traumatization, has been defined as a constellation of symptoms that may run parallel to those of posttraumatic stress disorder (PTSD), including symptoms of intrusion (Herman, 1992; McCann & Pearlman, 1990), avoidance, arousal (Cloitre et al., 2009; Courtois, 1988; Dutton & Rubinstein, 1995; Figley, 1995; McCann & Pearlman, 1990), and emotional numbing (Klarić, Kvesić, Mandić, Petrov, & Frančišković, 2013; Nelson-Gardell & Harris, 2003; Zimering, Munroe, & Gulliver, 2003). According to Smith Hatcher, Bride, Oh, Moultrie King, and Franklin Catrett (2011)

“STS is increasingly viewed as an occupational hazard of providing direct services to trauma survivors” (p. 210).

Compassion fatigue (CF) is another term used in the literature to describe negative impacts of trauma-focused work, especially among clinicians. Figley (1995) referred to it as when the work of clinicians suffers from the negative impact of trauma experienced by clients, to a point where they are no longer able to effectively help those seeking their services (Figley, 1995). A related positive phenomenon discussed in the field is *compassion satisfaction*, which is the sense of reward, efficacy, and competence one feels in one’s role as a helping professional (Sprang, Clark, & Whitt-Woosley, 2007; B. H. Stamm & Figley, 1996). The concept of *vicarious transformation* takes the concept of compassion satisfaction a step deeper. It acknowledges a positive transformation in one’s worldview and spirituality in response to helping others live through trauma (Sanders, Kirby, Tellegen, & Day, 2014). A visual depiction of VT, vicarious traumatization, STS, and related concepts are depicted in Figure 1.

Steps 1 and 2 of a Public Health Approach: Defining the Problem, Identifying Risk/Protective Factors

Defining the problem is the first step in taking a public health approach to addressing vicarious traumatization/STS/CF (VT/STS/CF) in the workplace. As consciousness around these issues continues to grow, researchers have begun to study predictors and correlates of traumatization among helping professionals (Smith Hatcher et al., 2011). This section first describes the instruments currently available for measuring VT/STS/CF, and follows with a presentation of the prevalence and risk/protective factor studies currently available involving first responders, victim services providers, and others.

Instruments for Measurement of VT/STS/CF

A widely used instrument in the field is the Secondary Traumatic Stress Scale (STSS), developed to specifically tap secondary trauma symptoms in helping professionals. The 17-item STSS contains three subscales (Intrusion, Avoidance, Arousal) and assesses the frequency of STS symptoms experienced by clinicians in the past 7 days using a 5-point, Likert-type response format, congruent with the *DSM-IV-TR* definition of PTSD (Bride, Robinson, Yegidis, & Figley, 2004). The STSS shows strong psychometric properties including high internal consistency reliability (.93 to .95 for the total scale; Kintzle, Yarvis, & Bride, (2013).), convergent and discriminant validity (Bride et al., 2004), factorial validity (Bride et al., 2004; Ting, Jacobson, Sanders, Bride, & Harrington, 2005), and multiple methods of scoring (Bride, Radey, & Figley, 2007).

The Compassion Fatigue Self-Test (CFST) was developed based on clinical experience and designed to assess both compassion fatigue and job burnout with two subscales (Compassion Fatigue and Burnout). It uses a 5-point Likert-type response scale producing scores ranging from *extremely low risk* to *extremely high risk* (Figley, 1995) Reported internal consistency estimates range from alphas of .86 to .94 (Figley, 1995; B. H. Stamm & Figley, 1996).

A revised version of the CFST includes positively worded questions about compassion satisfaction, making it a 66-item in-

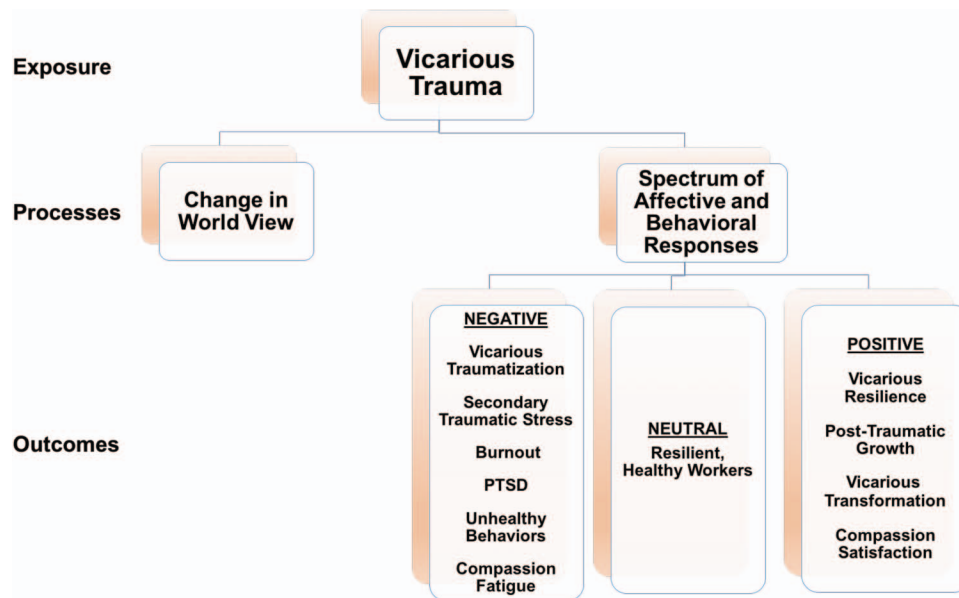


Figure 1. A conceptual model of vicarious trauma and its spectrum of impacts on workers.

strument (B. H. Stamm & Figley, 1996). Pilot work on this revised instrument shows ample evidence of internal consistency for each of the three sections: Compassion Satisfaction (.87), Burnout (.90), and Compassion Fatigue (.87; B. Stamm, 2002). Continued development of this version of the CFST resulted in a renamed instrument, the Professional Quality of Life Scale (ProQOL), discussed below.

Gentry, Baranowsky, and Dunning (2002) also reported using a different version of the CFST, which they call the Compassion Fatigue Scale—Revised (CFS-R). R. E. Adams, Boscarino, and Figley (2006) identified multiple underlying factors, calling into question the factor validity of the CFST, and made refinements to the instrument resulting in a revised instrument called the Compassion Fatigue-Short Scale (CF-Short Scale; which has good internal consistency and correlated with the longer 30-item CFS-R Scale ($r = .83, p < .001$; Beck, 2011).

The 30-item Professional Quality of Life Scale (ProQOL-V) includes three subscales: Compassion Satisfaction, Burnout, and Compassion Fatigue (B. Stamm, 2009) where respondents indicate how frequently they have experienced that item in the past 30 days. This instrument shows good alpha reliability scores on each subscale (Compassion Satisfaction, 0.88; Burnout, 0.75; and Trauma/Compassion Fatigue, 0.81; Steinberg, Brymer, Decker, & Pynoos, 2004). The ProQOL is the most commonly used scale for determining a helper’s quality of life, and has been cited in over 200 published papers (Perkins & Sprang, 2013).

The Trauma and Attachment Belief Scale (TABS; Pearlman, 2003), previously known as the Traumatic Stress Institute Belief Scale (Pearlman, 1996), is a measure based in constructivist self-development theory. The 84-item instrument assesses the long-term impact of trauma on beliefs about self, others, and relationships (Pearlman, 2003). It is administered through self-report format for children ages nine and up, and “assesses beliefs about self and others that are related to five needs commonly affected by traumatic experience: safety, trust, self-esteem, intimacy, and con-

trol” (Pearlman, 2003, p. 3). Sample items on the TABS include “I can keep myself safe,” and “People don’t keep their promises.” Respondents rate each item on a 6-point scale (1 = *Disagree Strongly* to 6 = *Agree Strongly*). Higher scores indicate more disturbances of beliefs. Though the TABS was designed for use with persons who directly experienced traumatic events, it has also been used to assess vicarious traumatization. Overall internal consistency reliability (Cronbach’s alpha) for the TABS has been reported at .98 (Pearlman, 1996), with subscale reliabilities ranging by study (Jenkins & Baird, 2002; Roth, Newman, Pelcovitz, van der Kolk, & Mandel, 1997) and a median internal consistency estimate of .79 (Pearlman, 2003).

Regarding construct validity, Dutton, Burghardt, Perrin, Chrestman, and Halle (as cited in Pearlman, 2003, p. 40) found a correlation between TABS scores and measures of PTSD for female victims of abuse. The construct validity of the TABS was supported through tests of convergent and discriminant validity although other investigators have found less support for convergent, discriminant, and factor validity of the TABS (K. B. Adams, Matto, & Harrington, 2001; Matto, Adams, & Harrington, 2000).

The Vicarious Resilience Scale (VRS) is a tool to measure the ways in which helping professionals can be positively influenced by exposure to the resilience displayed by their clients (Engstrom, Hernández, & Gangsei, 2008; Hernández, Gangsei, & Engstrom, 2007; Hernandez-Wolfe, Killian, Engstrom, & Gangsei, 2014). While helping professionals may be subject to cumulative effects of working with traumatized clients through STS or VT, they may also “experience personal and professional growth by being witness to and inspired by their clients’ processes of resilience” and recovery (Hernandez-Wolfe et al., 2014, p. 5). The construct of vicarious resilience emerged from observation, was built on grounded theory and has been articulated through resilience and vicarious learning theory (Bandura, 1986; Luthar, 2003; 2006; Walsh, 2006).

Given vicarious resilience represents a positive phenomenon, a study was initiated to develop a measure of the construct as a potential resource for clinical training and supervision. This tool, the VRS, is in the process of development and validation. Forty-eight items tapping professional's increased resilience, client-based inspiration, self-care practices, and consciousness around the importance of power and privilege in therapeutic work were written and revised based on the feedback of experts on traumatic stress and resilience in the fields of psychology and family therapy. Following factor and reliability analyses, Killian, Hernandez-Wolfe, Engstrom, and Gangsei (2017) found the shortened 27-item VRS possessed a normal-like distribution and seven dimensions and subscales: (a) client-inspired hope, (b) changes in life goals/perspective, (c) increased recognition of spirituality as a client resource, (d) increased resourcefulness, (e) increased self-awareness and self-care practices, (f) increased consciousness about social location and power, and (g) increased capacity for remaining present while listening to trauma narratives. The study also found that the total VRS, as hypothesized, correlated with posttraumatic growth, compassion satisfaction and work morale. The VRS did not correlate with compassion fatigue or burnout, suggesting VR is not merely "the opposite of" these constructs, but instead a unique construct.

Prevalence of VT/STS/CF in Helping Professions

This section incorporates the work of authors who have published comprehensive reviews and meta-analyses that address the prevalence of VT/STS/CF, and adds studies that have been published more recently. This article is working with the definition that VT/STS/CF is an occupational hazard across *all* the helping professions described. The research base and, ultimately, prevention efforts, are focused on the presence or absence of negative or positive impacts of doing trauma-focused work, including compassion satisfaction and vicarious resilience in newer literature.

There are notable challenges to capturing the prevalence of VT/STS/CF, and cross-study comparisons highlight several of the methodological issues. For example, there is wide variability across studies as to how the constructs of VT/STS/CF are defined and operationalized, and conflicting definitions make comparison of these conditions difficult. Differences in research methodologies (e.g., study designs, measurement instruments, response rates, sample sizes, data analysis, and study limitations), variations associated with the studied work-related trauma (e.g., type, severity, duration, repetition and length of time elapsed since exposure), and dissimilarities in data presentation need likewise to be taken into consideration when assessing the prevalence of vicarious traumatization across different professional groups. Noteworthy for the field is that the diagnostic criteria for PTSD have changed over time in the *Diagnostic and Statistical Manual of Mental Disorders (DSM)*, first incorporating indirect trauma (also synonymous with VT) as a qualifying traumatic event in the *Diagnostic and Statistical Manual of Mental Disorders* (5th ed.; *DSM-5*; American Psychological Association, 2013; May & Wisco, 2016). A smaller literature on risk and protective factors is described within this section as well.

Prevalence Among First Responders

The prevalence of VT/STS/CF among first responders, including fire services, law enforcement, emergency medical services, and other professions related to personnel first on an emergency rescue scene, has thus far been measured primarily using PTSD instruments to estimate the prevalence of either posttraumatic symptoms or full PTSD diagnoses. Currently there are no studies that clearly delineate the effects of direct trauma from those of secondary trauma. As such, these estimates likely reflect the mental health effects of not only first responders' exposure to duty-related and personal primary trauma but their work-related secondary exposure to trauma as well (Lawrence, 2017). In the future, separate screening tools for STS/VT/CF will be useful for understanding the separate and combined effects of STS/VT/CF and primary trauma.

There are studies that have been done on the prevalence of PTSD among first responders that likely include a mix of primary and secondary trauma effects though they are not delineated that way. For example, a systematic review and meta-analysis conducted by W. Berger et al. (2012) estimated the pooled current international probable prevalence rate of PTSD in rescue workers as a group. A total of 28 studies over a 45-year period were selected, reporting on 40 samples with 20,424 rescuers from 14 countries and all continents. Selected studies encompassed such occupational groups as ambulance personnel, canine handlers, firefighters, and policemen who took part in disaster rescue operations; less studied professionals, such as body handlers and military medical workers were not included. The estimated pooled worldwide PTSD prevalence among these rescuers was reported as 10% for full PTSD. As discussed by the authors, the 10% rate is most likely an underestimate, as first responders may limit their disclosures due to fear of personal and/or professional consequences of suffering from PTSD, a mental illness to which stigma is attached. Of particular note, W. Berger and colleagues (2012) did not find a significant difference in PTSD prevalence between rescue workers investigated after exposure to a major disaster and those assessed in their daily occupational routines. In comparison to this figure of 10% among global rescuers, an estimate of diagnosable PTSD among general developed country populations is 4.4% (Kessler et al., 2011).

Again not distinguishing between primary and secondary exposure to trauma, Thormar et al. (2010) reported higher rates (24–46%), in volunteer rescue workers, from nine selected studies with cohorts ranging from 24 to 3,055 participants (Thormar et al., 2010). Voluntary rescue workers were found to suffer from symptoms of PTSD more frequently than their professional counterparts as reported by Haraldsdóttir et al. (2014) and Zhang et al. (2016). Rates reported in the latter study by Zhang and colleagues were cross-cultural (i.e., 176 Oklahoma City professional bombing rescue workers (10%), 52 Nairobi volunteer bombing rescue workers (22%), and 105 Nairobi civilian bombing survivors (36%), assessed via the Diagnostic Interview Schedule (Zhang et al., 2016). Relatedly, associations between traumatic exposure and PTSD symptoms were shown to be weaker in responders as compared with civilians, in a study by Liu, Tarigan, Bromet, and Kim (2014). First responders to the 2011 Norway twin terrorist attacks scored low on the PTSD Checklist-Specific (1% above 50, 3% above 35)

showing minimal symptomology (Bogstrand, Skogstad, & Ekeberg, 2016).

In a review of PTSD treatment studies among first responders, Haugen, Evces, and Weiss (2012) used national data on employment to identify approximately 1.5 million United States workers in first responder occupations. Applying W. Berger et al.'s (2012) estimate of 10% among rescue workers, and the estimated relative proportion (77%) between partial and full PTSD by Weiss et al. (1992), they estimated the total number of United States first responders potentially needing treatment for PTSD to be 250,000. In addition to the previously mentioned occupational groups, Haugen et al.'s (2012) estimate incorporated sheriff patrol officers, transit and railroad police, forest fire inspectors and prevention specialists, detectives and criminal investigators, as well as forensic science technicians. Again, this body of work does not separate out the effects of direct and indirect trauma but all are professions where both occupational challenges exist.

Wilson (2015), focusing on PTSD among first responders in the aftermath of human-made mass violence, reported a prevalence range of 1.3% to 22% for probable PTSD across 20 studies (cohorts ranged from sample sizes of 41 to 11,701), 15 of which focused on first responders following the World Trade Center (WTC) terrorist attacks (Wilson, 2015). The majority of rates reviewed by Wilson were consistent with the average 10% prevalence reported by W. Berger et al. (2012). Relatedly, a meta-analysis by Liu et al. (2014), focusing on probable PTSD associated with WTC exposure, demonstrated a prevalence range of 5.4% to 29.2% (Liu et al., 2014). Included were 10 studies, comprising cohorts ranging from 3,271 to 20,294, focusing on first responders and/or civilians, at time frames ranging from a few months to 9 years postdisaster. All but one of the included studies incorporated the PTSD Checklist-Civilian (PCL) measure.

Additional results from studies of WTC rescuers, based on various PCL versions utilized in longitudinal studies, are cited below. Maslow et al. (2015), studying 16,488 WTC rescue and recovery professional and volunteer workers, reported PTSD prevalence over an 8–9 year postdisaster period ranging from 4.0% (most severe) to 53.3% (least severe; Maslow et al., 2015). Assessing the relationship between human remains exposure and persistent probable PTSD 10–11 years after the WTC disaster, Fairclough et al. (2015) reported an overall prevalence of 7.4% in a sample of 1,592 cleanup and recovery workers (i.e., sanitation workers, firefighters, and police; Fairclough et al., 2015). By comparison, in a 12-year longitudinal study by Yip et al. (2015) focusing on 2,281 fire department emergency medical service workers (i.e., paramedics and emergency medical technicians), a probable PTSD prevalence of 7% was found. Emergency medical service workers who arrived earliest at the WTC site demonstrated nearly seven times the risk for probable PTSD—as compared with those who never worked at the disaster site (Yip et al., 2015). PTSD findings 11–13 years post-WTC have also been studied. Bromet et al. (2016), examining 3,231 responders, of whom the majority (70.4%) worked in law enforcement, reported the following: 9.7% current, 7.9% remitted, and 5.9% partial probable PTSD.

There are a few examples of research studies where STS-specific instruments have been used in crime investigators. STS has been studied in Internet Crimes Against Children (ICAC) personnel, commonly police officers and federal agents. Their job is finding online victims and perpetrators of child pornography and

other violent crimes committed against children. Prevalence of high STS symptoms in this population has been shown to range from 18–33%; Bourke and Craun (2014) found 25% of the 600 ICAC respondents reported symptoms that met the criteria for high to severe STS in a self-reported survey (Bourke & Craun, 2014; Cornille & Meyers, 1999). Perez, Jones, Englert, and Sachau (2010) found 18% high and 18% moderate symptoms in another survey of 33 child abuse investigators using the STSS. Most recently, Tehrani (2016) found prevalence varied according to the online child abuse investigator's gender, extroversion, and neuroticism.

Though the term “first responders” traditionally refers to the aforementioned professional groups, a broader description of responders may likewise include postdisaster and humanitarian relief workers and researchers who also experience VT/STS/CF and may have negative reactions (e.g., Connorton, Perry, Hemenway, & Miller, 2012; Dominey-Howes, 2015; Flannelly, Roberts, & Weaver, 2005; McLennan, Evans, Cowlshaw, Pamment, & Wright, 2016; Pearlman, 2014; Wee & Myers, 2002). Another notable group exposed to vicarious trauma are sexual assault nurse examiners (or SANE nurses) who collect forensic evidence and provide specialized care to survivors of sexual assault presenting in medical settings; a recent study recruiting subjects from two professional nursing organizations showed SANE nurses had significantly higher levels of vicarious traumatization than other nurses working in women's health. When personal trauma was taken into account statistically, SANE nurses without personal trauma had similar VT scores to non-SANE nurses with personal trauma (Raunick, Lindell, Morris, & Backman, 2015).

Prevalence Among Social Work/Mental Health/Victim Services Providers

Prevalence of STS has been studied more extensively among professionals who work with survivors of trauma in therapeutic professions. These professions include rape crisis and domestic violence counselors and volunteers, social workers, mental health professionals (some of whom work within first responder agencies), victim services organizations such as child or adult protective services, child advocacy center personnel, and victim advocates working within the legal system, among others. As in the previous section, we focus on review studies wherever possible.

In a meta-analysis of 38 studies by Hensel, Ruiz, Finney, and Dewa (2015), 17 risk factors for STS among professionals who do therapeutic work with trauma victims were identified across studies. These risk factors included caseload volume, caseload frequency, caseload ratio, and having a personal trauma history. Among the studies they reviewed, prevalence of STS was reported as 34% among child protective service workers (Bride, Jones, & Macmaster, 2007) and 15.2% among licensed social workers using the STSS (Bride, 2007). More than half (55%) of Bride's sample likewise met at least one of the core criteria for PTSD. Relatedly, in a comparable study by Choi (2011), also assessed by the STSS, findings indicated a 21% STS prevalence in a national sample of social workers treating survivors of family or sexual violence ($N = 154$; Choi, 2011). About 65% of Choi's sample also met at least one of the core PTSD criteria. Participants in a study of mental health therapists (i.e., 320 licensed mental health professionals assessed via the STSS) reported comparable STS symptoms to Bride (2007) and Choi (2011), with a mean score of 32.1 ($SD =$

10.0; Bride, Jones, et al., 2007; Choi, 2011; Robinson-Keilig, 2014). A 19.2% STS prevalence was also reported for mental health providers working with military patients ($N = 224$; STSS assessment; Cieslak et al., 2013). Hensel et al. (2015), noted that there may be differences between occupational groups with respect to indirect trauma severity, citing Sprang, Craig, and Clark's (2011) study whereby child welfare workers were shown to be more severely affected by compassion fatigue (i.e., assessed via the ProQOL measure; $N = 577$) compared with all other types of behavioral health professionals examined. Recently Bogstrand et al. (2016) found 40.9% of licensed clinical social workers met criteria for PTSD ($N = 256$; STSS assessment; Caringi et al., 2016). Conrad and Kellar-Gunther (2006) found the prevalence of CF as high as 50% in a group of 363 child protection workers using the Compassion Satisfaction/Fatigue Self-Test (Conrad & Kellar-Gunther, 2006).

This finding is similar to that of W. Berger et al. (2012) discussed above, who reported that ambulance personnel showed higher estimated PTSD prevalence rates compared with firefighters and police officers (W. Berger et al., 2012). Hensel et al. (2015) likewise suggest that mental health professionals, similar to first responders, may be reluctant to disclose personal details due to concerns about stigma, confidentiality, and job security (Hensel et al., 2015).

Individual studies focusing on the impacts of vicarious trauma among other related professional and/or volunteer groups, listed in order of publication year, include: Kiyimba and O'Reilly (2016) for qualitative transcriptionists; Coleman, Delahanty, Schwartz, Murani, and Brondolo (2016) for medical examiner office employees; Becker and McCrillis (2015) for health sciences librarians; Lusk and Terrazas (2015) for para-professionals working with refugees; Mehus and Becher (2016) for spoken-language interpreters; Ewer, Teesson, Sannibale, Roche, and Mills (2015) for alcohol and other drug workers in Australia; Dasan, Gohil, Cornelius, and Taylor (2015) among emergency medical consultants; Fisackerly, Sira, Desai, and McCammon (2016) among certified child life specialists; Mishori, Mujawar, and Ravi (2014) for asylum evaluators; Johnson, Bertschinger, Snell, and Wilson (2014) for military psychologists; Furlonger, and Taylor (2013) for telephone and online counselors, Želeskov-Đorić, Hedrih, and Đorić (2012) for psychotherapists; Levin et al. (2011) for attorneys and their administrative support staff; Negash and Sahin (2011) for marriage and family therapists; Robertson, Davies, and Nettleingham (2009) for jurors; and Figley and Roop (2006) for animal caregivers.

Steps 3 and 4: Development/Monitoring of Interventions and Policies

Trauma treatment research studies point to a range of interventions, including cognitive-behavioral treatments (Bryant, Sackville, Dang, Moulds, & Guthrie, 1999), eye movement desensitization and reprocessing (EMDR; Chen et al., 2014; Shapiro & Maxfield, 2002), critical incident stress debriefing (CISD; Pack, 2013), and psychological first aid (PFA; Everly, Barnett, & Links, 2012), as efficacious in reducing the incidence of PTSD in those who are experiencing subthreshold symptoms of traumatic stress following *direct exposure*. Several studies found these approaches superior in reducing trauma symptoms compared with informal supportive services (e.g., Bryant et al., 1999). However, the inter-

ventions most frequently recommended to address the effects of indirect exposure, or VT/STS/CF among victim services providers and first responders, fall under the category of health promotion and wellness. These include supportive services, training as treatment, and psychoeducation among others. A review of treatment research studies for VT/STS/CF follows here.

A literature review by Bercier and Maynard (2015) demonstrates the shortage of trauma-informed STS interventions. Their systematic literature review examined interventions for reducing the negative effects of STS for mental health professionals; after reviewing over 4,000 citations and 159 full-text reports, no studies were found to meet inclusion criteria. According to the authors:

The empirical research related to CF, STS, and VT seems to be indicative of an emerging field as the research tends to focus on the nature, prevalence, measurement, and etiology of CF, STS, and VT rather than effects of interventions. (Bercier & Maynard, 2015, p. 84)

The types of interventions currently available are discussed in this section, including the limited evidence of their benefits and limitations on VT/STS/CF.

Health Promotion and Wellness

Supportive, self-directed, and nontherapeutic approaches are by far the most utilized methods of addressing STS from a prevention perspective, and for those who are already symptomatic. Health promotion or wellness strategies (i.e., self-care approaches) such as yoga, meditation, relaxation, achieving a work-life balance, physical activity, proper nutrition, and so forth are endorsed by some authors as the most effective means of guarding against the development of STS or addressing those who are symptomatic (Coetzee & Klopper, 2010; Dane, 2000; Hesse, 2002; Iliffe & Steed, 2000; Neville & Cole, 2013; Zadeh, Gamba, Hudson, & Wiener, 2012).

Many of the current approaches to addressing STS in clinical therapeutic settings involve the use of self-care strategies to protect the clinician and counteract the potential negative impact of empathic engagement with a highly symptomatic trauma client (Burke & Van Dermoot Lipsky, 2009; Figley, 2002; Mathieu, 2012; Pearlman & Saakvitne, 1995). This perspective implicitly espouses that the provision of trauma treatment is unavoidably depleting, and that recovery must occur during periods of nonexposure. There is little in the practice literature that specifies how, or if, the empathic encounter could be modified to attenuate these effects and still offer maximum therapeutic benefit to the client.

Bober and Regehr (2006) used a cross-sectional design to investigate if the most commonly recommended methods for preventing STS were associated with lower levels of distress. In this sample ($N = 259$) they found that despite high reported beliefs that leisure activities, self-care practices, and supervision are beneficial, this did not translate into time spent engaging in these activities. Notably, they also found no evidence that time spent engaging in these coping strategies impacted trauma scores. Corroborating these findings, Killian (2008) found that only one personal resource, emotional self-awareness, ameliorated symptoms of compassion fatigue in family therapists ($N = 104$) working with trauma survivors (Killian, 2008).

Mindfulness-based stress reduction (MBSR; Kabat-Zinn, 2003) is a specific type of self-care approach that has been operational-

ized into an evidence-based, protocol driven intervention to address a variety of conditions including chronic fatigue, pain associated with cancer, anxiety disorders, depression, and daily stress (Grossman, Niemann, Schmidt, & Walach, 2004; Kabat-Zinn, 2003). It is increasingly recommended for preventing and treating STS (Goodman & Schorling, 2012; Thieleman & Cacciato, 2014).

Limited research on MBSR includes a survey administered to 41 trauma workers (paid and volunteer) that found an inverse correlation between mindful attention awareness (a component of mindfulness) and reported levels of STS (Thieleman & Cacciato, 2014). A meta-analysis of studies on MBSR, including seven randomized controlled trials (RCTs), revealed no investigations of STS as an outcome, but revealed a moderate effect size when considering its impact on overall physical and mental health (Grossman et al., 2004). More recently, studies have found support for MBSR for women with PTSD (Dutton, Bermudez, Matas, Majid, & Myers, 2013), combat veterans (King et al., 2013), and child abuse survivors (Kimbrough, Magyari, Langenberg, Chesney, & Berman, 2010). In a rare use of a longitudinal study design, Williams, Ciarrochi, and Deane (2010) followed 60 police department recruits in Australia for 1 year and found a correlation between identifying feelings (using mindfulness, emotional awareness, and resiliency) and depression, and between lower mindfulness and depression.

Miller and Sprang (2016) have offered a model of clinical practice, components for enhancing clinician experience and reducing trauma (CE-CERT), that proposes concrete skills that the clinician can use during treatment, to maintain their own emotional regulation, and metabolize reactions to indirect trauma exposure in real time. These skills draw upon the core elements of evidence-based trauma treatment— affective and cognitive regulation, construction of a narrative, and attending to parasympathetic recovery—along with experiential engagement and reducing emotional labor (Miller & Sprang, 2016). The Resilience Alliance, a product of the New York City Administration for Children's Services and New York University Children's Trauma Institute, is another example of organizational leadership to address STS and uses health promotion and wellness, professional skills training, and psychoeducation. The program is structured around twelve 60–90 min training modules that teach child welfare workers about STS, self-efficacy, optimism, self-care, and workplace dynamics through discussion, goal-setting, and reflection activities. Like the CE-CERT, these practice models employ evidence-based measures, but remain largely untested and have primary applicability to those working in clinical therapeutic settings.

The accelerated recovery program (ARP) was developed by Gentry et al. (2002) as a five-session model for treating STS that involves building resiliency skills, self-management and self-care, connection with others, skills acquisition or gaining a sense of professional mastery, and internal and external conflict resolution. A criticism of this program is that a pathway for addressing primary traumatic stress symptoms appears to fall outside the intervention model. Furthermore, no published study results were located that provide the details of any investigations into the effectiveness or efficacy of ARP; only a mention that pre- and posttest ProQOL Scale scores improved after ARP in a book published by the ARP team (Gentry et al., 2002).

Professional Skills Training

Professional skills training as a form of prevention and treatment for STS is a strategy that is supported by correlational studies suggesting that individuals who received instruction in evidence-based practices for treating traumatic stress conditions had lower levels of STS (Sprang et al., 2007). In addition, research by Prati, Pietrantonio, and Cicognani (2010) found that increased self-efficacy moderates the relationship between stress appraisal and professional quality of life (including STS). Ortlepp and Friedman (2002) noted that the stronger lay counselor's perceptions that they possessed the skills needed to do their job, the lower their STS symptoms. A study of mental health professionals working in communities near the Gaza Strip, with populations exposed to rocket attacks, compared risk factors for PTSD symptoms and vicarious traumatization; both were correlated with lower professional self-efficacy and VT was further correlated with fewer years of education (Finklestein, Stein, Greene, Bronstein, & Solomon, 2015). Although these studies are only reporting correlates of STS, the findings are consistent with the basic tenets of social cognitive theory, which posits that individuals with high self-efficacy are less affected by stressful events because of their perceived ability to master their personal functioning and environmental demands (Bandura, 1997).

Psychoeducation

In a rare RCT, R. Berger and Gelkopf (2011) combined the strategy of professional skill development around service delivery with increased knowledge and skills to identify and manage one's own STS responses. This intervention provided 90 pediatric nurses in war- and terror-affected areas with 12 weeks of psychoeducation regarding identifying trauma in infants and young children, how to use trauma-specific training tools, stress management techniques that could be used with the children and their parents, as well as self-maintenance tools, self-regulation strategies, and ways to enhance peer support and team cohesiveness. In this RCT, the intervention group improved on STS symptoms at posttest compared with the wait-list control group. Furthermore, decreases in STS scores covaried with improvement on professional self-efficacy assessments, lending further support for the importance of self-efficacy in reducing STS.

Gentry, Baggerly, and Baranowsky (2004) used the concept of "training as treatment" to improve an individual's understanding and competency to identify and manage their own STS (Gentry et al., 2004). This module focuses on self-regulation, intentionality, perceptual maturation/self-validation, connection, and self-care. An effectiveness study of 73 emergency nurses found statistically significant decreases in STS scores at posttest, though the study is limited by its nonrandomized design.

Critical Incident Stress Management (CISM)

CISM is an approach used by multiple disciplines that seeks to prevent posttraumatic stress symptoms in the aftermath of a critical event (Mitchell & Everly, 2000). Some organizations embed their CISM program within employee assistance programs. A major component of CISM is the idea of holding psychological debriefings between peers after an event, referred to as CISD. This is

typically a group intervention in use since the 1970s for people in the same professional group, or with similar exposure to trauma, to process their experiences using a specific seven-step psychotherapy- and education-based model (Adler et al., 2008; Tuckey & Scott, 2014). Most studies have focused on the use of CISM/CISD for primary, not secondary, trauma exposure (Adler et al., 2008). The evidence base for both CISM and CISD is mixed due to several factors including methodological inconsistencies, negative or mixed findings, and a shortage of RCTs (Adler et al., 2008; Pack, 2013; Tuckey & Scott, 2014).

A 2009 literature review by Pender and Prichard (2009) found a shortage of empirical evidence to support particular CISD protocols; however, most positive studies did support the use of CISD for group interventions for homogenous groups (i.e., occupational groups) with similar exposure to trauma (Pender & Prichard, 2009). According to the review, “Hobfoll et al.’s (2007) analysis of essential elements in post-trauma work support the conclusion that recovery is enhanced when people trust themselves to handle what happened and then trust those around them to do the same” (Pender & Prichard, 2009, p. 188). However, CISD is not recommended as an intervention to prevent long-term adverse psychological outcomes by authors of several studies (Gray, Maguen, & Litz, 2004; Mayou, Ehlers, & Hobbs, 2000; McNally, Bryant, & Ehlers, 2003; Rose, Bisson, & Wessely, 2003; Ruzek et al., 2007).

First implemented in 1981 after a police-involved shooting in Los Angeles, *peer assistance programs* are commonly found in first responder organizations, sometimes as an element of a CISM plan. They are based on the premise that peers are in the best position to help others in their organization recognize and intervene regarding work-related stress (Grauwiler, Barocas, & Mills, 2008). Para-professionals within organizations are trained to offer immediate and ongoing peer support after a stressful situation with the belief that if left unaddressed, the stress may lead to serious substance, mental health or other problems. It is also thought that peer support programs help ameliorate the stigma associated with help-seeking among law enforcement officers and other first responders (Greenstone, 2000; Woody, 2005).

A literature review of the research on peer support and peer assistance programs for police and other first responders published between 1997 and 2007 found only three published studies focused on workplace peer assistance and support for police, and none of them evaluated efficacy of the programs (Grauwiler et al., 2008). Similar to the research on CISM, efficacy studies are made more difficult by inconsistent program designs. All three studies found that peer support services were reported by utilizers of the program as reducing the stigma associated with seeking professional help. In one of them Stephens and Long (2000) found an association between perceptions of social support and lower work-related traumatic stress among police officers in New Zealand.

PFA (Ruzek et al., 2007) dates back to the mid-20th century (Thorne, 1952) but has recently been used more frequently as a method of reducing postexposure distress and supporting adaptive functioning, especially since the Institute of Medicine recommended it for postdisaster contexts in 2003 (Institute of Medicine, 2003). Guidelines and trainings are now available, some of which are empirically based on cognitive/affective theories such as the Johns Hopkins PFA model (Everly et al., 2012). It does not require mandatory processing of trauma material in a group setting, which fits with some of the mixed findings about group debriefing (Pack,

2013). A review of the literature published from 1990–2010 focused on PFA in the aftermath of a disaster or mass casualty event found no evidence yet for its efficacy but wide support by expert opinion (Fox et al., 2012). Studies of its efficacy for VT/STS/CF were not found to date.

Discussion and Recommendations for Further Study

Increased interest in the impact of indirect trauma exposure in the workplace has captured the attention of researchers, clinicians, organizational leaders, and policymakers across a variety of service systems. In fact, the occupational hazards of delivering services to a traumatized and violence exposed population has become a public health issue threatening workforce stability. Attempts to document the prevalence of this phenomenon in contemporary work life are still plagued by stigma attached to self-disclosure of professional distress, and a lack of conceptual clarity between related, overlapping, but perhaps distinct terms that have been used to describe the experience of working with trauma-exposed and victimized populations. Responses to the incidence of indirect trauma exposure have spawned the application of interventions that have grown primarily out of the health promotion and wellness literature, despite the fact that vicarious traumatization or STS is at its core a trauma response that may be best addressed using a wide range of available traumatization prevention and treatment strategies. The issue also remains that repeated ongoing exposure to indirect trauma, as a natural course of the professional’s daily work life, may require modification of existing direct trauma treatments. Returning to the public health approach, we recommend the following research agenda for advancing each of the steps of addressing vicarious traumatization for the fields of first responders and victim service providers.

Step 1: Understanding the Problem

We described a number of instruments that have been developed and tested for psychometric properties, but at present a validated instrument that gets at the full range of VT/STS/CF symptoms is not available in one measure. This is due to a lack of conceptual clarity regarding the underlying constructs represented by these terms. For example, some professionals use compassion fatigue as synonymous to STS, while others use the term to describe a broad range of symptoms that include STS as well as burnout. Future research should focus on empirically disentangling and operationalizing the concepts of vicarious traumatization/STS from compassion fatigue so that assessment tools can be tailored to be sensitive to these distinctions. With distinct naming conventions, an appropriate theoretical framework, epidemiological research, diagnostic criteria and interventions can be applied.

Second, the prevalence of VT/STS/CF must be measured using consistent screening tools and population-based sampling frames rather than treatment or convenience samples. For example, there is currently difficulty estimating the extent that mental health clinicians are affected. Elwood, Mott, Lohr, and Galovski (2011), in their review of 41 studies focusing on indirect trauma primarily in mental health clinicians who provide trauma-focused treatment, concluded that there was no consensus regarding VT prevalence among professional caregivers. See also Kadambi and Ennis’s (2004) review for a discussion of difficulties in the operational-

ization and measurement of VT, as well as an earlier review by Sabin-Farrell and Turpin (2003) for a discussion of the lack of consistent evidence for VT in the field of mental health. The varying levels of reported severity in STS and CF rates among clinicians exposed to traumatic experiences through therapy provision are likewise emphasized by Kadambi and Ennis (2004), exemplifying the frequency with which nonclinical ranges of indirect traumatization have been reported (Kadambi & Ennis, 2004).

One solution is to have researchers determine a clinically meaningful threshold/subthreshold of distress on the tool developed as recommended above, then conduct prevalence studies with that tool. The literature on STS and related conditions documents symptom expression that can be characterized as mild to extreme. Furthermore, there is an implicit assumption in some interventions that STS can be prevented, while other approaches focus on addressing existing symptoms. The issue of whether or not the terminology of STS or VT is representative of a continuum of distress responses that culminate in a disorder and if certain interventions can prevent even mild symptoms from occurring is an empirical question that has yet to be answered.

Finally, STS must be distinguished from primary traumatic stress for first responder populations including fire services, law enforcement, and emergency medical services, in order to understand the separate and combined effects of primary and secondary trauma and advance toward appropriate interventions that are feasible and efficacious for particular types of organizational settings.

Step 2: Identification of Risk and Protective Factors for Having Negative or Positive Reactions to Vicarious Trauma

We found there is very little research that has been conducted to identify salient risk and protective factors. This is a key step in addressing a public health problem, because it provides ideas for both the etiology of these reactions and for the development of preventive interventions. Certain fields have made progress toward identifying risk and protective factors, although they have been determined using observational studies. For example, multiple studies among online child abuse investigators show that social support and supervisory support are correlated with fewer symptoms of STS, while increased exposure is correlated with greater symptoms (Bourke & Craun, 2014). Risk factors like caseload volume and frequency, caseload ratio, having a personal trauma history, and 13 other risk factors for STS were identified by Hensel et al. (2015), as well as among child abuse professionals (Hensel et al., 2015). Further studies are needed to identify risk and protective factors for the wide range of additional occupations at risk for VT/STS/CF.

Steps 3 and 4: Intervention Development and Monitoring/Evaluation

While there are promising interventions for improvement in vicarious traumatization symptoms from the fields discussed above, there is need for rigorous study designs to demonstrate the efficacy and effectiveness of these interventions. Much of our review of the research has shown that the benefits to preventing or

reducing STS have not been adequately established for the interventions identified (Drewnowski & Evans, 2001; Duren, Cress, & McCully, 2008; Gordon et al., 2008; Penedo & Dahn, 2005; Pullen et al., 2008; Ross & Thomas, 2010; Stuck, Meyer, & Rigotti, 2003; Zeisel, 2009). The differential impact of self-care on burnout and STS as noted in the Ringenbach (2009) study seems to support the notion that health and wellness promotion may not be as effective at reducing trauma-related symptoms as they are at ameliorating other types of organizational stress symptoms. More comparative research such as this study is needed.

Similarly, as the research findings on the efficacy of CISM/CISD have been mixed, additional research must be done with rigor to be more definitive, especially given the very widespread use among first responder organizations. Research to show the efficacy of peer support programs is needed for the same reason.

One of the unique challenges across treatment types is that individually tailored interventions lack consistency in how approaches are delivered or applied. This creates challenges for researchers who are trying to investigate the efficacy and utility of essential components. Articulation of the specifics of intervention delivery is important so that studies may be replicated. The other issue that remains is that repeated ongoing exposure to indirect trauma, as a natural course of the professional's daily work life, may require modification of existing trauma treatments that assume or require that the discrete exposure event(s) is not ongoing. The efficacy of trauma treatments tested exclusively with those exposed to direct trauma, including cognitive-behavioral therapy and EMDR and others, should have their efficacy/effectiveness with vicarious traumatization studied and established and be adapted as necessary based on these results.

Two important themes emerged regarding barriers to addressing Steps 3 and 4. The first is the subject of stigma, which came up in many contexts in this research review. Clearly additional work must be done to continue to change the social norms of professional life that creates fear of personal and/or professional consequences of reporting struggles with their reactions to the work they do that exposes them to the trauma of others.

The other limitation of interventions for preventing and treating STS is that they may unduly individualize the problem and fail to address the contextual factors that may impact the worker. Organizational milieu and resources (or the lack thereof) may determine how individuals understand and respond to their environments, and the type of interventions that may be most appropriate for the setting. Investigations into the efficacy or effectiveness of prevention or intervention strategies should consider organizational level variables as potential mediators or moderators of outcomes as well as the level of intervention (Killian, 2008).

An organizational strategy that needs empirical testing is the use of screening for VT/STS/CF in workplaces as part of regular routines. Assessment of VT/STS in work settings with high rates of indirect trauma exposure is not the norm. But, a current practice approach in the trauma field more broadly is to take a "screen and treat" perspective (Brewin, 2001); that is, to help those who are having transient reactions to exposure and those most likely to develop serious and/or chronic problems self-identify so they can take independent action (if needed) to address their unique situation. As these conceptual and technical distinctions are made, the development of construct specific measures can occur, the temporal sequencing of symptoms can be established and prevention

services (if indicated) and interventions can be designed and tested that are rigorous and phenomenon specific.

Longitudinal studies, especially those that employ random assignment to intervention or control conditions, are the most appropriate design for evaluation of interventions and policies. However, almost no studies in this review used this level of rigor.

Conclusion

First responders, mental health care workers, and the other professional groups discussed throughout this paper often work long hours to serve the most vulnerable in our society, often people suffering from trauma. Without a concerted response from researchers, policymakers, and organization leaders, these professional groups are left vulnerable to the shared burden of trauma, accrued from chronic or acute hardship, known as VT or STS. The importance of pursuing this agenda in a logical, sequenced manner cannot be minimized if the public health aim of improving the health and safety of the public and the workforce is to be achieved.

References

- Adams, K. B., Matto, H. C., & Harrington, D. (2001). The Traumatic Stress Institute Belief Scale as a measure of vicarious trauma in a national sample of clinical social workers. *Families in Society, 82*, 363–371. <http://dx.doi.org/10.1606/1044-3894.178>
- Adams, R. E., Boscarino, J. A., & Figley, C. R. (2006). Compassion fatigue and psychological distress among social workers: A validation study. *American Journal of Orthopsychiatry, 76*, 103–108. <http://dx.doi.org/10.1037/0002-9432.76.1.103>
- Adler, A. B., Litz, B. T., Castro, C. A., Suvak, M., Thomas, J. L., Burrell, L., . . . Bliese, P. D. (2008). A group randomized trial of critical incident stress debriefing provided to U.S. peacekeepers. *Journal of Traumatic Stress, 21*, 253–263. <http://dx.doi.org/10.1002/jts.20342>
- American Psychiatric Association. (2013). *Diagnostic and statistical manual of mental disorders* (5th ed.). Arlington, VA: Author. <http://dx.doi.org/10.1176/appi.books.9780890425596>
- Bandura, A. (1986). *Social foundations of thought and action: A social cognitive theory*. Englewood Cliffs, NJ: Prentice Hall.
- Bandura, A. (1997). *Self-efficacy: The exercise of control*. New York, NY: Freeman.
- Beck, C. T. (2011). Secondary traumatic stress in nurses: A systematic review. *Archives of Psychiatric Nursing, 25*, 1–10. <http://dx.doi.org/10.1016/j.apnu.2010.05.005>
- Becker, R. W., & McCrillis, A. (2015). Health sciences librarians, patient contact, and secondary traumatic stress. *Journal of the Medical Library Association, 103*, 87–90. <http://dx.doi.org/10.3163/1536-5050.103.2.006>
- Bell, H., Kulkarni, S., & Dalton, L. (2003). Organizational prevention of vicarious trauma. *Families in Society, 84*, 463–470. <http://dx.doi.org/10.1606/1044-3894.131>
- Bercier, M. L., & Maynard, B. R. (2015). Interventions for secondary traumatic stress with mental health workers: A systematic review. *Research on Social Work Practice, 25*, 81–89. <http://dx.doi.org/10.1177/1049731513517142>
- Berger, R., & Gelkopf, M. (2011). An intervention for reducing secondary traumatization and improving professional self-efficacy in well baby clinic nurses following war and terror: A random control group trial. *International Journal of Nursing Studies, 48*, 601–610. <http://dx.doi.org/10.1016/j.ijnurstu.2010.09.007>
- Berger, W., Coutinho, E. S. F., Figueira, I., Marques-Portella, C., Luz, M. P., Neylan, T. C., . . . Mendlowicz, M. V. (2012). Rescuers at risk: A systematic review and meta-regression analysis of the worldwide current prevalence and correlates of PTSD in rescue workers. *Social Psychiatry and Psychiatric Epidemiology, 47*, 1001–1011. <http://dx.doi.org/10.1007/s00127-011-0408-2>
- Bober, T., & Regehr, C. (2006). Strategies for reducing secondary or vicarious trauma: Do they work? *Brief Treatment and Crisis Intervention, 6*, 1–9. <http://dx.doi.org/10.1093/brief-treatment/mhj001>
- Bogstrand, S. T., Skogstad, L., & Ekeberg, Ø. (2016). The association between alcohol, medicinal drug use and post-traumatic stress symptoms among Norwegian rescue workers after the 22 July twin terror attacks. *International Emergency Nursing, 28*, 29–33. <http://dx.doi.org/10.1016/j.ienj.2016.03.003>
- Bourke, M. L., & Craun, S. W. (2014). Secondary traumatic stress among Internet Crimes Against Children task force personnel: Impact, risk factors, and coping strategies. *Sexual Abuse: Journal of Research and Treatment, 26*, 586–609. <http://dx.doi.org/10.1177/1079063213509411>
- Brewin, C. R. (2001). Cognitive and emotional reactions to traumatic events: Implications for short-term intervention. *Advances in Mind-Body Medicine, 17*, 163–168.
- Bride, B. E. (2007). Prevalence of secondary traumatic stress among social workers. *Social Work, 52*, 63–70. <http://dx.doi.org/10.1093/sw/52.1.63>
- Bride, B. E., Jones, J. L., & Macmaster, S. A. (2007). Correlates of secondary traumatic stress in child protective services workers. *Journal of Evidence-Based Social Work, 4*, 69–80. http://dx.doi.org/10.1300/J394v04n03_05
- Bride, B. E., Radey, M., & Figley, C. R. (2007). Measuring compassion fatigue. *Clinical Social Work Journal, 35*, 155–163. <http://dx.doi.org/10.1007/s10615-007-0091-7>
- Bride, B. E., Robinson, M. M., Yegidis, B., & Figley, C. R. (2004). Development and validation of the Secondary Traumatic Stress Scale. *Research on Social Work Practice, 14*, 27–35. <http://dx.doi.org/10.1177/1049731503254106>
- Bromet, E. J., Hobbs, M. J., Clouston, S. A., Gonzalez, A., Kotov, R., & Luft, B. J. (2016). DSM-IV post-traumatic stress disorder among World Trade Center responders 11–13 years after the disaster of 11 September 2001 (9/11). *Psychological Medicine, 46*, 771–783. <http://dx.doi.org/10.1017/S0033291715002184>
- Bryant, R. A., Sackville, T., Dang, S. T., Moulds, M., & Guthrie, R. (1999). Treating acute stress disorder: An evaluation of cognitive behavior therapy and supportive counseling techniques. *The American Journal of Psychiatry, 156*, 1780–1786.
- Burke, C., & Van Dermoot Lipsky, L. (2009). *Trauma stewardship*. San Francisco, CA: Berrett-Koehler.
- Canfield, J. (2005). Secondary traumatization, burnout, and vicarious traumatization: A review of the literature as it relates to therapists who treat trauma. *Smith College Studies in Social Work, 75*, 81–101. http://dx.doi.org/10.1300/J497v75n02_06
- Caringi, J. C., Hardiman, E. R., Weldon, P., Fletcher, S., Devlin, M., & Stanick, C. (2016). Secondary traumatic stress and licensed clinical social workers. *Traumatology*. Advance online publication. <http://dx.doi.org/10.1037/trm0000061>
- Chen, Y. R., Hung, K. W., Tsai, J. C., Chu, H., Chung, M. H., Chen, S. R., . . . Chou, K. R. (2014). Efficacy of eye-movement desensitization and reprocessing for patients with posttraumatic-stress disorder: A meta-analysis of randomized controlled trials. *PLoS ONE, 9*, e103676. <http://dx.doi.org/10.1371/journal.pone.0103676>
- Choi, G. (2011). Organizational impacts on the secondary traumatic stress of social workers assisting family violence or sexual assault survivors. *Administration in Social Work, 35*, 225–242. <http://dx.doi.org/10.1080/03643107.2011.575333>
- Cieslak, R., Anderson, V., Bock, J., Moore, B. A., Peterson, A. L., & Benight, C. C. (2013). Secondary traumatic stress among mental health providers working with the military: Prevalence and its work- and exposure-related correlates. *Journal of Nervous and Mental Disease, 201*, 917–925. <http://dx.doi.org/10.1097/NMD.0000000000000034>

- Cloitre, M., Stolbach, B. C., Herman, J. L., van der Kolk, B., Pynoos, R., Wang, J., & Petkova, E. (2009). A developmental approach to complex PTSD: Childhood and adult cumulative trauma as predictors of symptom complexity. *Journal of Traumatic Stress, 22*, 399–408. <http://dx.doi.org/10.1002/jts.20444>
- Coetzee, S. K., & Klopper, H. C. (2010). Compassion fatigue within nursing practice: A concept analysis. *Nursing & Health Sciences, 12*, 235–243. <http://dx.doi.org/10.1111/j.1442-2018.2010.00526.x>
- Coleman, J. A., Delahanty, D. L., Schwartz, J., Murani, K., & Brondolo, E. (2016). The moderating impact of interacting with distressed families of decedents on trauma exposure in medical examiner personnel. *Psychological Trauma: Theory, Research, Practice and Policy, 8*, 668–675. <http://dx.doi.org/10.1037/tra0000097>
- Connorton, E., Perry, M. J., Hemenway, D., & Miller, M. (2012). Humanitarian relief workers and trauma-related mental illness. *Epidemiologic Reviews, 34*, 145–155. <http://dx.doi.org/10.1093/epirev/mxr026>
- Conrad, D., & Kellar-Guenther, Y. (2006). Compassion fatigue, burnout, and compassion satisfaction among Colorado child protection workers. *Child Abuse & Neglect, 30*, 1071–1080. <http://dx.doi.org/10.1016/j.chiabu.2006.03.009>
- Cornille, T. A., & Meyers, T. (1999). Secondary traumatic stress among child protection service workers: Prevalence, severity and predictive factors. *Traumatology, 5*, 15–31. <http://dx.doi.org/10.1177/153476569900500105>
- Courtois, C. A. (1988). *Healing the incest wound: Adult survivors in therapy*. New York, NY: Norton.
- Dane, B. (2000). Child welfare workers: An innovative approach for interacting with secondary trauma. *Journal of Social Work Education, 36*, 27–38.
- Dasan, S., Gohil, P., Cornelius, V., & Taylor, C. (2015). Prevalence, causes and consequences of compassion satisfaction and compassion fatigue in emergency care: A mixed-methods study of UK NHS Consultants. *Emergency Medicine Journal, 32*, 588–594. <http://dx.doi.org/10.1136/emj.2014.203671>
- Dominey-Howes, D. (2015). Seeing ‘the dark passenger’—Reflections on the emotional trauma of conducting post-disaster research. *Emotion, Space and Society, 17*, 55–62. <http://dx.doi.org/10.1016/j.emospa.2015.06.008>
- Drewnowski, A., & Evans, W. J. (2001). Nutrition, physical activity, and quality of life in older adults: Summary. *The Journals of Gerontology. Series A, Biological Sciences and Medical Sciences, 56*, 89–94. http://dx.doi.org/10.1093/geron/56.suppl_2.89
- Duren, C. M., Cress, M. E., & McCully, K. K. (2008). The influence of physical activity and yoga on central arterial stiffness. *Dynamic Medicine, 7*, 2. <http://dx.doi.org/10.1186/1476-5918-7-2>
- Dutton, M. A., Bermudez, D., Matas, A., Majid, H., & Myers, N. L. (2013). Mindfulness-based stress reduction for low-income, predominantly African American women with PTSD and a history of intimate partner violence. *Cognitive and Behavioral Practice, 20*, 23–32. <http://dx.doi.org/10.1016/j.cbpra.2011.08.003>
- Dutton, M. A., & Rubinstein, F. L. (1995). Working with people with PTSD: Research implications. In C. R. Figley (Ed.), *Compassion fatigue: Coping with secondary traumatic stress disorder in those who treat the traumatized* (pp. 82–100). New York, NY: Brunner/Mazel.
- Elwood, L. S., Mott, J., Lohr, J. M., & Galovski, T. E. (2011). Secondary trauma symptoms in clinicians: A critical review of the construct, specificity, and implications for trauma-focused treatment. *Clinical Psychology Review, 31*, 25–36. <http://dx.doi.org/10.1016/j.cpr.2010.09.004>
- Engstrom, D., Hernández, P., & Gangsei, D. (2008). Vicarious resilience: A qualitative investigation into its description. *Traumatology, 14*, 13–21. <http://dx.doi.org/10.1177/1534765608319323>
- Everly, G. S., Jr., Barnett, D. J., & Links, J. M. (2012). The Johns Hopkins model of psychological first aid (RAPID-PFA): Curriculum development and content validation. *International Journal of Emergency Mental Health, 14*, 95–103.
- Ewer, P. L., Teesson, M., Sannibale, C., Roche, A., & Mills, K. L. (2015). The prevalence and correlates of secondary traumatic stress among alcohol and other drug workers in Australia. *Drug and Alcohol Review, 34*, 252–258. <http://dx.doi.org/10.1111/dar.12204>
- Fairclough, M. A., Miller-Archie, S. A., Cone, J. E., Dechen, T., Ekenga, C. C., Osahan, S., . . . Farfel, M. R. (2015). Relationship between persistent post-traumatic stress disorder and human remains exposure for Staten Island barge and landfill recovery and clean-up workers after 9/11. *International Journal of Emergency Mental Health and Human Resilience, 2015*, 661–663.
- Figley, C. R. (1995). *Compassion fatigue: Coping with secondary traumatic stress disorder*. New York, NY: Brunner/Mazel.
- Figley, C. R. (2002). *Treating compassion fatigue*. New York, NY: Brunner-Routledge.
- Figley, C. R., & Roop, R. G. (2006). *Compassion fatigue in the animal-care community*. Washington, DC: Humane Society Press.
- Finklestein, M., Stein, E., Greene, T., Bronstein, I., & Solomon, Z. (2015). Posttraumatic stress disorder and vicarious trauma in mental health professionals. *Health & Social Work, 40*, e25–e31. <http://dx.doi.org/10.1093/hsw/hlv026>
- Fisackerly, B. L., Sira, N., Desai, P. P., & McCammon, S. (2016). An examination of compassion fatigue risk in certified child life specialists. *Children's Health Care, 45*, 359–375. <http://dx.doi.org/10.1080/02739615.2015.1038716>
- Flannelly, K. J., Roberts, S. B., & Weaver, A. J. (2005). Correlates of compassion fatigue and burnout in chaplains and other clergy who responded to the September 11th attacks in New York City. *The Journal of Pastoral Care & Counseling, 59*, 213–224. <http://dx.doi.org/10.1177/154230500505900304>
- Fox, J. H., Burkle, F. M., Jr., Bass, J., Pia, F. A., Epstein, J. L., & Markenson, D. (2012). The effectiveness of psychological first aid as a disaster intervention tool: Research analysis of peer-reviewed literature from 1990–2010. *Disaster Medicine and Public Health Preparedness, 6*, 247–252. <http://dx.doi.org/10.1001/dmp.2012.39>
- Furlonger, B., & Taylor, W. (2013). Supervision and the management of vicarious traumatization among Australian telephone and online counsellors. *Australian Journal of Guidance and Counselling, 23*, 82–94. <http://dx.doi.org/10.1017/jgc.2013.3>
- Gentry, J. E., Baggerly, J., & Baranowsky, A. (2004). Training-as-treatment: Effectiveness of the certified compassion fatigue specialist training. *International Journal of Emergency Mental Health, 6*, 147–155.
- Gentry, J. E., Baranowsky, A. B., & Dunning, K. (2002). ARP: The accelerated recovery program (ARP) for compassion fatigue. In C. R. Figley (Ed.), *Treating compassion fatigue* (pp. 123–137). New York, NY: Routledge.
- Goodman, M. J., & Schorling, J. B. (2012). A mindfulness course decreases burnout and improves well-being among healthcare providers. *International Journal of Psychiatry in Medicine, 43*, 119–128. <http://dx.doi.org/10.2190/PM.43.2.b>
- Gordon, L. A., Morrison, E. Y., McGrowder, D. A., Young, R., Fraser, Y. T., Zamora, E. M., . . . Irving, R. R. (2008). Effect of exercise therapy on lipid profile and oxidative stress indicators in patients with type 2 diabetes. *BMC Complementary and Alternative Medicine, 8*, 21. <http://dx.doi.org/10.1186/1472-6882-8-21>
- Grauwlir, P., Barocas, B., & Mills, L. G. (2008). Police peer support programs: Current knowledge and practice. *International Journal of Emergency Mental Health, 10*, 27–38.
- Gray, M. J., Maguen, S., & Litz, B. T. (2004). Acute psychological impact of disaster and large-scale trauma: Limitations of traditional interventions and future practice recommendations. *Prehospital and Disaster Medicine, 19*, 64–72. <http://dx.doi.org/10.1017/S1049023X00001497>

- Greenstone, J. L. (2000). Peer support in a municipal police department: Doing what comes naturally. *The Forensic Examiner*, 9, 33–36.
- Grossman, P., Niemann, L., Schmidt, S., & Walach, H. (2004). Mindfulness-based stress reduction and health benefits. *Journal of Psychosomatic Research*, 57, 35–43. [http://dx.doi.org/10.1016/S0022-3999\(03\)00573-7](http://dx.doi.org/10.1016/S0022-3999(03)00573-7)
- Haraldsdóttir, H. A., Gudmundsdóttir, D., Romano, E., Þórðardóttir, E. B., Guðmundsdóttir, B., & Elklit, A. (2014). Volunteers and professional rescue workers: Traumatization and adaptation after an avalanche disaster. *Journal of Emergency Management*, 12, 457–466. <http://dx.doi.org/10.5055/jem.2014.0209>
- Haugen, P. T., Evces, M., & Weiss, D. S. (2012). Treating posttraumatic stress disorder in first responders: A systematic review. *Clinical Psychology Review*, 32, 370–380. <http://dx.doi.org/10.1016/j.cpr.2012.04.001>
- Hensel, J. M., Ruiz, C., Finney, C., & Dewa, C. S. (2015). Meta-analysis of risk factors for secondary traumatic stress in therapeutic work with trauma victims. *Journal of Traumatic Stress*, 28, 83–91. <http://dx.doi.org/10.1002/jts.21998>
- Herman, J. L. (1992). *Trauma and recovery*. New York, NY: Basic Books.
- Hernández, P., Gangsei, D., & Engstrom, D. (2007). Vicarious resilience: A new concept in work with those who survive trauma. *Family Process*, 46, 229–241.
- Hernandez-Wolfe, P., Killian, K. D., Engstrom, D., & Gangsei, D. (2015). Vicarious resilience, vicarious trauma and awareness of equity in trauma work. *Journal of Humanistic Psychology*, 55, 153–172.
- Hesse, A. (2002). Secondary trauma: How working with trauma survivors affects therapists. *Clinical Social Work Journal*, 30, 293–309. <http://dx.doi.org/10.1023/A:1016049632545>
- Iliffe, G., & Steed, L. G. (2000). Exploring the counselor's experience of working with perpetrators and survivors of domestic violence. *Journal of Interpersonal Violence*, 15, 393–412. <http://dx.doi.org/10.1177/088626000015004004>
- Janoff-Bulman, R. (1992). *Shattered Assumptions: Toward a New Psychology of Trauma*. New York, NY: The Free Press.
- Jenkins, S. R., & Baird, S. (2002). Secondary traumatic stress and vicarious trauma: A validation study. *Journal of Traumatic Stress*, 15, 423–432. <http://dx.doi.org/10.1023/A:1020193526843>
- Johnson, W. B., Bertschinger, M., Snell, A. K., & Wilson, A. (2014). Secondary trauma and ethical obligations for military psychologists: Preserving compassion and competence in the crucible of combat. *Psychological Services*, 11, 68–74. <http://dx.doi.org/10.1037/a0033913>
- Kabat-Zinn, J. (2003). Mindfulness-based interventions in context: Past, present, and future. *Clinical Psychology: Science and Practice*, 10, 144–156. <http://dx.doi.org/10.1093/clipsy.bpg016>
- Kadambi, M. A., & Ennis, L. (2004). Reconsidering vicarious trauma: A review of the literature and its limitations. *Journal of Trauma Practice*, 3, 1–21. http://dx.doi.org/10.1300/J189v03n02_01
- Kessler, R. C., Ormel, J., Petukhova, M., McLaughlin, K. A., Green, J. G., Russo, L. J., . . . Ustün, T. B. (2011). Development of lifetime comorbidity in the World Health Organization world mental health surveys. *Archives of General Psychiatry*, 68, 90–100. <http://dx.doi.org/10.1001/archgenpsychiatry.2010.180>
- Killian, K. D. (2008). Helping till it hurts? A multimethod study of compassion fatigue, burnout, and self-care in clinicians working with trauma survivors. *Traumatology*, 14, 32–44. <http://dx.doi.org/10.1177/1534765608319083>
- Killian, K., Hernandez-Wolfe, P., Engstrom, D., & Gangsei, D. (2017). Development of the Vicarious Resilience Scale (VRS): A measure of positive effects of working with trauma survivors. *Psychological Trauma: Theory, Research, Practice and Policy*, 9, 23–31. <http://dx.doi.org/10.1037/tra0000199>
- Kimbrough, E., Magyar, T., Langenberg, P., Chesney, M., & Berman, B. (2010). Mindfulness intervention for child abuse survivors. *Journal of Clinical Psychology*, 66, 17–33.
- King, A. P., Erickson, T. M., Giardino, N. D., Favorite, T., Rauch, S. A., Robinson, E., . . . Liberzon, I. (2013). A pilot study of group mindfulness-based cognitive therapy (MBCT) for combat veterans with posttraumatic stress disorder (PTSD). *Depression and Anxiety*, 30, 638–645. <http://dx.doi.org/10.1002/da.22104>
- Kintzle, S., Yarvis, J. S., & Bride, B. E. (2013). Secondary traumatic stress in military primary and mental health care providers. *Military Medicine*, 178, 1310–1315. <http://dx.doi.org/10.7205/MILMED-D-13-00087>
- Kiyimba, N., & O'Reilly, M. (2016). An exploration of the possibility for secondary traumatic stress among transcriptionists: A grounded theory approach. *Qualitative Research in Psychology*, 13, 92–108. <http://dx.doi.org/10.1080/14780887.2015.1106630>
- Klarić, M., Kvesić, A., Mandić, V., Petrov, B., & Frančišković, T. (2013). Secondary traumatisation and systemic traumatic stress. *Psychiatria Danubina*, 25, 29–36.
- Knight, C. (2013). Indirect trauma: Implications for self-care, supervision, the organization, and the academic institution. *The Clinical Supervisor*, 32, 224–243. <http://dx.doi.org/10.1080/07325223.2013.850139>
- Lawrence, M. (2017). Near-death and other transpersonal experiences occurring during catastrophic events. *American Journal Of Hospice & Palliative Medicine*, 34, 486–492. <http://dx.doi.org/10.1177/10499091166631298>
- Levin, A. P., Albert, L., Besser, A., Smith, D., Zelenski, A., Rosenkranz, S., & Neria, Y. (2011). Secondary traumatic stress in attorneys and their administrative support staff working with trauma-exposed clients. *Journal of Nervous and Mental Disease*, 199, 946–955.
- Liu, B., Tarigan, L. H., Bromet, E. J., & Kim, H. (2014). World Trade Center disaster exposure-related probable posttraumatic stress disorder among responders and civilians: A meta-analysis. *PLoS ONE*, 9, e101491. <http://dx.doi.org/10.1371/journal.pone.0101491>
- Lusk, M., & Terrazas, S. (2015). Secondary trauma among caregivers who work with Mexican and Central American refugees. *Hispanic Journal of Behavioral Sciences*, 37, 257–273. <http://dx.doi.org/10.1177/0739986315578842>
- Luthar, S. S. (Ed.). (2003). *Resilience and vulnerability. Adaptation in the context of childhood adversities*. New York, NY: Cambridge University Press. <http://dx.doi.org/10.1017/CBO9780511615788>
- Luthar, S. S. (2006). Resilience in development: A synthesis of research across five decades. In D. Cicchetti & D. J. Cohen (Eds.), *Developmental psychopathology: Risk, disorder, and adaptation* (pp. 740–795). New York, NY: Wiley.
- Maslow, C. B., Caramanica, K., Welch, A. E., Stellman, S. D., Brackbill, R. M., & Farfel, M. R. (2015). Trajectories of scores on a screening instrument for PTSD among World Trade Center rescue, recovery, and clean-up workers. *Journal of Traumatic Stress*, 28, 198–205. <http://dx.doi.org/10.1002/jts.22011>
- Mathieu, F. (2012). *The compassion fatigue workbook: Creative tools for transforming compassion fatigue and vicarious traumatization*. New York, NY: Routledge.
- Matto, H. C., Adams, K. B., & Harrington, D. (2000). *The Traumatic Stress Institute Belief Scale as a measure of vicarious trauma: Confirmatory factor analysis in a national sample of clinical social workers*. Paper presented at the 4th Annual Meeting of the Society of Social Work and Research, Charleston, SC.
- May, C. L., & Wisco, B. E. (2016). Defining trauma: How level of exposure and proximity affect risk for posttraumatic stress disorder. *Psychological Trauma: Theory, Research, Practice and Policy*, 8, 233–240. <http://dx.doi.org/10.1037/tra0000077>
- Mayou, R. A., Ehlers, A., & Hobbs, M. (2000). Psychological debriefing for road traffic accident victims. Three-year follow-up of a randomised

- controlled trial. *The British Journal of Psychiatry*, 176, 589–593. <http://dx.doi.org/10.1192/bjp.176.6.589>
- McCann, I. L., & Pearlman, L. A. (1990). Vicarious traumatization: A framework for understanding the psychological effects of working with victims. *Journal of Traumatic Stress*, 3, 131–149. <http://dx.doi.org/10.1007/BF00975140>
- McLennan, J., Evans, L., Cowlshaw, S., Pamment, L., & Wright, L. (2016). Secondary traumatic stress in postdisaster field research interviewers. *Journal of Traumatic Stress*, 29, 101–105. <http://dx.doi.org/10.1002/jts.22072>
- McNally, R. J., Bryant, R. A., & Ehlers, A. (2003). Does early psychological intervention promote recovery from posttraumatic stress? *Psychological Science in the Public Interest*, 4, 45–79. <http://dx.doi.org/10.1111/1529-1006.01421>
- Institute of Medicine. (2003). *Preparing for the psychological consequences of terrorism*. Washington, DC: National Academies Press.
- Mehus, C. J., & Becher, E. H. (2016). Secondary traumatic stress, burnout, and compassion satisfaction in a sample of spoken-language interpreters. *Traumatology*, 22, 249–254.
- Miller, B., & Sprang, G. (2016). A components-based practice and supervision model for reducing compassion fatigue by affecting clinician experience. *Traumatology*. Advance online publication. <http://dx.doi.org/10.1037/trm0000058>
- Mishori, R., Mujawar, I., & Ravi, N. (2014). Self-reported vicarious trauma in asylum evaluators: A preliminary survey. *Journal of Immigrant and Minority Health*, 16, 1232–1237. <http://dx.doi.org/10.1007/s10903-013-9958-6>
- Mitchell, J. T., & Everly, G. S. (2000). Critical incident stress management and critical incident stress debriefings: Evolutions, effects and outcomes. In B. Raphael & J. Wilson (Eds.), *Psychological Debriefing: Theory, Practice and Evidence* (pp. 71–90). New York, NY: Cambridge University Press. <http://dx.doi.org/10.1017/CBO9780511570148.006>
- Negash, S., & Sahin, S. (2011). Compassion fatigue in marriage and family therapy: Implications for therapists and clients. *Journal of Marital and Family Therapy*, 37, 1–13. <http://dx.doi.org/10.1111/j.1752-0606.2009.00147.x>
- Nelson-Gardell, D., & Harris, D. (2003). Childhood abuse history, secondary traumatic stress, and child welfare workers. *Child Welfare: Journal of Policy, Practice, and Program*, 82, 5–26.
- Neville, K., & Cole, D. A. (2013). The relationships among health promotion behaviors, compassion fatigue, burnout, and compassion satisfaction in nurses practicing in a community medical center. *The Journal of Nursing Administration*, 43, 348–354. <http://dx.doi.org/10.1097/NNA.0b013e3182942c23>
- Newell, J. M., & MacNeil, G. A. (2010). Professional burnout, vicarious trauma, secondary traumatic stress, and compassion fatigue. *Best Practices in Mental Health: An International Journal*, 6, 57–68.
- Ortlepp, K., & Friedman, M. (2002). Prevalence and correlates of secondary traumatic stress in workplace lay trauma counselors. *Journal of Traumatic Stress*, 15, 213–222. <http://dx.doi.org/10.1023/A:1015203327767>
- Pack, M. J. (2013). Critical incident stress management: A review of the literature with implications for social work. *International Social Work*, 56, 608–627. <http://dx.doi.org/10.1177/0020872811435371>
- Pearlman, L. A. (1996). Psychometric review of TSI Belief Scale, revision L. In B. H. Stamm (Ed.), *Measurement of stress, trauma, and adaptation* (pp. 415–417). Lutherville, MD: Sidran Press.
- Pearlman, L. A. (2003). *Trauma and Attachment Belief Scale*. Los Angeles, CA: Western Psychological Services.
- Pearlman, L. A. (2014). Vicarious traumatization in mass violence researchers. In I. Maček (Ed.), *Engaging violence: Trauma, memory and representation* (pp. 171–197). New York, NY: Routledge.
- Pearlman, L., & Saakvitne, K. (1995). Treating therapists with vicarious traumatization and secondary traumatic stress disorders. In C. Figley (Ed.), *Compassion fatigue: Coping with secondary traumatic stress disorder in those who treat the traumatized* (pp. 150–177). New York, NY: Brunner/Mazel.
- Pender, D. A., & Prichard, K. K. (2009). ASGW best practice guidelines as a research tool: A comprehensive examination of the critical incident stress debriefing. *Journal for Specialists in Group Work*, 34, 175–192. <http://dx.doi.org/10.1080/01933920902807147>
- Penedo, F. J., & Dahn, J. R. (2005). Exercise and well-being: A review of mental and physical health benefits associated with physical activity. *Current Opinion in Psychiatry*, 18, 189–193. <http://dx.doi.org/10.1097/00001504-200503000-00013>
- Perez, L. M., Jones, J., Englert, D. R., & Sachau, D. (2010). Secondary traumatic stress and burnout among law enforcement investigators exposed to disturbing media images. *Journal of Police and Criminal Psychology*, 25, 113–124. <http://dx.doi.org/10.1007/s11896-010-9066-7>
- Perkins, E. B., & Sprang, G. (2013). Results from the Pro-QOL-IV for substance abuse counselors working with offenders. *International Journal of Mental Health and Addiction*, 11, 199–213. <http://dx.doi.org/10.1007/s11469-012-9412-3>
- Prati, G., Pietrantonio, L., & Cicognani, E. (2010). Self-efficacy moderates the relationship between stress appraisal and quality of life among rescue workers. *Anxiety, Stress & Coping: An International Journal*, 23, 463–470. <http://dx.doi.org/10.1080/10615800903431699>
- Pullen, P. R., Nagamia, S. H., Mehta, P. K., Thompson, W. R., Benardot, D., Hammoud, R., . . . Khan, B. V. (2008). Effects of yoga on inflammation and exercise capacity in patients with chronic heart failure. *Journal of Cardiac Failure*, 14, 407–413. <http://dx.doi.org/10.1016/j.cardfail.2007.12.007>
- Raunick, C. B., Lindell, D. F., Morris, D. L., & Backman, T. (2015). Vicarious trauma among sexual assault nurse examiners. *Journal of Forensic Nursing*, 11, 123–128. <http://dx.doi.org/10.1097/JFN.0000000000000085>
- Remen, R. N. (1996). *Kitchen table wisdom: Stories that heal*. New York, NY: Riverhead Books.
- Ringenbach, R. (2009). *A comparison between counselors who practice meditation and those who do not on compassion fatigue, compassion satisfaction, burnout and self-compassion* (Doctoral dissertation). Retrieved from http://rave.ohiolink.edu/etdc/view?acc_num=akron1239650446
- Robertson, N., Davies, G., & Nettleingham, A. (2009). Vicarious traumatization as a consequence of jury service. *Howard Journal of Criminal Justice*, 48, 1–12. <http://dx.doi.org/10.1111/j.1468-2311.2008.00539.x>
- Robinson-Keilig, R. A. (2014). Secondary traumatic stress and disruptions to interpersonal functioning among mental health therapists. *Journal of Interpersonal Violence*, 29, 1477–1496. <http://dx.doi.org/10.1177/0886260513507135>
- Rose, S., Bisson, J., & Wessely, S. (2003). A systematic review of single-session psychological interventions (‘debriefing’) following trauma. *Psychotherapy and Psychosomatics*, 72, 176–184. <http://dx.doi.org/10.1159/000070781>
- Ross, A., & Thomas, S. (2010). The health benefits of yoga and exercise: A review of comparison studies. *The Journal of Alternative and Complementary Medicine*, 16, 3–12. <http://dx.doi.org/10.1089/acm.2009.0044>
- Roth, S., Newman, E., Pelcovitz, D., van der Kolk, B., & Mandel, F. S. (1997). Complex PTSD in victims exposed to sexual and physical abuse: Results from the DSM-IV field trial for posttraumatic stress disorder. *Journal of Traumatic Stress*, 10, 539–555. <http://dx.doi.org/10.1002/jts.2490100403>
- Ruzek, J. I., Brymer, M., Jacobs, A. K., Layne, C. M., Vernberg, E. M., & Watson, P. J. (2007). Psychological first aid. *Journal of Mental Health Counseling*, 29, 17–49. <http://dx.doi.org/10.17744/mehc.29.1.5rac-qxjueafabgwp>

- Sabin-Farrell, R., & Turpin, G. (2003). Vicarious traumatization: Implications for the mental health of health workers? *Clinical Psychology Review, 23*, 449–480. [http://dx.doi.org/10.1016/S0272-7358\(03\)00030-8](http://dx.doi.org/10.1016/S0272-7358(03)00030-8)
- Sanders, M. R., Kirby, J. N., Tellegen, C. L., & Day, J. J. (2014). The Triple P-Positive Parenting Program: A systematic review and meta-analysis of a multi-level system of parenting support. *Clinical Psychology Review, 34*, 337–357. <http://dx.doi.org/10.1016/j.cpr.2014.04.003>
- Shapiro, F., & Maxfield, L. (2002). Eye movement desensitization and reprocessing (EMDR): Information processing in the treatment of trauma. *Journal of Clinical Psychology, 58*, 933–946. <http://dx.doi.org/10.1002/jclp.10068>
- Smith Hatcher, S., Bride, B. E., Oh, H., Moultrie King, D., & Franklin Catrett, J. (2011). An assessment of secondary traumatic stress in juvenile justice education workers. *Journal of Correctional Health Care, 17*, 208–217. <http://dx.doi.org/10.1177/1078345811401509>
- Sprang, G., Clark, J. J., & Whitt-Woosley, A. (2007). Compassion fatigue, compassion satisfaction, and burnout: Factors impacting a professional's quality of life. *Journal of Loss and Trauma, 12*, 259–280. <http://dx.doi.org/10.1080/15325020701238093>
- Stamm, B. (2002). Measuring compassion satisfaction as well as fatigue: Developmental history of the Compassion Satisfaction and Fatigue Test. In C. R. Finley (Ed.), *Treating compassion fatigue* (pp. 107–119). New York, NY: Brunner-Routledge.
- Stamm, B. (2009). *Professional Quality of Life: Compassion Satisfaction and Fatigue Version 5 (ProQOL)*. Retrieved from http://www.proqol.org/uploads/ProQOL_5_English.pdf
- Stamm, B. H., & Figley, C. R. (1996). *Compassion Satisfaction and Fatigue Test*. Retrieved from <http://www.isu.edu/~bstamm/tests.htm>
- Steinberg, A. M., Brymer, M. J., Decker, K. B., & Pynoos, R. S. (2004). The University of California at Los Angeles Post-traumatic Stress Disorder Reaction Index. *Current Psychiatry Reports, 6*, 96–100. <http://dx.doi.org/10.1007/s11920-004-0048-2>
- Stephens, C., & Long, N. (2000). Communication with police supervisors and peers as a buffer of work-related traumatic stress. *Journal of Organizational Behavior, 21*, 407–424. [http://dx.doi.org/10.1002/\(SICI\)1099-1379\(200006\)21:4<407::AID-JOB17>3.0.CO;2-N](http://dx.doi.org/10.1002/(SICI)1099-1379(200006)21:4<407::AID-JOB17>3.0.CO;2-N)
- Stuck, M., Meyer, K., & Rigotti, T. (2003). Evaluation of a yoga based stress management training for teachers: Effects on immunoglobulin A secretion and subjective relaxation. *Journal for Meditation and Meditation Research, 13*, 1–8.
- Tehrani, N. (2016). Extraversion, neuroticism and secondary trauma in Internet child abuse investigators. *Occupational Medicine, 66*, 403–407. <http://dx.doi.org/10.1093/occmed/kqw004>
- Thieleman, K., & Cacciatore, J. (2014). Witness to suffering: Mindfulness and compassion fatigue among traumatic bereavement volunteers and professionals. *Social Work, 59*, 34–41. <http://dx.doi.org/10.1093/sw/swt044>
- Thormar, S. B., Gersons, B. P. R., Juen, B., Marschang, A., Djakababa, M. N., & Olff, M. (2010). The mental health impact of volunteering in a disaster setting: A review. *Journal of Nervous and Mental Disease, 198*, 529–538. <http://dx.doi.org/10.1097/NMD.0b013e3181ea1fa9>
- Thorne, F. C. (1952). Psychological first aid. *Journal of Clinical Psychology, 8*, 210–211.
- Ting, L., Jacobson, J., Sanders, S., Bride, B. E., & Harrington, D. (2005). The Secondary Traumatic Stress Scale (STSS). *Journal of Human Behavior in the Social Environment, 11*, 177–194. http://dx.doi.org/10.1300/J137v11n03_09
- Tuckey, M. R., & Scott, J. E. (2014). Group critical incident stress debriefing with emergency services personnel: A randomized controlled trial. *Anxiety, Stress & Coping: An International Journal, 27*, 38–54. <http://dx.doi.org/10.1080/10615806.2013.809421>
- Vicarious Trauma Institute. (2015). *What is vicarious trauma?* Retrieved from Vicarious Trauma Institute website: <http://www.vicarioustrauma.com/whatis.html>
- Walsh, F. (2006). *Strengthening family resilience*. New York, NY: Guilford Press.
- Wee, D. F., & Myers, D. (2002). *Stress responses of mental health workers following disaster: The Oklahoma City bombing*. New York, NY: Brunner-Routledge.
- Weiss, D. S., Marmar, C. R., Schlenger, W. E., Fairbank, J. A., Jordan, K. B., Hough, R. L., Kulka, R. A. (1992). The prevalence of lifetime and partial post-traumatic stress disorder in Vietnam theater veterans. *Journal of Traumatic Stress, 5*, 365–376.
- Williams, V., Ciarrochi, J., & Deane, F. P. (2010). On being mindful, emotionally aware, and more resilient: Longitudinal pilot study of police recruits. *Australian Psychologist, 45*, 274–282. <http://dx.doi.org/10.1080/00050060903573197>
- Wilson, L. C. (2015). A systematic review of probable posttraumatic stress disorder in first responders following man-made mass violence. *Psychiatry Research, 229*(1–2), 21–26. <http://dx.doi.org/10.1016/j.psychres.2015.06.015>
- Woody, R. H. (2005). The police culture: Research implications for psychological services. *Professional Psychology: Research and Practice, 36*, 525–529. <http://dx.doi.org/10.1037/0735-7028.36.5.525>
- Yip, J., Zeig-Owens, R., Webber, M. P., Kablanian, A., Hall, C. B., Vossbrinck, M., . . . Kelly, K. J. (2015). World Trade Center-related physical and mental health burden among New York City Fire Department emergency medical service workers. *Occupational and Environmental Medicine, 73*, 13–20.
- Zadeh, S., Gamba, N., Hudson, C., & Wiener, L. (2012). Taking care of care providers: A wellness program for pediatric nurses. *Journal of Pediatric Oncology Nursing, 29*, 294–299.
- Zeisel, S. H. (2009). Epigenetic mechanisms for nutrition determinants of later health outcomes. *The American Journal of Clinical Nutrition, 89*, 1488S–1493S. <http://dx.doi.org/10.3945/ajcn.2009.27113B>
- Želeskov-Đorić, J., Hedrih, V., & Đorić, P. (2012). Relations of resilience and personal meaning with vicarious traumatization in psychotherapists. *International Journal of Psychotherapy, 16*, 44–55.
- Zhang, G., Pfefferbaum, B., Narayanan, P., Lee, S., Thielman, S., & North, C. S. (2016). Psychiatric disorders after terrorist bombings among rescue workers and bombing survivors in Nairobi and rescue workers in Oklahoma City. *Annals of Clinical Psychiatry, 28*, 22–30.
- Zimering, R., Munroe, J., & Gulliver, S. B. (2003). Secondary traumatization in mental health care providers. *The Psychiatric Times, 20*, 43–46.

Received December 9, 2016

Revision received March 30, 2017

Accepted May 9, 2017 ■