

Original Article

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# A cross-sectional pilot study of compassion fatigue, burnout, and compassion satisfaction in pediatric palliative care providers in the United States

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## Abstract

**Objective.** Compassion fatigue (CF) is secondary traumatic distress experienced by providers from contact with patients' suffering. Burnout (BO) is job-related distress resulting from uncontrollable workplace factors that manifest in career dissatisfaction. Compassion satisfaction (CS) is emotional fulfillment derived from caring for others. The literature on BO in healthcare providers is extensive, whereas CF and CS have not been comprehensively studied. Because of ongoing exposure to patient and family distress, pediatric palliative care (PPC) providers may be at particular risk for CF. We conducted a cross-sectional pilot study of CF, BO, and CS among PPC providers across the United States.

**Method.** The Compassion Fatigue and Satisfaction Self-Test for Helpers and a questionnaire of professional and personal characteristics were distributed electronically and anonymously to PPC physicians and nurses. Logistic and linear regression models for CF, BO, and CS as a function of potential risk factors were constructed.

**Results.** The survey response rate was 39%, primarily consisting of female, Caucasian providers. The prevalence of CF, BO, and CS was 18%, 12%, and 25%, respectively. Distress about a "clinical situation," physical exhaustion, and personal loss were identified as significant determinants of CF. Distress about "coworkers," emotional depletion, social isolation, and "recent involvement in a clinical situation in which life-prolonging activities were not introduced" were significant determinants of BO. Physical exhaustion, personal history of trauma, "recent involvement in a clinical situation in which life-prolonging activities were not introduced," and not discussing distressing issues were significant predictors of lower CS scores.

**Significance of results.** CF and BO directly influence the well-being and professional performance of PPC providers. To provide effective compassionate care to patients, PPC providers must be attentive to predictors of these phenomena. Further work is needed to explore additional causes of CF, BO, and CS in PPC providers as well as potential interventions.

## Introduction

Pediatric palliative care (PPC) is a unique specialty that focuses on care for children and families facing serious, potentially life-limiting illness. PPC providers are continuously exposed to emotionally demanding clinical experiences. These providers may be asked to join a child's primary healthcare team to explore goals of care and help with critical decision-making, often surrounding ethically complex issues that potentially involve end-of-life care. PPC providers are frequently involved when a family's suffering is particularly intense (Berger et al., 2015; Korones, 2007; Rourke, 2007). Although experiencing the death of any patient is traumatic, facing the death of a child is more distressing than the death of an adult (Christ et al., 2003; Fromer, 2004). Yet, despite these many challenges, PPC providers frequently report high levels of job satisfaction. PPC providers play a key role in alleviating pain and managing patient distress while helping families navigate complex medical conditions. Often, PPC providers follow children and families over long periods and develop close provider-patient relationships. Thus, although PPC may be distressing at times, providers find it to be a rewarding specialty given the profound impact that they make on the lives of children facing life-threatening illness (Korones, 2007; Korzeniewska-Eksterowicz et al., 2010; Liben et al., 2008).

Compassion fatigue (CF) is secondary traumatic stress experienced by providers through repeated exposure to their patients' suffering (Figley, 1995a, 1995b, 1999). Burnout (BO) is occupational distress because of uncontrollable workplace factors that manifest as career dissatisfaction and the sentiment of being overworked (Kamal et al., 2016; Kavalieratos et al., 2017; Lee et al., 2016; Maslach & Jackson, 1981). In healthcare providers, CF and BO can independently lead to emotional exhaustion, depression, frustration, depersonalization,

and sense of loss in one's achievements, as well as adversely affect patient care (Meadors & Lamson, 2008; Sanchez-Reilly et al., 2013; van Mol et al., 2015). In contrast, compassion satisfaction (CS) has been defined as emotional fulfillment derived from caring for patients (Stamm, 2002).

These three phenomena can have a profound impact on both the personal well-being and professional performance of healthcare providers. Although the body of literature on BO in healthcare providers is vast, CF and CS have not yet been comprehensively studied (Baer et al., 2017; Dréano-Hartz et al., 2015; Dyrbye et al., 2013, 2014; El-bar et al., 2013; Garcia et al., 2014; Parola et al., 2016; Shanafelt et al., 2012, 2015). The prevalence of CF, BO, and CS in PPC providers is not currently known. Because of frequent exposure to patient and family distress, PPC providers may be at particularly high risk for CF. Because one-third to one-half of all physicians experience BO at some point in their careers (Shanafelt et al., 2015), PPC providers may experience BO to a similar extent. As job satisfaction and positive professional experiences have been linked to higher CS (Hooper et al., 2010; Smart et al., 2013) and PPC providers generally report high job satisfaction and find their work rewarding (Beaune et al., 2017; Korzeniewska-Eksterowicz et al., 2010), PPC providers may experience high CS despite the challenges of their discipline. We conducted a cross-sectional pilot study with the goals to (1) determine the prevalence of CF, BO, and CS among PPC providers and (2) identify potential predictors of these phenomena in this population.

## Methods

### Participants

A list of potential study participants was created from a list of accredited programs for PPC available from the American Academy of Pediatrics, Section on Pediatric Hospice and Palliative Care, and from the Children's Hospital Directory (Denney-Koelsch, 2015). Internet websites for 248 institutions nationwide were searched for current PPC provider e-mail addresses; 96 of these institutions did not list any PPC providers.

### Instruments

The Compassion Fatigue and Satisfaction Self-Test for Helpers (CFST) is a validated and reliable 66-item instrument with three subscales designed to measure potential for CF, BO, and CS (Figley, 1995a, 1995b, 1996; Stamm, 2002). For the current study, some language in the CFST was modified to appropriately reflect the role of the participant as a medical caregiver, rather than a "helper" to a "victim" (Figley, 2014; Weintraub et al., 2016). In addition, items that used the words "violence" or "perpetrator" were eliminated because these statements were not germane to the practice of medicine. As previously described in Weintraub et al. (2016), the final modified CFST was composed of 54 statements, with 18, 13, and 23 items on the CF, BO, and CS subscales, respectively (Appendix 1). In addition, as previously described in Weintraub et al. (2016), a 38-item questionnaire of professional details and personal characteristics was used to identify potential risk factors for development of CF and BO (Appendix 2). The elements of the questionnaire were developed by a focus group of senior neonatology faculty (Weintraub et al., 2016). The CFST and questionnaire were modified for use in the current study by a focus group of PPC providers; in particular,

discipline-specific attention was paid to adapting the four hypothetical difficult clinical scenarios included in the questionnaire for use in PPC providers.

A brief description of the study with a hyperlink to the CFST and questionnaire was distributed electronically via SurveyMonkey. The invitation to participate was re-sent to non-responders every 2 weeks for a total of five attempts. The individual survey responses were collected anonymously by SurveyMonkey.

### Data analysis

Individual survey responses were downloaded, coded, and entered into SPSS Statistics, version 22 (IBM, Armonk, NY). As previously described by Weintraub et al. (2016), subscale scores for CF, BO and CS were summed. For each subscale, reliability was evaluated using Cronbach's alpha and normality was assessed by kurtosis, skew, and histogram analysis. Descriptive statistics were calculated for subscale scores and questionnaire responses. Pearson's *r* and Spearman's rho were used to examine correlations between subscales and to identify relationships between study variables.

Subscale scores were analyzed two ways: as dichotomous outcomes with a defined high-end cutoff point for each scale, and as continuous outcomes, as previously described by Weintraub et al. (2016). To set the cutoff point for each scale, a numeric score 1 standard deviation above the subscale mean, a numeric score greater than the 75th percentile for each subscale, and visual inspection of the histogram generated for each subscale were each evaluated. Appraisal of the histogram for each subscale revealed a natural high-end cut point that fell between 1 standard deviation above the mean and the 75th percentile. These natural cutoff points were used to define the presence or absence of CF, BO, and high CS for categorical analyses. For each subscale, univariate analyses of personal and professional characteristics as a function of scores above and below the cutoff point were performed using chi-square, Fisher's exact, or independent *t* tests as appropriate. Both logistic (using score dichotomized at the cutoff point) and linear regression (using score as a continuous variable) models for CF, BO, and CS as a function of predictors found to be significant in univariate analysis were constructed (Weintraub et al., 2016). For each model, each factor found to be significant at  $p < 0.1$  in univariable analyses was added one after the other, and if the model improved significantly ( $p < 0.05$ ) with its inclusion, was retained.

This project was designated as exempt human research by the Institutional Review Board at the Icahn School of Medicine at Mount Sinai.

### Results

Of the 520 surveys delivered by SurveyMonkey, 202 responses were returned (39% response rate). Of these, one individual declined to participate and eight participants returned a blank survey. Forty-three surveys were excluded because the participant had not completed the CFST and thus the study phenomena could not be evaluated. This left a final study population of 150 individuals (physicians,  $n = 102$ ; nurses/nurse practitioners,  $n = 43$ ; chaplains,  $n = 2$ ; psychologists,  $n = 2$ ; child life,  $n = 1$ ).

Characteristics of the study population are shown in Table 1. The majority of participants were female, Caucasian, and lived with a partner and/or children. Sixty-eight percent were physicians, more than half of whom were board-certified in Hospice

**Table 1.** Characteristics of the study population

Personal and professional characteristics	n/N (%)
Role	
Physician	102/150 (68)
Nurse/nurse practitioner	43/150 (28.7)
Other (chaplain, child life specialist, psychologist)	5/150 (3.3)
Sex, female	111/148 (75)
Race, Caucasian	134/147 (91.2)
Current household members	
Partner or spouse	122/149 (81.9)
Child(ren)	84/149 (56.4)
Lives alone	15/149 (10)
Years as PPC provider	
0–10 (junior)	100/143 (70)
11–20 (mid-career)	32/143 (22.4)
≥21 (senior)	11/143 (7.7)
Years as provider in another specialty	
0–10 (junior)	68/124 (54.8)
11–20 (mid-career)	30/124 (24.2)
≥21 (senior)	26/124 (21)
Formal training in	
Palliative care	121/149 (81.2)
Breaking difficult news	110/148 (74.3)
End-of-life care	116/149 (77.9)
Self-care	82/148 (55.4)
Involved in the following activities in the past month	
PPC consult for child facing end-of-life decisions	136/149 (91.3)
Withdrawal of life-sustaining therapies	113/146 (77.4)
Non-introduction of life-prolonging therapies	116/146 (79.5)
Death of a patient	116/144 (80.6)
Current feelings of distress ascribed to	
Clinical situation	18/150 (12)
Physical work environment	18/150 (12)
Coworkers	40/150 (26.7)
Personal/health issues	50/149 (33.6)
No current distress	36/150 (24)
Physically exhausted in the past 2 weeks	41/150 (27.3)
Emotionally depleted in the past 2 weeks	21/150 (14)
Self-care activities	
Talk about distressing issues	130/150 (86.7)
Exercise	91/150 (60.7)
Prayer/meditation	65/150 (43.3)
Engage in the creative arts	74/150 (49.3)
Socialize with friends or family	123/150 (82)
Self-care not a priority	5/150 (3.3)

(Continued)

**Table 1.** (Continued.)

Personal and professional characteristics	n/N (%)
Personal history of any trauma	71/150 (47.3)
Recent loss of loved one	43/150 (28.7)
Survived life-threatening illness	19/150 (12.7)
Domestic/criminal violence	11/150 (7.3)
Natural disaster, war, terrorist attack	4/150 (2.6)
Other	10/150 (6.7)

PPC, pediatric palliative care.

and Palliative Medicine. Seventy percent of participants had been PPC providers for less than 10 years. The overwhelming majority of participants reported having received some type of formal training in breaking difficult medical news (74%), palliative care (81%), and end-of-life decision-making (78%). Nearly three-quarters of participants reported feeling “currently distressed” about some aspect of their personal or professional lives, and concurrent physical exhaustion and emotional depletion were reported by 27.3% and 14% of participants, respectively. These percentages for physical fatigue and emotional depletion are comparable to those reported in our recent survey of neonatal intensive care physicians (Weintraub et al., 2016). The scope of self-care activities practiced by the study population is provided in Table 1. Because survey data were collected without any participant identifiers, no characterization of non-responders could be undertaken.

The characteristics of the modified CFST are presented in Table 2. Cronbach alpha values were 0.857 for CF, 0.795 for BO, and 0.904 for CS, which indicated reliable scales and were comparable to the alpha values obtained for the both original instrument (Stamm, 2002) and our previously described modified instrument (Weintraub et al., 2016). Scores on the three subscales were normally distributed. Not surprisingly, a strong positive correlation was identified between CF and BO scores (shared variance = 48%), and strong negative correlations were demonstrated between CS and BO scores and between CF and CS scores (shared variances = 43% and 25.6%, respectively). Because of the large shared variance between physical exhaustion and emotional depletion (21%), each of these risk factors was tested separately in all models.

The prevalence of CF in the study population was 18% (95% confidence interval [CI<sub>95%</sub>], 12, 24), with no significant difference in prevalence between physicians and nurses (15.7% vs. 20.9% respectively,  $p = 0.60$ ). In univariable analyses, the following personal and professional factors were significantly different in individuals with and without CF: distress from “a clinical situation” or “coworkers,” recent physical exhaustion and/or emotional depletion, recent personal loss, and personal history of trauma. Logistic and linear regression analyses to assess the impact of factors found to be significant in univariate analyses of CF are presented in Table 3. The logistic regression model for CF contained three independent variables (distress from a “clinical situation,” physical exhaustion, and recent personal loss). The full model containing all predictors was statistically significant (chi-square [3,  $n = 150$ ] = 27.31,  $p < 0.001$ ), indicating that the model was able to distinguish between respondents who scored above and below the high-end cutoff score for CF. Pseudo  $R^2$  measures (Cox and Snell's  $R^2$  and Nagelkerke  $R^2$ ) explained between

**Table 2.** Characteristics of the modified CFST

Subscale	Mean score $\pm$ SD	$CI_{95\%}$	Median score, IQR	Range
Compassion fatigue	17.94 $\pm$ 9.77	16.29, 19.43	16 (11–23)	2–49
Burnout	17.57 $\pm$ 8.05	16.25, 18.83	17 (12–23)	1–41
Compassion satisfaction	89.73 $\pm$ 12.39	87.79, 91.79	91 (81–99)	53–115

$CI_{95\%}$ , 95% confidence interval; CFST, Compassion Fatigue and Satisfaction Self-Test for Helpers; IQR, interquartile range; SD, standard deviation.

16.6% and 27.3% of the variance in CF, and correctly classified 83.3% of cases. All three factors made a unique statistical contribution to the model. The strongest predictor for CF was distress from a “clinical situation” (odds ratio [OR], 8.09;  $CI_{95\%}$ , 2.42, 27.04;  $p < 0.001$ ), followed by physical exhaustion (OR, 3.8;  $CI_{95\%}$ , 1.41, 10.23;  $p < 0.008$ ), and recent personal loss (OR, 4.58;  $CI_{95\%}$ , 1.72, 12.18;  $p < 0.002$ ). When the numeric CF score was modeled by linear regression (using CF score as a continuous variable) as a function of significant predictors, all three factors found to be significant in the logistic model remained significant

predictors in the linear model. The total variance explained by the linear model was 25.5%, and the model as a whole was statistically significant (analysis of variance [ANOVA] [ $F$  3, 146] = 16.68,  $p < 0.001$ ).

The prevalence of BO in the study population was 12% ( $CI_{95\%}$ , 6.8, 17.2), again with no significant difference in prevalence between physicians and nurses (14.7% vs. 4.7% respectively,  $p = 0.15$ ). In univariable analyses, the following factors were significantly different in individuals with and without BO: distress from “the physical work environment” or “coworkers,” recent

**Table 3.** Logistic and linear regression analyses associated with CF, BO, and CS in the study population

Logistic regression models	OR ( $CI_{95\%}$ )	$p$	
CF subscale			
Currently distressed about “clinical situation”	8.09 (2.42, 27.04)	0.001	
Noteworthy physical exhaustion in past 2 weeks	3.80 (1.41, 10.23)	0.008	
Recent personal loss	4.58 (1.72, 12.18)	0.002	
BO subscale			
Currently distressed about “coworker(s)”	3.2 (1.04, 9.88)	0.043	
Noteworthy emotional depletion in past 2 weeks	11.60 (1.34, 15.07)	0.012	
CS subscale			
Not currently feeling distressed	5.68 (2.34, 13.80)	0.000	
Involved in the non-introduction of life-prolonging therapies in the past month	0.13 (0.03, 0.62)	0.010	
Linear regression models	Coefficient $\pm$ SE	$CI_{95\%}$	$p$
CF subscale			
Currently distressed about “clinical situation”	7.79 $\pm$ 2.14	3.56, 12.02	0.000
Noteworthy physical exhaustion in past 2 weeks	7.85 $\pm$ 1.56	4.76, 10.94	0.000
Recent personal loss	5.01 $\pm$ 1.54	1.98, 8.05	0.001
BO subscale			
Currently distressed about “coworker(s)”	5.65 $\pm$ 1.24	3.19, 8.10	0.000
Noteworthy emotional depletion in past 2 weeks	9.34 $\pm$ 1.60	6.17, 12.5	0.000
Socialize with friends/family as self-care activity	-3.49 $\pm$ 1.43	-6.32, -0.66	0.016
Involved in the non-introduction of life-prolonging therapies in the past month	3.53 $\pm$ 1.34	0.89, 6.17	0.009
CS subscale			
Not currently distressed	9.55 $\pm$ 2.05	5.50, 13.60	0.000
Don't talk about distressing issues as self-care	-14.25 $\pm$ 5.44	-25.0, -3.51	0.010
Noteworthy physical exhaustion in past 2 weeks	-7.4 $\pm$ 1.97	-11.28, -3.51	0.000
Involved in the non-introduction of life-prolonging therapies in the past month	-6.05 $\pm$ 2.14	-10.29, -1.81	0.005
Personal history of trauma	-4.40 $\pm$ 1.74	-7.85, -0.95	0.013

Abbreviations: BO, burnout; CF, compassion fatigue;  $CI_{95\%}$ , 95% confidence interval; CS, compassion satisfaction; OR, odds ratio; SE, standard error. Significant at  $p < 0.05$ .

physical exhaustion and/or emotional depletion, children in the household, personal history of criminal or domestic violence, and social interaction as a self-care activity. Regression analyses to assess the impact of factors significant in univariate analyses of BO are presented in Table 3. The logistic model for BO contained two independent variables (distress attributed to “coworkers” and emotional depletion). The full model was statistically significant (chi-square [2,  $n = 150$ ] = 25.05,  $p < 0.001$ ). Pseudo  $R^2$  measures (Cox and Snell’s  $R^2$  and Nagelkerke  $R^2$ ) explained between 15.4% and 29.6% of the variance in BO, and correctly classified 89.3% of cases. Both predictors made a unique statistical contribution to the model. When the numeric BO score was modeled by linear regression, feelings of distress attributed to “coworkers,” emotional depletion, and “recent involvement in a clinical situation in which life-prolonging activities were not introduced” were determinants of higher BO scores, whereas social interaction as a self-care activity was predictive of lower scores. The total variance explained by the linear model was 37.5%, and the model as a whole was statistically significant (ANOVA [F 4, 141] = 21.11,  $p < 0.001$ ).

The prevalence of high CS in the study population was 25% (CI<sub>95%</sub>, 18, 32%), with no significant difference in prevalence between physicians and nurses (5.9% vs. 7% respectively,  $p = 0.725$ ). In univariable analyses, the following predictors were significantly different in individuals with and without high CS: self-report of “no current distress,” physical exhaustion and/or emotional depletion, and “recent involvement in a clinical situation in which life-prolonging activities were not introduced.” Regression analyses to evaluate the impact of factors significant in univariate analyses of high CS are presented in Table 3. The logistic model for high CS contained two independent variables (self-report of “no current distress” and “recent involvement in a clinical situation in which life-prolonging activities were not introduced”). The full model was statistically significant (chi-square [2,  $n = 150$ ] = 22.86,  $p < 0.001$ ). Pseudo  $R^2$  measures (Cox and Snell’s  $R^2$  and Nagelkerke  $R^2$ ) explained between 14.5% and 21.7% of the variance in high CS, and correctly classified 78.1% of cases. Both predictors made a unique statistical contribution to the model. When the numeric CS score was modeled by linear regression as a function of significant factors, self-report of “no current distress” was a significant predictor of higher CS scores, whereas physical exhaustion, personal history of trauma, “recent involvement in a clinical situation in which life-prolonging activities were not introduced,” and not talking about distressing issues were significant determinants of lower CS scores. The total variance explained by the linear model was 32.9%, and the model as a whole was statistically significant (ANOVA [F 4, 140] = 13.75,  $p < 0.001$ ).

## Discussion

In this cross-sectional pilot study of PPC physicians and nurses, we identified the prevalence of CF, BO, and high CS as 18%, 12%, and 25%, respectively. We present the first evaluation of potential predictors of these phenomena in this population.

Although studies have suggested risk factors for CF in adult PPC providers, prevalence and potential predictors of CF in PPC providers have not been previously reported (Galiana et al., 2017; Sanso et al., 2015; Slocum-Gori et al., 2011). In studies of mixed populations of pediatric healthcare providers, the prevalence of CF has been reported at 10–40% (Berger et al., 2015;

Branch & Klinkenberg, 2015; El-bar et al., 2013; Meadors et al., 2009; Robins et al., 2009; Sinclair et al., 2017; Weintraub et al., 2016). At 18%, the prevalence of CF in our study population was quite low and fell slightly below the mid-range presented previously for pediatric providers. This suggests our original concern that PPC providers are at particularly high risk for CF may not be warranted.

We found that feeling distressed about a “clinical situation,” physical exhaustion, and recent personal loss were each unique predictors of CF. Because clinical situations involving children with life-limiting or terminal illness can be traumatic for any member of the healthcare team, it is not surprising that PPC providers reported distress about such situations. Interestingly, despite the established connection between CF and one’s emotional state, in our study, emotional depletion and involvement in the emotionally challenging clinical scenarios we posed were not predictors of CF. It may be that PPC providers routinely engage in self-care activities that help ameliorate the emotional burden common to the sub-specialty (Kobler, 2014; Maytum et al., 2004; Rourke, 2007; Sanchez-Reilly et al., 2013).

The prevalence of BO in pediatric generalists and sub-specialists has been cited at 27–50%, with the highest prevalence in pediatric intensivists (Baer et al., 2017; Garcia et al., 2014; Shanafelt et al., 2015; Starmer et al., 2016). At 12%, the prevalence of BO in our study population was extremely low, and fell well below this range. Feelings of distress about “coworkers,” emotional depletion, social isolation, and “recent involvement in a clinical situation in which life-prolonging activities were not introduced” were each identified as unique predictors of BO.

Some studies have suggested that collegial professional relationships among PPC providers are protective against the negative aspects of demanding clinical work (Beaune et al., 2017), which may help account for the low prevalence of BO in our study population. However, in our study population, distress related to “coworkers” was an independent predictor of BO. How can we reconcile this finding? Members of the primary healthcare team may be uncomfortable dealing with end-of-life care issues in children with chronic illness (Zimmermann, 2007). As a result, despite supportive relationships among PPC colleagues, PPC providers may face oppositional attitudes from the primary healthcare team regarding a patient’s end-of-life care, which, over time, could contribute to BO. Surprisingly, we found only one of the four challenging clinical scenarios to be predictive of BO. Why only one of four scenarios was predictive is unclear. PPC providers may have a protective innate level of resilience that counterbalances the challenging nature of these clinical situations. Further study is needed to understand how strengthening resilience may offset BO (Mehta et al., 2016). Finally, in our population, BO was not related to objective indices of perceived work demands, as has been previously reported (Dyrbye et al., 2013; Lee et al., 2016).

Few studies have examined the prevalence and predictors of CS in healthcare providers; therefore, we cannot frame our prevalence of high CS within the context of other pediatric populations at this time. Because PPC providers tend to report high levels of job satisfaction and find their work rewarding (Beaune et al., 2017; Korzeniewska-Eksterowicz et al., 2010), it is possible that they may be able to experience high CS despite the challenges of the discipline. Not surprisingly, self-report of “no current distress” and “not physically exhausted” were predictive of high CS in our study population. Of note, no “recent involvement in a clinical situation in which life-prolonging activities were not introduced” was also an independent predictor of high CS. This

relationship is curious, and it is not entirely clear why this one particular challenging clinical scenario was predictive. Last, in our population, we observed a negative correlation between CS and CF and between CS and BO, which has been previously reported in other populations (Meadors & Lamson, 2008; Meadors et al., 2009; Slocum-Gori et al., 2011; El-bar et al., 2013; Weintraub et al., 2016).

Self-care activities are a critical counterbalance to both recurrent traumatic clinical experiences and occupational angst (Sanchez-Reilly et al., 2013; Sanso et al., 2015). Our data further this understanding by illustrating that social engagement may help ameliorate BO, and “talking about distressing issues” as a self-care activity may independently enhance CS. In our study population, almost all individuals who reported “talking about distressing” issues as a self-care activity confided in colleagues (95%); fewer individuals reported confiding in partners (58.5%), friends (38.5%), family members (26.2%), mental health professionals (15.4%), and clergy (4.6%). Unfortunately, we do not have data on the content of these conversations, nor do we know what providers found most helpful about these discussions. This is an area that should be explored further.

The goals of interventions that reduce CF and BO and enhance CS are to bolster provider well-being and improve patient care (Slocum-Gori et al., 2011; Stamm, 2002; Tremblay & Messervey, 2011). Successful intervention strategies may not be “one size fits all” for every provider across disciplines. Scheduled group “debriefings” after challenging clinical situations to provide a safe environment to frame and process distress may be one strategy to strengthen CS, while decreasing CF and BO. Additionally, mindfulness exercises have been shown to reduce BO in health-care providers (Back et al., 2016; O’Mahony et al., 2016; Panagioti et al., 2017; West et al., 2016). Despite the positive impact of self-care activities on well-being, training programs have been slow to emphasize self-care (Sanchez-Reilly, 2013). To better prepare providers for potentially traumatizing clinical experiences, the American Academy of Pediatrics established the “Resilience in the Face of Grief and Loss Curriculum” (Serwint et al., 2016). However, the effects of such programs on CF, BO, and CS in populations such as PPC providers are unknown and require further investigation.

There are several limitations to our study. Of the 248 institutions searched for PPC provider contacts, only 152 facilities had accessible information. Because of the nature of how SurveyMonkey collects anonymous responses, it was not possible to determine how many of the 152 institutions were represented in our sample. In addition, contact information listed online may be outdated; as such, despite a decent survey response rate, it is possible that our response rate was actually higher than our calculation (Cunningham et al., 2015). There is a risk of non-response bias. Because survey data were collected without participant identifiers, no characterization of non-responders could be undertaken, so it was not possible to compare those who responded to the survey with those who did not. It may be that individuals at greatest risk for CF or BO were less likely to participate in the study, or the reverse may be true. Our use of the CFST to study CF, BO, and CS precludes the direct comparison of our BO data to BO studies that use the Maslach Burnout Inventory. The generalizability of our findings is limited by the small sample size and by the fact that the majority of respondents were physicians, Caucasian, female, and PPC providers for less than 10 years. Because of the time frame of self-reflection imposed by the survey instrument, there may be bias toward more acute

symptoms. Because of the need to limit the survey length, some potentially significant predictors may not have been included. Although identified factors accounted for 25.5%, 37.5%, and 33% of the variance in CF, BO, and CS scores, respectively, two-thirds to three-quarters of the variance in these scores has yet to be explained. Finally, our findings are observed associations to which causality cannot be applied.

In conclusion, we have identified the prevalence of CF, BO, and CS, and determined independent significant predictors of these phenomena in our study population of PPC providers. To provide compassionate and effective patient care, PPC providers must be attentive to predictors of these phenomena. To promote provider well-being, it is critical to not just prevent/reduce CF and BO, but also to promote CS. Lack of understanding and education about these phenomena may result in a myriad of personal and professional problems (e.g., provider health, decreased quality of care offered to patients, medical errors, personal and professional dissatisfaction) (Dyrbye et al., 2013; Figley, 1995a, 1995b; Lee et al., 2016; Maslach & Jackson, 1981; Shanafelt et al., 2012; Zeidner et al., 2013). Further work is needed to explore additional causes of CF, BO, and CS in PPC providers as well as potential interventions in the hope of decreasing distress, improving well-being, and enhancing satisfaction among providers.

**Supplementary material.** The supplementary material for this article can be found at <https://doi.org/10.1017/S1478951517001237>.

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