


The Experience of Secondary Traumatic Stress Upon Care Providers Working Within a Children's Hospital

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This study examined the impact of routine occupational exposure to traumatic aspects of child illness, injury, and medical treatment upon care providers working within a children's hospital. Three hundred fourteen providers completed a demographic data sheet and four questionnaires. Results suggested overall that the level of Compassion Fatigue in this sample was similar to a trauma worker comparison group. In addition, 39% of the sample was at moderately to extremely high risk for Compassion Fatigue, and 21% was at moderate to high risk for Burnout. Burnout and Compassion Fatigue were related to type of profession and length of employment. Various dimensions of empathy were related to both Burnout and Compassion Fatigue. Regression analyses indicated that years in direct care and greater blurring of caregiver boundaries were predictive of greater Burnout and Compassion Fatigue. There is a need to further refine the assessment of occupational exposure to potential traumatic aspects of care within pediatric hospital settings and link assessment to prevention and intervention efforts.

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 **H**EALTH CARE PROVIDERS in tertiary care medical centers are regularly exposed to patients who experience medical trauma, including acute illness, life-threatening events, death, and significant patient and family distress. **Trauma refers to experiencing, witnessing, or being confronted with an event or events that involve actual or threatened death or serious injury or a threat to the physical integrity of oneself or others** (American Psychiatric Association, 1995) and **includes both direct and indirect exposure**. Regular occupational exposure to others' trauma has the potential to affect health care providers in numerous ways. For example, changes in beliefs and attitudes;

symptoms related to reexperiencing the event(s), avoidance, numbing, and increased arousal; increased difficulties in relating to others; and less effective occupational functioning are all recognized as possible health care worker reactions to exposure to medical trauma (Alexander & Atcherson, 1995; Collins & Long, 2003; Figley, 1995; Sabin-Farrell & Turpin, 2003).

It can be argued that for providers within children's hospitals, the impact of witnessing other's trauma is amplified (Vredenburgh, 1992), given the value of protecting and caring for children. The chronic, sometimes life-threatening nature of children's illness can create intense emotions in the family and in those who provide care (Barnsteiner & Gillis-Donovan, 1990). In addition, **working with vulnerable populations such as traumatically injured or dying children has been shown to increase a caregiver's risk for experiencing secondary trauma** (Beaton & Murphy, 1995). Exposure to the traumatic experiences of others is thought to have a cumulative effect on caregivers, with **greater exposure over time being associated with higher levels of symptomatic distress** (Weiss, Marmar, Metzler, & Ronfelt, 1995).

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Despite the regularity of secondary exposure to medical-related trauma, very little is known about the cumulative effects of helping children and their families who have experienced acute illness, injury, and medical treatment on the thoughts, feelings, and behaviors of pediatric health care providers. Previous studies have largely involved either workers responding to single-episode natural crises (e.g., earthquake; Guo et al., 2004), patients referred for behavioral health services (Regan, Burley, Hamer, & Wright, 2006), and professionals treating identified abuse victims (Sabin-Farrell & Turpin, 2003). It is also not yet clear whether or how secondary exposure may be different between mental health and health providers. For example, although mental health providers often explore the thoughts and feelings of patients in relation to their abuse over repeated sessions, hospital-based nurses conduct procedures that are often painful and frightening (e.g., needle sticks and lumbar punctures) and are frequently exposed to hearing about and witnessing acute medical trauma in patients and families. Finally, no previous studies separate pediatric versus nonpediatric groups.

Various terms have been proposed to describe the potential consequences of occupational exposure to another person's trauma, including secondary traumatic stress (STS), compassion fatigue, vicarious traumatization, and burnout. There appears to be some overlap between these concepts, yet identifiable conceptual differences (Jenkins & Baird, 2002). STS closely parallels posttraumatic stress disorder, but refers to the symptoms and emotional responses resulting from work with persons experiencing trauma, and is thought to be synonymous with the concept of compassion fatigue (Figley, 1995). Vicarious traumatization refers to a cumulative process "through which the therapists' inner experience is negatively transformed through empathic engagement with clients' trauma material" (Figley & Stamm, 1996, p. 279) and emphasizes specific cognitive changes. Burnout describes the broader consequences of working in a stressful environment, including emotional exhaustion, depersonalization, and a reduced sense of accomplishment and achievement (Figley, 1995; Stamm, 1997b), and is thought to represent a more gradual process. It is related to chronic tedium in the workplace, is not necessarily related to trauma exposure, and is believed to increase the likelihood of developing STS (Figley, 1995).

A number of variables may be related to the general experience of work-related traumatic stress (Pearlman & Saakvitne, 1995; Sabin-Farrell & Turpin, 2003), including factors within the work setting (e.g., amount of exposure to traumatic material and amount of peer support) and factors within the individual (e.g., current life context and past trauma history). Empathic engagement is positively related to indices of job satisfaction and thus is a possible protective factor but may also contribute to the blurring of boundaries between patient and provider, leaving an individual more vulnerable to the negative effects of trauma exposure (Figley, 1995; Jenkins & Baird, 2002; Sabin-Farrell & Turpin, 2003; Sabo, 2006). Spirituality and connection to something larger than the individual are believed to help maintain balance and help lessen the negative effects of trauma exposure (Pearlman & Saakvitne, 1995). Ways of coping with job-related stress and exposure to trauma have been related to other indices of job satisfaction and burnout (Carver, Scheier, & Weintraub, 1989). Finally, satisfaction with one's role as a caregiver is thought to be a protective factor and buffer against exposure to trauma (Collins & Long, 2003; Saakvitne & Pearlman, 1996).

Despite the intuitive appeal of these concepts, there is a lack of empirical evidence supporting the existence of concepts delineating work-related exposure to medical trauma and how these concepts might be interrelated. Issues related to the operational definition of these terms and variable research methodologies and study samples have limited what is currently known and contributed to lack of consistency in the findings (Jenkins & Baird, 2002; Sabin-Farrell & Turpin, 2003).

There were three objectives of this study: (a) assess the impact of providing care to patients within a children's hospital among medical, nursing, psychosocial, and allied health care providers, compared to two comparison groups of professionals (health care professionals and trauma workers), (b) identify demographic variables that may be associated with differences in reported STS within our children's hospital sample, and (c) examine the relationships between STS and measures of empathy, spirituality, and coping to better understand whether and to what extent these variables are related to the experience of STS. We hypothesized that health care providers exposed to witnessing routine medical trauma within a children's hospital would report levels of STS at least

equal to or greater than the trauma worker comparison sample. The direction of relationships between STS and demographics, coping style, spirituality, and empathy were not posited due to lack of any previous empirical work within this population. The study was purposefully not guided by any overarching theoretical framework because of the mixed findings in the current literature.

METHODS

Participants

Faculty and staff in medicine, nursing, social work, allied health (occupational therapy, physical therapy, and audiology), child life, and psychology were recruited to participate in the study from Divisions of Oncology, Cardiology, Nephrology, Emergency Services, Intensive Care Units, Rehabilitation/Child Development, Psychology, Social Work, and Anesthesiology. General medical nurses who provided care on the medical/surgical and critical care floors but did not belong to a specific pediatric division were also recruited. Entry-level through senior faculty in each profession were recruited. There was no attempt to statistically stratify the sample.

Measures

Interpersonal Reactivity Index (IRI; Davis, 1983). This 28-item multidimensional questionnaire assesses emotional and cognitive components of a person's general capacity for empathy, and consists of four subscales: Perspective Taking, Empathic Concern, Personal Distress, and Fantasy. Respondents respond along a 5-point scale, from 1 = *does not describe me well* to 5 = *describes me well*. The possible range is 28 to 140 points. Each scale reliably measures the identified variable with alpha coefficients ranging from 0.71 to 0.77 (Davis, 1983; Davis & Oathout, 1987; Litvack-Miller, McDougall, & Romney, 1997). In this study, reliability coefficients ranged from 0.75 to 0.81 for the four subscales.

Spiritual Involvement Beliefs Scale (SIBS; Hatch, Burg, Naberhaus, & Hellmich, 1998). This 24-item questionnaire asks respondents to evaluate actions and beliefs regarding their spirituality, across religious traditions, along a 5-point scale from 5 = *strongly agree* to 1 = *strongly disagree*. The possible range is 24 to 120 points. The SIBS total score exhibits 7- to 9-month test-retest reliability of 0.92, as well as initial concurrent

validity ($r = .80$ with another established measure of spirituality) and construct validity (clear four-factor structure identified through factor analyses). The coefficient alpha in the study sample was .93.

Brief COPE (Carver, 1997). The Brief COPE is a 28-item measure designed to assess coping strategies that respondents typically use when facing stressful events and describe various coping approaches that are rated on a 4-point scale (from *I usually don't do this at all* to *I usually do this a lot*). It was standardized on a nonstudent population who were sampled following experiencing a traumatic event. The standardization sample was diverse with respect to ethnicity.

The Brief COPE consists of nine factors. The test authors recommend that factor analyses be conducted for each study utilizing this measure to identify the most appropriate scales for that sample. A factor analysis was conducted and a two-factor solution was revealed. These factors were best identified as Internal Coping (12 items, $\alpha = .45$) and External Coping (8 items, $\alpha = .73$). Internal Coping was defined as thoughts and behaviors within the individual, for example, "I take action to try to make the situation better" and "I criticize myself." External Coping was defined as thoughts and behaviors involving others, for example, "I get help and advice from other people" and "I get comfort and understanding from someone." The possible range for Internal Coping was 12 to 48 points, whereas the possible range for External Coping was 8 to 32 points.

Compassion Satisfaction and Fatigue Test (CSFT; Figley & Stamm, 1996; Stamm, 1997a). The CSFT is a 66-item questionnaire designed to assess the experience as a helper. The test authors rationally developed the items. Respondents are asked to respond along a 5-point scale, 0 = *never* to 5 = *very often*. The CSFT includes three subscales: (a) **Compassion Satisfaction**, which consists of 26 items and assesses an individual's satisfaction with their caregiving role, for example, finding pleasure in helping others, feeling good about the ability to help, believing that one is making a contribution, possible range = 0 to 130, $M (SD) = 92.1 (16)$; higher scores reflect more satisfaction with ability to give care, (2) **Burnout**, which includes 17 items that assess work-related hopelessness and withdrawal, for example, feeling hopeless and unwilling to deal with work, feeling that one's efforts make no difference, possible range = 0 to 80, $M (SD) = 24.2 (10.8)$; higher scores reflect higher risk, and (3) **Compassion Fatigue**, a 23-item scale that assesses symptoms of work-related posttraumatic stress and

exposure to highly stressful caregiving, for example, feeling estranged from others, having difficulty falling or staying asleep, possible range = 0 to 115, $M(SD) = 28.8(13.2)$; higher scores reflect higher risk. The Compassion Fatigue scale was utilized to directly measure STS in this study. All three scales have demonstrated strong internal consistency both in previous studies (coefficient alphas = 0.87 to 0.90; Figley & Stamm, 1996) and in the current study (coefficient alphas = .84 to .90). Initial evidence of concurrent validity is supported through moderate correlations between the CSFT and measures of vicarious traumatization and general psychological distress (Jenkins & Baird, 2002; Sexton, 1999). The test authors have recommended interpretive guidelines for this measure that identify levels of risk (ranging from extremely low to extremely high) for each subscale (see note in Table 1).

Procedure

The two comparison samples were available data obtained from the CSFT authors (Stamm, BH, unpublished data). Trauma Workers was a pooled sample of 370 professionals trained to deal with trauma who had responded to a single traumatic event (e.g., natural disaster). The Trauma Worker sample consisted of business volunteers (35%), caregivers in training (27%), trauma professionals (16%), and Red Cross staff (8%) across three countries of origin (USA, Canada, and South Africa). The mean age for this sample was 35.4 years, and the majority were women (56%) (Figley

& Stamm, 1996). Health Professionals was a pooled sample of 280 nurses and medical trainees.

Study participants were recruited on a voluntary basis during a series of brief presentations during regularly scheduled department or unit meetings. A brief overview of the study was presented, study questionnaires were distributed, and participants were asked to return the completed questionnaires in a box placed within each department or unit. Completion of questionnaires was indicative of respondent's informed consent to participate in the study. Due to the voluntary and anonymous structure of the recruitment procedure, there was no attempt to gather information from individuals who did not participate in the study. The hospital's institutional review board approved this study.

Participants completed a demographic information sheet and the four questionnaires (IRI, SIBS, Brief COPE, and CSFT). The demographic information sheet obtained information regarding age, gender, profession, employment status, ethnic background, religious affiliation, and whether participants have children of their own. Participants spent approximately 30 to 40 minutes filling out the questionnaires. No incentives were offered to study participants. Questionnaires were completed anonymously to protect the confidentiality of participants. To prevent the identification of any participant and to encourage valid responding, individual data were processed by research assistants not affiliated with any medical division. Following data collection and analysis, study results

Table 1. Compassion Satisfaction and Fatigue Test Results Across Three Groups

Group (n)	Compassion Satisfaction	Burnout	Compassion Fatigue
	M (SD)	M (SD)	M (SD)
1. CHOP (314)	94.4 (13.3)	29.3 (10.9)	27.8 (12.4)
Professional group			
Physician (86)	91.9 (13.6)	31.7 (12.0)	26.9 (14.4)
Nursing (136)	97.0 (12.6)	27.8 (10.6)	28.1 (11.7)
Behavior health (43)	94.6 (13.0)	26.0 (12.3)	26.9 (12.3)
Allied health (49)	91.6 (14.0)	31.8 (10.1)	29.4 (11.0)
Length of employment			
Short-term employee (151)	94.2 (13.0)	28.2 (10.4)	26.2 (12.0)
Long-term employee (163)	94.7 (13.6)	30.2 (11.2)	29.4 (12.7)
2. Trauma workers (370)	92.1 (16.0)	24.2 (10.8)	28.8 (13.2)
3. Health professionals (192)	89.9 (20.0)	26.5 (12.7)	30.0 (13.0)

Note. Short-term employee = employed less than 3 years; long-term employee = employed greater than 3 years. The range and test author recommend interpretive guidelines for the CSFT are as follows: Compassion Satisfaction: range = 0–130; 118+ = extremely high potential; 100–117 = high potential; 82–99 = good potential; 64–81 = modest potential; below 63 = low potential. Burnout: range = 0–80; <36 = extremely low risk; 37–50 = moderate risk; 51–75 = high risk; 76–85 = extremely high risk. Compassion Fatigue: range = 0–115; <26 = extremely low risk; 27–30 = low risk; 31–35 = moderate risk, 36–40 = high risk, >41 = extremely high risk.

were disseminated to interested study participants through a series of seminars.

Statistical Approach

Objective 1

To examine the impact of care providers' routine occupational exposure to medical trauma within a children's hospital, Welch's *t* tests were used to compare the participant's responses on the CSFT to the two comparison samples. Probability levels were set at $p < .01$ to allow for conservative interpretations of statistical significance and avoid over interpretation due to multiple comparisons. The Welch's *t* test allows for conservative comparisons between groups of unequal sample sizes and unequal variances.

Objective 2

To examine the relationship between demographic variables and the CSFT within the CH sample, two approaches were utilized. For differences between categorical groups (e.g., profession, sex, and trainee status) one-way analysis of variance was used. For continuous demographic variables (e.g., age, percentage of time engaged in clinical care, and number of years employed), Pearson correlations were used to examine the relationship between these variables and the CSFT.

Objective 3

To examine the relationship between the impact of secondary trauma exposure and the measures of empathy, spirituality, and coping within the CH sample, zero-order correlations were run. Next, separate multiple regression analyses with backward selection were used to examine predictors of the three CSFT scales. Backward selection, as opposed to stepwise hierarchical regression, was utilized in order to not eliminate variables based on a priori theoretical underpinnings. In backward selection, all variables are entered into the model in the first step and then eliminated based on those variables that have the smallest change in the R^2 . Thus, Compassion Satisfaction, Burnout, and Compassion Fatigue were entered as the dependent variables in three separate models, with demographics, empathy, spirituality, and coping entered as independent variables. Probability levels were set at $p < .01$ to allow for conservative interpretations of statistical significance and avoid over-interpretation due to multiple analyses. The sample of 314 subjects provided sufficient power to detect

a medium effect size at $p = .01$ (Cohen, 1992; Tabachnick & Fidell, 2007).

RESULTS

The sample consisted of 314 health care professionals at The Children's Hospital of Philadelphia and included 86 physicians, 136 nurses, 43 mental health practitioners (psychologists and social workers), and 49 allied health (speech and language, occupational therapy, and physical therapy) practitioners. Within this sample, 60 were medical or psychology trainees (interns and fellows). With respect to terminal educational degrees, 101 held doctor of medicine or doctor of philosophy, 90 held master's degrees, 124 held bachelor degrees, and 9 held associate degrees. Eighty-two percent of participants were women. With respect to race, 85% were Caucasian, and 7% were African American. The mean age of participants was 36 years (range = 22–78 years), and the mean years of employment at the hospital was 7.1 years (range = 0–32 years). Eighty-four percent of the participants worked full-time. The average amount of time spent in direct care was 93.8% across the entire sample. Nursing sample characteristics were generally representative of the larger hospital population, according to the Director of Medical Nursing and the Coordinator of Nursing Talent Management and Leadership Development.

Objective 1—Impact of STS Among Health Providers

We initially examined The Children's Hospital of Philadelphia (CH) mean scores across the three CSFT subscales (Table 1). Overall results indicated "good potential" for Compassion Satisfaction, "extremely low risk" for Burnout and "low risk" for Compassion Fatigue, based on the test authors' scoring instructions (Figley & Stamm, 1996). When the researchers examined the percentages of providers scoring within specific categories, 39% of the sample scored within the moderately to extremely high risk for Compassion Fatigue, and 21% scored within the moderate to high risk for Burnout.

The CH sample was then compared to the two comparison groups (Trauma Workers and Health Professionals) across the three subscales of the CSFT (Compassion Satisfaction, Burnout, and Compassion Fatigue; Table 1). Compared to the Health Professionals sample, the CH sample reported greater Compassion Satisfaction ($t = 2.8$,

$p < .01$) and **Burnout** ($t = 2.9, p < .01$). CH nurses endorsed higher scores on the Compassion Satisfaction scale ($t = 3.9, p < .001$), whereas CH physicians and CH allied health professionals reported higher scores on the Burnout scale ($t_s = 3.5$ and $3.3, p_s < .001$ and $.002$, respectively). **Long-term CH employees reported higher scores on the Compassion Satisfaction scale than did short-term CH employees** ($t = 2.7, p < .01$). In addition, **long-term employees had higher Compassion Fatigue** ($t = -.3.1, p < .01$) and **Burnout** ($t = 3.2, p < .01$) scores, relative to the HP sample.

Compared to the Trauma Workers sample, the CH sample overall endorsed **greater Burnout** ($t = 6.1, p < .001$) but **not Compassion Fatigue** ($t = -1.0, ns$). More specifically, CH nurses endorsed higher scores on the Compassion Satisfaction ($t = 3.6, p < .001$) as well as Burnout ($t = 3.4, p < .001$) scales, whereas CH physicians and CH allied health professionals endorsed higher scores on the Burnout scale ($t_s = 5.3$ and $4.9, p_s < .001$, respectively). There were **no significant differences between the CH and Trauma Workers samples with respect to Compassion Fatigue**.

These results provide partial support for Hypothesis 1. Significantly higher Burnout scores were reported by the CH sample compared to both the Health Professionals and Trauma Workers comparison samples. In addition, a sizeable minority of the CH sample was at moderate to high risk for Burnout or Compassion Fatigue.

Objective 2—Relationships Between CSFT and Demographic Variables

Relationships between demographic variables and the CSFT (Compassion Satisfaction, Burnout,

and Compassion Fatigue) within the CH sample were examined. **Trainees** (interns and fellows) reported **significantly lower Compassion Satisfaction scores than nontrainees** ($t = -2.94, p < .01$), whereas part-time employees reported greater Compassion Satisfaction scores than full-time employees ($t = -3.02, p < .01$). There were **no significant differences between scores on Compassion Fatigue as a function of the demographic variables**. There were also no significant differences between males and females, those identifying versus not identifying with an organized religion, country of training, education level, years of employment at the hospital, or self-identified ethnicity, and scores on the CSFT.

There was a significant difference with respect to scores on the CSFT and profession on Burnout ($F = 4.72, p < .01$). **Physicians reported higher Burnout scores than both Nurses and Mental Health Professionals**.

Objective 3—Relationships Between CSFT Subscales and Coping, Empathy, and Spirituality

To examine relationships between Compassion Satisfaction, Burnout, and Compassion Fatigue, and coping, empathy, and spirituality, a **bivariate correlation matrix was constructed** (Table 2). Examination of these coefficients **indicates a number of statistically significant correlations between the independent and dependent variables**. It is also noteworthy that there was a significant relationship between the Burnout and Compassion Fatigue subscales ($r = .667, p < .001$).

Table 2. Bivariate Correlations for All Independent Variables

Variable	1	2	3	4	5	6	7	8	9
1. CSFT CS	—	—	—	—	—	—	—	—	—
2. CSFT Burn	-.55*	—	—	—	—	—	—	—	—
3. CSFT CF	-.34*	.68*	—	—	—	—	—	—	—
4. IRI P	.35	-.22*	-.12	—	—	—	—	—	—
5. IRI F	.04	.10	.19*	.22*	—	—	—	—	—
6. IRI E	.36*	-.09	.04	.41*	.34*	—	—	—	—
7. IRI D	-.36*	.35*	.30*	-.17*	-.15*	.01	—	—	—
8. SIBS	.11	-.03	.01	.12	.05	.32*	-.07	—	—
9. Internal	.22*	.02	.08	.32*	.07	.25*	-.16*	.17*	—
10. External	.20*	-.07	-.00	.17*	.25*	.21*	.04	.04	.18*

Note. CSFT, CS = Compassion Satisfaction Fatigue Test Compassion Satisfaction; CSFT Burn = Compassion Satisfaction Fatigue Test Burnout; CSFT CF = Compassion Satisfaction Fatigue Test Compassion Fatigue; IRI P = Interpersonal Reactivity Index Perspective Taking; IRI F = Interpersonal Reactivity Index Fantasy; IRI E = Interpersonal Reactivity Index Empathic Concern; IRI D = Interpersonal Reactivity Index Personal Distress; Internal = Brief Cope Internal; External = Brief Cope External.

N = 314.

* $p < .01$ (all two tailed).

Separate multiple regression analyses were conducted for each of the three CSFT scales using backward selection. This process resulted in 10 steps for the Compassion Satisfaction dependent variable, nine steps for the Burnout variable, and 10 steps for the Compassion Fatigue dependent variable. Table 3 presents data from the final model for each variable.

Compassion Satisfaction

The final model included five predictor variables, accounting for 31% of the variance: training status, external coping, IRI Perspective Taking, IRI Empathic Concern, and IRI Personal Distress. Higher Compassion Satisfaction was associated with nontrainee status, use of external coping strategies, greater cognitive and affective empathy, and lower blurring of caregiver boundaries.

Burnout

The final model consisted of six predictor variables, accounting for 21% of the variance: years in direct care, internal coping, IRI Perspective Taking, IRI Personal Distress, nurse, and mental health provider. Higher Burnout was associated with more years in direct care and greater blurring

of caregiver boundaries, whereas lower Burnout was associated with nurses, mental health providers, and cognitive empathy.

Compassion Fatigue

The final model included five predictor variables, accounting for 15% of the variance: years in direct care, internal coping, IRI Perspective Taking, IRI Fantasy, and IRI Personal Distress. Greater Compassion Fatigue was associated with more years in direct care and greater blurring of caregiver boundaries, whereas lower Compassion Fatigue was associated with greater cognitive empathy.

DISCUSSION

This study was undertaken to better understand how exposure to secondary trauma during routine provision of medical care affects hospital-based pediatric health care providers. The results suggest that overall this sample endorsed a level of Compassion Fatigue similar to that of Trauma Workers. Furthermore, 39% of the sample were at moderately to extremely high risk for Compassion Fatigue, and 21% were at moderate to high risk for Burnout, suggesting a good deal of risk amongst individuals in the sample. Children's hospital physicians endorsed greater Burnout than professionals in the other two comparison groups, whereas nurses endorsed greater Burnout than the Trauma Workers group. Within the children's hospital sample, trainees endorsed less Compassion Satisfaction, part-time employees endorsed greater Compassion Satisfaction, and physicians reported greater Burnout. Regression analysis indicated that there were significant individual factors placing individuals at greater risk for Burnout and Compassion Fatigue, most notably greater years in direct care and aspects of empathy, in particular, the affective blurring of boundaries between self and patient.

Overall, the CH sample endorsed Compassion Fatigue at a level similar to that of other Trauma Workers, supporting our hypothesis that this provider population is at risk for STS. Figley (1995) has advocated that STS should be viewed as an "occupational hazard." Badger (2001), amongst others, subsequently has applied a trauma exposure framework to nursing practice. Increasing the awareness of the effects of routine and ongoing trauma exposure (short and long term) and outlining strategies to lessen the harmful effects, including self-care techniques, informal support,

Table 3. Regression Analysis Summary for Variables Predicting Compassion Satisfaction, Burnout, and Compassion Fatigue

Variable	Unstandardized Coefficient		β
	B	SE	
Compassion Satisfaction ($R^2 = .31$)			
Trainee status	-4.46	1.64	-.13*
External Coping	.42	.17	.12*
IRI Perspective Talking	.45	.17	.14*
IRI Empathic Concern	.97	.18	.29***
IRI Personal Distress	-1.04	.15	-.35***
Burnout ($R^2 = .21$)			
Years in direct care	.18	.07	.14*
Internal Coping	.38	.19	.11
IRI Perspective Talking	-.44	.14	-.17*
IRI Personal Distress	.88	.13	.36***
Mental health provider	-5.10	1.78	-.16*
Nurse	-4.52	1.22	-.21***
Compassion Fatigue ($R^2 = .15$)			
Years in direct care	.22	.08	.14**
Internal Coping	.54	.23	.14
IRI Perspective Talking	-.43	.17	-.15*
IRI Fantasy	.34	.12	.16**
IRI Personal Distress	.84	.16	.30***

IRI = Interpersonal reactivity index.

* $p < .01$.

** $p < .001$.

*** $p < .000$ (all two tailed).

formal psychotherapy, education, and maintenance of realistic goals, are advocated. The relationships between Compassion Satisfaction and Compassion Fatigue require further empirical study. There is some evidence that Compassion Satisfaction is a protective factor and acts as a buffer to protect health care workers from the effects of witnessing trauma (Collins & Long, 2003; Saakvitne & Pearlman, 1996). Although not the focus of this study, the potentially protective nature of high satisfaction with caregiving within pediatric hospital providers could be further explored.

The results suggest a differential impact of exposure to job-related trauma according to the four professional groups identified. Amongst the physician and allied health groups, higher levels of Burnout (e.g., feeling overburdened with patient care and a very high workload) yet normative levels of Compassion Satisfaction were simultaneously reported. Nurses reported greater Compassion Satisfaction, even when also reporting greater Burnout, compared to a sample of trauma workers.

There are a number of possible explanations for these results. Having close and ongoing contact with patients and families has been documented to provide a sense of purpose and connection; it is thus possible that nurses in our sample may have derived job satisfaction from having close relationships with patients and families, creating a buffer effect (Barnsteiner & Gillis-Donovan, 1990). Physicians, by nature of their role and responsibilities, have less sustained patient contact. This sense of connection (Saakvitne & Pearlman, 1996) amongst nurses may also act as a buffer against the witnessing of patient-related trauma, as well as the negative effects of a highly paced work environment. As previously stated, there is evidence that Compassion Satisfaction is a protective factor which acts as a buffer and protects health care workers from the effects of working with daily trauma (Collins & Long, 2003; Saakvitne & Pearlman, 1996). Thus, it is possible that high levels of Compassion Satisfaction in our nursing sample group balanced the exposure to trauma and may have moderated the experience of STS. Future studies could explore patient-provider relationships and better understand the buffering effect of connection in the midst of stressful aspects of providing care (Tracy & Ceronsky, 2001).

Number of years in direct care was predictive of higher levels of Burnout across the CH sample. A cumulative stress model best explains this finding. Here, greater exposure over time to the

traumatic experiences of others is associated with higher risk of symptomatic distress (Figley, 1995; Weiss et al., 1995).

Factors Associated With Compassion Satisfaction, Burnout, and Compassion Fatigue

Coping strategies used by individuals when facing stressful situations were related to Compassion Satisfaction, but only for External Coping. It is possible that health care professionals who endorsed greater reliance on coping strategies such as “I get help and advice from other people” and “I get emotional support from others” received more personal satisfaction from caring for patients, even when exposed to trauma. Strategies promoting connection to others may be effective in a busy, fast-paced medical setting, as the prevention and intervention literature emphasizes the importance of connection to others as an antidote to stressful caregiving (Saakvitne & Pearlman, 1996). On the other hand, neither Internal nor External Coping was significantly predictive of Burnout or Compassion Fatigue.

Spirituality was not related to Compassion Satisfaction, Burnout, or Compassion Fatigue. Seventy-seven percent of the sample reported on the demographic questionnaire that they identify with an organized religion. Although spirituality was highly endorsed by the study population, as evidenced by scores on the SIBS ($M = 82.7$, $SD = 16.7$), it was not related to the cumulative effects of witnessing patient/family trauma in a medical setting. It is possible that study participants, while acknowledging religion and spirituality in their lives, did not bring their spirituality into the work setting, thus representing a possible disconnect between spiritual beliefs and work-related spiritual practice, as represented by the items of the SIBS.

In this study, the construct of empathy was strongly related to differences in Compassion Satisfaction, Burnout, and Compassion Fatigue. More specifically, measures of cognitive empathy (Perspective Taking and Empathic Concern) were positively predictive of Compassion Satisfaction, and Perspective Taking was negatively predictive of Burnout and Compassion Fatigue. On the other hand, measures of affective empathy (Fantasy and Personal Distress) were either negatively or not predictive of Compassion Satisfaction, but were positively predictive of higher Burnout and Compassion Fatigue. Empathy is not a unitary construct but consists of several dimensions (Davis, 1983).



It has been suggested that empathic engagement is a core dimension of and directly related to the experience of STS (Figely, 1995; Pearlman & Saakvitne, 1995). For example, affective empathy can leave one more vulnerable to STS reactions, as providers may experience patients' emotions as similar to their own (Sabin-Farrell & Turpin, 2003), thus blurring patient-provider therapeutic boundaries (Barnsteiner & Gillis-Donovan, 1990). This study thus adds to the literature supporting the connection between empathy and STS. Empathy can be viewed as a double-edged sword, as it is paradoxically related to indices of satisfaction with caregiving but also burnout and STS.

Limitations

There are a number of limitations in this study that must be considered. Due to the multiple comparisons performed and the overall large sample size obtained, there is risk of overinterpreting the data, even with a more conservative p value. This leads to questions of statistical versus clinical significance. That is, although a difference between two groups in a large sample is statistically significant, there may not be an observable difference that is clinically meaningful. There is also limited research demonstrating the validity of the CSFT in general (Jenkins & Baird, 2002; Sabo, 2006), and the construct validity of the CSFT has not been established in a pediatric provider population. The Burnout and Compassion Fatigue scales shared common items in our sample, based on the noteworthy interscale correlation. The high correlation between the Burnout and Compassion Fatigue subtests likely reflects lack of conceptual clarity in the STS literature and issues related to temporal sequencing of these constructs. In addition, the Internal Coping factor scale of the Brief Cope had a coefficient alpha of .45 for this sample. Thus, results involving coping and its relation to Compassion Satisfaction, Burnout, and Compassion Fatigue should be viewed as qualified. There are also limitations related to the comparison samples; there was no similar normative group of hospital providers, necessitating the use of comparison data consisting of other trauma workers and health professionals. In addition, we obtained a self-selected as opposed to stratified sample of our hospital health care providers. Although this sample approximated our hospital population, selection bias might have been introduced. Finally, because of the interrelationships between the constructs of compassion fatigue, burnout, and

compassion satisfaction, further exploration and clarification of these domains are needed. For example, burnout might be a risk factor or precursor to compassion fatigue (Pearlman & Saakvitne, 1995; Sabo, 2001), whereas compassion satisfaction may act as a protective buffer to compassion fatigue.

Clinical Implications and Future Directions

This is the first known study to directly assess the experience of STS among health care professionals in a tertiary pediatric health care setting. The study provides initial empirical evidence that a subgroup of pediatric health care professionals were at greater risk for burnout and similar risk for compassion fatigue than were trauma workers, in particular, individuals with higher rates of affectively mediated empathy and greater years in direct care. As nurses represented 43% of our sample, the results are particularly salient with respect to both pediatric nursing education and practice.

Results indicate a number of predictor variables related to both positive and negative reactions to stressful caregiving and trauma exposure; these variables are hypothesized to place individuals along a risk continuum. Cognitive empathic engagement with children and families may operate as a protective factor against the effects of burnout and compassion fatigue. Conversely, higher degrees of affectively mediated empathy may increase the experience of STS.

Providers may be reluctant to acknowledge secondary trauma exposure. It is worth exploring whether there exists an implicit "culture of silence"—that is, the belief that STS may signal a professional weakness. The taboo of acknowledging STS may be part of the "can-do" culture of the hospital, and a by-product of the education received. Future research specifically addressing barriers in recognizing and acknowledging the impact of STS is indicated.

Further research might investigate the impact of hospital leadership acknowledging STS as a potential occupational hazard, normalizing, and offering support for this experience during new employee orientation and periodically during unit or nursing wide meetings. The impact of providing legitimate forums for increasing the connection between nurses as an "antidote" to working in a fast-paced, stressful environment, such as opportunities to take a break from patient care and focus on thoughts and feelings, particularly

following discrete exposure to medical trauma, could also be investigated. Finally, institutional support of stress management and work–life balance, such as planned time off and good self-care, could be studied as important steps to decrease the negative effects of STS upon providers within this setting.

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