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Self-Compassion Buffers the Link Between Self-Criticism and Depression in Trauma-Exposed Firefighters

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Firefighters are frequently exposed to highly stressful, potentially traumatic events (PTEs). More than 50%, however, show no significant elevation in trauma-related symptomatology (e.g., depression). In the past, self-compassion has been discussed to promote psychological and behavioral flexibility that is vital to a successful adaptation to PTEs. The goal of this study was to understand whether and how self-compassion may alleviate personal suffering in the face of PTEs. We hypothesized that individuals who encounter their profession-related affective experiences with greater self-compassion, show lower levels of depressive symptoms because self-compassion buffers processes that perpetuate negative affectivity in response to PTEs (i.e., self-critical tendencies). Male firefighters (N = 123) completed self-report questionnaires about the severity of current depressive symptoms; prior traumatic, duty-related events; and the self-compassion scale that assesses two distinct factors: self-criticism and self-compassion. A stepwise regression model was employed to examine differential and interactive contributions of self-criticism and self-compassion to symptoms of depression across the cumulative range of exposure to PTEs. Our results indicate that the positive association between self-criticism and depression is buffered by enhanced levels of self-compassion. This moderation, however, only emerged for firefighters with substantial amounts of PTEs experience in the past. The present work provides insight into protective effects of self-compassion in the face of cumulative PTEs. It suggests that, particularly for severely trauma-exposed firefighters, self-compassion may confer resilience, that is, act as a protective factor from the development of depressive symptoms. Findings are discussed in light of counseling implications.

Public Significance Statement
This study examined how self-compassion may confer stress resilience in the face of potentially traumatic events (PTEs) in a sample of full-time firefighters. Our results suggest that individuals who encounter their affective experiences with greater self-compassion show lower levels of depression, indicating that self-compassion can buffer processes that perpetuate negative affectivity in response to PTEs. Self-compassion, therefore, should be regarded as an important target for early trauma-related counseling interventions in order to prevent the emergence of full-blown depressive episodes. Therefore, leveraging these abilities to enhance counseling outcomes for crisis intervention, disaster and trauma management in counseling psychology may benefit individuals that are considered at high risk for emergent depression symptomatology due to their frequent job-related exposure to PTEs.

Keywords: resilience, self-compassion, self-criticism, depression, firefighters

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> . . . before you know kindness as the deepest thing inside, you must know sorrow as the other deepest thing. . . . and then it goes with you everywhere like a shadow or a friend.
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> —Naomi Shihab Nye, *Kindness*, 1952

First responders, such as firefighters, are regularly exposed to traumatic stressors during their duties, including threats of violence, assaults, discovery of dead bodies or severely injured victims, and significant human suffering (Regambal et al., 2015; Regehr, Hill, Knott, & Sault, 2003; Stanley, Hom, & Joiner, 2016). The frequent exposure to multiple PTEs has been associated with increased risks for mental health problems in first responders (Buchanan, Stephens, & Long, 2001; see Heinrichs et al., 2005, on German firefighters), leading to a rise in counseling use (Berninger et al., 2010; Henderson, Van Hasselt, LeDuc, & Couwels, 2016; see also the Firefighter Life Safety Initiative #13 by the National Fallen Firefighters Foundation, 2016). Among the most frequent mental health problems are increased risks for depression (Alghamdi, Hunt, & Thomas, 2016; Anshel, 2000; Jacobsson,

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Backteman-Erlanson, Brulin, & Hörnsten, 2015) and depression-related symptoms (see Barger et al., (2015) or Stanley et al., (2016), on sleeping disorders or suicidal ideation). Beyond increased risks of depressive symptoms, firefighters are also at higher risk for harmful, symptom-perpetuating coping strategies such as experiential avoidance (Bacharach, Bamberger, & Doveh, 2008; Piazza-Gardner et al., 2014; Smith et al., 2011). In comparison to a group of healthy controls, prevalence rates for depression have been reported to be approximately 39.7% in samples of firefighters (Wagner, Heinrichs, & Ehlert, 1998) and thus four times as high as in the general population (German: Busch, Maske, Ryl, Schlack, & Hapke, 2013; U.S.: Kessler, Petukhova, Sampson, Zaslavsky, & Wittchen, 2012). However, this result also shows that more than half of the affected population maintain their mental health despite their occupationally inherent frequent exposure to PTEs. This phenomenon has been widely discussed as *stress resilience* (see, for example, Pietrzak et al., (2014), for a prospective study in first responders; Harvey, 2007).

Stress resilience may be called an umbrella term for mechanisms that chart enhanced situational adaptation and self-regulatory skills in response to stressful or even traumatic situations (e.g., Friedman et al., 2014; Harvey, 2007). The American Psychological Association defines resilience as "adapting well in the face of adversity, trauma, tragedy, threats or significant sources of stress—such as family and relationship problems, serious health problems or workplace and financial stressors" (American Psychological Association, 2017).

While we know that stress resilience may foster positive stress adaptation in the wake of frequent, occupation-related PTEs in first responders (Brown, Mulhern, & Joseph, 2002; Lee, Ahn, Jeong, Chae, & Choi, 2014), we still know too little about the mechanisms (e.g., tangible coping strategies) that enhance successful adaptation to PTEs. Existing literature suggests that such mechanisms may involve effects that buffer the experience of negative emotion in response to stressors (Ford, Lam, John, & Mauss, 2017; Matos, Duarte, Duarte, Pinto-Gouveia, & Gilbert, 2017; Neff, Hsieh, & Dejitterat, 2005), yet empirical evidence is still lacking. This knowledge, however, would have significant implications for the advance in trauma-related prevention and early (posttrauma) intervention by leveraging these abilities to enhance counseling outcomes in individuals that are considered at high risk for depression.

The emerging literature on counseling interventions for high risk populations emphasizes the need to understand self-compassion in the context of other resilience resources, particularly in populations that frequently face PTEs (Gilbert & Irons, 2004; Gilbert & Procter, 2006; first responders: Smith et al., 2011; Stanley, Schaldach, Kiyonaga, & Jha, 2011).

The extent of one's self-compassionate attitude is most commonly assessed with the Self-Compassion Scale (SCS; Neff, 2003). It conceptualizes self-compassion via three components: (1) *self-kindness versus self-judgment* (i.e., treating oneself with understanding/care as opposed to harsh self-judgment), (2) *common humanity versus isolation* (i.e., seeing one's distress/failures as part of the larger human experience rather than feeling separated from others), and (3) *mindfulness versus overidentification* (i.e., having a balanced present-moment awareness of affective experiences in contrast to dwelling on painful thoughts or emotions). Recent evidence (Brenner, Heath, Vogel, & Credé, 2017) suggests that positively and negatively worded items of the SCS constitute two factors that are distinctively associated with mental health outcomes: self-criticism and self-compassion. The self-criticism factor has been reported to be related to correlates of negative affectivity (Krieger, Altenstein, Baettig, Doerig, & Holtforth, 2013; Neff, Rude, & Kirkpatrick, 2007) and depression in particular (Matos et al., 2017; firefighters: Meyer et al., 2012). Self-criticism, therefore, can be regarded as a mediating force in the development of mental illness in response to PTEs. Therefore, self-criticism may be particularly relevant to first responders, because this group is frequently exposed to PTEs (Weiss et al., 2010).

Self-compassion, in contrast, may promote psychological and behavioral flexibility that is vital to a successful adaptation to PTEs by means of a mindful, nonjudgmental acknowledgment of one's distress, with the potential to turn it into encouraging behaviors (e.g., self-soothing, caring for oneself) and emotions such as gratitude and love (Neff et al., 2007). Individuals with high self-compassion tend to construe PTEs in less catastrophizing terms than those with lower self-compassion (Leary, Tate, Adams, Batts Allen, & Hancock, 2007). Along those lines, self-compassion has been shown to help reducing maladaptive behaviors such as excessive rumination or casting oneself for their shortcomings (Leary et al., 2007; Neff et al., 2005) and thereby decreasing symptoms of depression (both cross-sectionally and longitudinally) in nonclinical samples, in individuals at risk for depression, and in currently depressed individuals (Ehret, Joormann, & Berking, 2015; Gilbert, Baldwin, Irons, Baccus, & Palmer, 2006; Krieger, Berger, & Holtforth, 2016; MacBeth & Gumley, 2012; Neff, 2003; Neff, Kirkpatrick, & Rude, 2007). Similarly, mindfulness-based counseling interventions have been associated with lowered burnout levels in first responders (Kaplan, Bergman, Christopher, Bowen, & Hunsinger, 2017), and self-kindness was suggested to buffer the development of Post-Traumatic Stress Disorder (PTSD) symptoms across trauma-exposed samples (firefighters: Armstrong, Shakespeare-Finch, & Shochet, 2014; general population: Thompson & Waltz, 2008).

The Present Study

PTEs pose significant challenges to our adaptive resources: They place us under circumstances that stimulate behavioral attempts and emotional learning processes to recover from PTEs (Mak, Ng, & Wong, 2011; Tedeschi & Calhoun, 2004). Although self-compassion has been shown to protect against emotional distress in response to a stressor (e.g., ego-threat in a laboratory setting, Neff, Kirkpatrick, & Rude, 2007), recent evidence lacks clarity about how and when interindividual differences in self-compassion confer resilience in the wake of PTEs. We argue that individuals who encounter their affective experiences in response to PTEs with greater self-compassion, show lower levels of depression because self-compassion buffers psychological processes that are likely to convey the risk of developing mental health problems (e.g., rumination: Ciesla, Reilly, Dickson, Emanuel, & Updegraff, 2012; Mennin & Fresco, 2013; self-criticism: Mitmansgruber, Beck, Höfer, & Schüßler, 2009).

Based on previous evidence, we hypothesize that self-criticism is positively associated with levels of depression (Brenner et al.,

2017; Neff et al., 2005). We postulate that self-compassion will buffer this deleterious relationship (Mitmansgruber et al., 2009), because self-compassion may act as a protective factor against detrimental effects of PTEs on mental health. (Ford et al., 2017; Leary et al., 2007; Neff et al., 2005). This buffering effect, however, will only occur for firefighters who have experienced a high amount of PTEs, because stress resilience refers to mechanisms that chart enhanced situational adaptation *in response* to adversity. In other words, the presence of stressful circumstances is vital for resilience mechanisms to unravel (e.g., American Psychological Association, 2017; Tedeschi, & Calhoun, 2004).

We chose to test our hypotheses in a sample of first responders (i.e., firefighters), because they represent a high-risk population. Frequent exposure to various PTEs is an integral part of their occupational reality, and each PTE increases idiosyncratic vulnerabilities to severe mental health problems (Hom et al., 2016). The fact that despite severe exposure to PTEs, large proportions of first responders do maintain psychological functioning (Pietrzak et al., 2014), allowed us to study potential protective mechanisms of self-compassion in the wake of frequent PTEs (e.g., self-regulatory consequences of PTE exposure). These insights, in turn, may inform counseling interventions in the context of crisis intervention and disaster and trauma management.

Method

Participants and Procedure

Participants were recruited from one fire brigade in a major city in Germany (Mainz), and all belong to the same unit. Work experience of the sample of active-duty firefighters ($N = 123$), with an average age of 38.49 years ($SD = 10.85$, range: 22–59), had the following distribution: ≤5 years: 31.7%; 6–19 years: 33.3%; ≥20 years: 34.1%. Firefighters were recruited via leaflets in the fire brigade. Participants completed a battery of measures in their fire departments. Written informed consent was provided prior to enrollment in the study. Participants were reimbursed with the option to participate in a lottery to win a tablet computer and the opportunity to receive feedback on their questionnaire results. An exploration of hypotheses revealed that none of the participants saw through the purpose of the study. All procedures performed were in accordance with the ethical standards of the institutional and/or national committee and with the 1964 Helsinki declaration and its later amendments or comparable ethical standards.

Measures

Self-compassion and self-criticism. To assess self-compassion and self-criticism, we used the validated German translation (SCS-D; Hupfeld & Ruffieux, 2011) of the Self-Compassion Scale (SCS; Neff, 2003). Items were rated on a scale from 1 (*almost never*) to 5 (*almost always*), indicating how often individuals behave in a similar manner. In accordance with previous studies, scale scores were operationalized as two overall scores of self-compassion and self-criticism (Brenner et al., 2017). Overall internal consistency was excellent for both subscales (*self-compassion*: $\alpha = .81$; *self-criticism*: $\alpha = .90$). Importantly, psychometric properties of the validated German translation (Hupfeld & Ruffieux, 2011) confirm the factorial structure and expected associations with symptoms of affective psychopathology reported in the English original (Neff, 2003): Self-critical subscales of the SCS-D were positively associated with depression, anxiety, and overall negative affectivity, while self-compassion related subscales were negatively associated with them and were positively correlated with life satisfaction.

Symptoms of depression. The German version of the Patient Health Questionnaire (PHQ-9-D), which has been validated in nationally representative household surveys in Germany ($N = 5018$; Kocalevent, Hinz, & Brähler, 2013), was used to assess the severity of depressive symptoms. It is a brief self-report screening measure of depressive symptoms based on the *DSM–IV–TR* criteria (American Psychiatric Association, 2000). Participants are asked to indicate how often during the previous two weeks they experienced problems such as "feeling down, depressed, or hopeless." Scores range from 0 to 27, and each of the 9 items is scored on a scale from 0 (*not at all*) to 3 (*nearly every day*). Higher scores suggest more symptoms and higher severity. The range of scores in our sample was 0 to 23. Psychometric analyses have indicated sufficient reliability ($\alpha = .87$), construct (i.e., one factor solution), convergent and discriminant validity (i.e., correlations with other measures of depression and life statisfaction) in general population samples and clinical subsamples (Kocalevent et al., 2013). In our sample, the internal consistency of the scale were comparable to those reported in the literature ($\alpha = .83$; see Table 1).

Duty-related PTEs. For the assessment of duty-related PTEs, we applied a modified version of the Posttraumatic Diagnostic Scale (Foa, Cashman, Jaycox, & Perry, 1997) that has been used in previous studies (e.g., Beaton, Murphy, Johnson, Pike, & Corneil, 1998; Wagner et al., 1998). It is specifically tailored to PTEs in the

Table 1
Mean, Standard Deviation, Range, and Inter-Correlations of Main Variables ($N = 123$)

Variable	N	M (SD); [range]	Correlation coefficients (r) (1)	(2)	(3)	(4)	(5)
(1) Depressive symptoms	123	3.51 (3.57); [0; 23]	1				
(2) Self-compassion	123	2.97 (.509); [2; 4]	−.13 (.149)	1			
(3) Self-criticism	123	2.29 (.669); [1; 4]	**.57 (.000)**	−.01 (.945)	1		
(4) Cumulative PTE exposure	120	2.77 (1.239); [0; 3]	.10 (.296)	.06 (.493)	.05 (.622)	1	
(5) Number of calls (last year)	119	1.93 (9.06); [0; 3]	.17 (.369)	−.10 (.299)	−.06 (.538)	.02 (.838)	1

Note. PTE = potentially traumatic event. On some variables, participants in our sample did not provide any response; therefore, their data were considered missing values. The average number of potentially traumatic calls was indicated on a scale from 1 (*few*) to 3 (*many*). p-values are displayed in brackets along with rs.

context of fire service and puts emphasis on emergency-specific PTEs. The short checklist aims to identify PTEs experienced by the respondent during a call and consists of six dichotomous (yes/no) questions about the exposure to any of the following emergency-specific PTEs: (1) severe injury or mortal danger for oneself, (2) severe injury of or mortal danger to a fellow firefighter, (3) loss of a fellow firefighter during a call, (4) severe injury or death of an adult, (5) severe injury or death of vulnerable victims (e.g., children), and (6) other reasons. Respective incident rates in our sample were (1) 51.2%, (2) 39%, (3) 41.4%, (4) 92%, (5) 85%, and (6) 41.5%. The group of traumatic events listed under "other reasons" was too heterogeneous to form a unified category. In order to account for possible dependencies across events, we calculated the cumulative PTE exposure for each firefighter. This approach has proven efficient in a number of studies with first responders (see section Data Analysis; Geronazzo-Alman et al., 2017; Weiss et al., 2010).

PTEs. In addition, we administered a validated German version of the PDS (PDS: Foa et al., 1997; German validated translation: Griesel, Wessa, & Flor, 2006) to make sure that the experience of any traumatic event was work related. Of all seven categories, the traumatic event "severe accident, fire or explosion" showed an acceptable amount of variance (56.9%), and because the vast majority of the reported accidents were work-related, we decided to include this traumatic stressor in further analyses. The frequency of all other events was extremely low, ranging from incident rates of 0% to 23.6% (see Table S1 in the supplemental materials) and were therefore not included in further analyses.

Data Analysis

To test our hypotheses, we analyzed whether the cumulative exposure to PTEs moderated the differential contributions of self-compassion and self-criticism to symptoms of depression (i.e., three-way interaction). Continuous moderators were (grand mean) centered to avoid overestimations (Robinson & Schumacker, 2009). We tested our hypotheses with one stepwise regression model. In step one we tested the main effects of self-criticism, self-compassion, and cumulative PTE exposure on symptoms of depression. In step two, we estimated the predictive model for all additional two-way interaction terms between the predictors. In the final step, we added the three-way interaction to the set of all predictors listed above. Because our observations of self-compassion and self-criticism in relation to the experience of PTEs were restricted to retrospective self-reports, we tested whether other plausible variables such as work experience, average calls during the last year, or previous psychotherapy influenced any of our variables in the model (see Table S2 in the supplemental materials). Only the average number of calls showed an association with current symptoms of depression (the outcome variable) and was therefore included in our model as a covariate.

We visualized and examined the nature of possible interaction effects with simple slope tests and evaluated the differential effects with Bonferroni-corrected pairwise comparisons of the slopes (Aiken, West, & Reno, 1991). Our decision to operationalize cumulative PTE exposure on the basis of the absolute number of experienced PTE types—regardless of their frequency—is based on previous evidence from literature on impacts of PTE on mental health outcomes (e.g., Cloitre et al., 2009). Compared to other indices (e.g., severity, frequency of experienced PTEs), this approach proved sufficient in the prediction of symptoms of psychopathology in a large sample of NYC's first responders (Geronazzo-Alman et al., 2017). Each trauma type is dichotomized as present (1) or absent (0), and added to yield a summary score. This frequency variable is a form of cumulative risk (CR; see Appleyard, Egeland, van Dulmen, & Sroufe, 2005). All analyses were carried out with STATA software (StataCorp, 2013) and cross-validated with PROCESS macros in SPSS (Hayes, 2013); estimations were based on bootstrapped standard errors (= 5000 sample iterations).

Results

Preliminary Analyses

Correlations of the five variables are presented in Table 1.

In the total sample, only levels of depressive symptoms were significantly associated with self-criticism, $r = .572$, $p = .002$. There were no multivariate breaches of multicollinearity identified suggesting that the data were suitable for regression analyses. To control for the robustness of our analyses, we chose to winsorize the data (i.e., replace outliers with the next highest score that is not an outlier). The average levels of self-compassion ($M = 2.97$; $SD = .509$) and self-criticism ($M = 2.29$; $SD = .669$) reported in this study were comparable to those reported in previous studies with representative samples (U.S.: Neff, Whittaker, & Karl, 2017; Germany: Hupfeld & Ruffieux, 2011). Descriptive statistics of symptoms of depression indicate the coverage of a comprehensive range of scores (i.e., almost the entire range of all possible scores), and mean values were comparable to those from a large German validation general population sample (Kocalevent et al., 2013).

Regression Analysis

The results of the stepwise regression are shown in Table 2. Only step 3 contributed to significant changes in the explained variance depression symptoms. The three-way interaction accounted for an increase of approximately 3% (R^2 change = .03, $p = .026$), and overall the final model accounted for approximately 44% of the variance in depressive symptoms ($R^2 = .436$, $F(1, 107) = 18.66$, $p \leq .001$). While self-criticism was a significant predictor across all steps (step 1: $\beta = 3.05$, $p \leq .001$; step 2: $\beta = 2.81$, $p \leq .001$), neither self-compassion nor cumulative PTE experience were. In the final step, however, self-compassion ($\beta = -2.27$, $p = .031$), associated two-way interactions, and the three-way interaction became significant predictors of symptoms of depression (see Table 2 for final beta weights). In the final model, absolute beta weights were comparable for self-compassion and self-criticism, followed by the interaction term of self-compassion and cumulative exposure to PTE, the interaction of self-compassion and self-criticism, and the three-way interaction term, respectively. Self-criticism and the interaction of self-compassion and PTE were related to higher levels of depressive symptoms; self-compassion and the three-way interaction term, in contrast, were related to lower levels of self-reported symptoms of depression.

The examination of the pattern of the three-way interaction with simple slope tests revealed that under circumstances of little cu-

Table 2

Three-Way Interaction Results: Effects of Self-Criticism and Self-Compassion on Levels of Depression Across Levels of Cumulative (Occupation-Related) Potentially Traumatic Events (PTEs)

Variable	Step 1			Step 2			Step 3		
	β	*t*	*p*	β	*t*	*p*	β	*t*	*p*
Main effects									
Constant	**−3.45**	**−3.88**	**.000**	**−2.968**	**−3.51**	**.001**	**−2.81**	**−3.43**	**.001**
Average number of calls during last year	−.00	−.02	.892	−.01	−.05	.841	.00	.29	.775
Self-compassion	−.95	−1.69	.080	−1.40	−.89	.385	**−2.72**	**2.18**	**.031**
Self-criticism	**3.05**	**7.11**	**.000**	**2.81**	**7.03**	**.000**	**2.75**	**6.87**	**.000**
Cumulative PTE exposure	.23	.68	.411	−.82	−1.14	.229	−.17	−.28	.675
Two-way interaction terms									
Self-compassion * Self-criticism	—	—		−1.00	−1.39	.168	**−1.58**	**−2.89**	**.005**
Self-criticism * Cumulative PTE exposure	—	—		.45	1.26	.210	.19	.55	.585
Self-compassion * Cumulative PTE exposure	—	—		−.52	−1.19	.237	**2.61**	**2.46**	**.016**
Three-way interaction term									
Self-compassion * Self-criticism * Cumulative PTE exposure	—	—		—	—		**−1.34**	**−2.51**	**.013**
R^2		**.38**			**.41**			**.44**	
F		**13.26**	**.000**		**10.12**	**.000**		**18.66**	**.000**
df		115			112			111	
ΔR^2		—			.028			.03	
F		—			1.72	.145		**5.08**	**.026**

Note. Because on some variables, participants in our sample did not provide any response, their data were considered missing values; the final *N* for our regression model was 119. PTE = potentially traumatic event.

mulative PTE exposure (see Figure 1A), both slopes of the regression line for self-compassion were significantly different from zero (−1*SD*: $B = 2.507$ [1.295; .3.723], $p \leq .001$; +1 *SD*: $B = 2.770$ [1.119; 4.425], $p \leq .001$), yet did not differ significantly from each other (see Figure 1A for an visual inspection of confidence intervals; further information on the pairwise comparisons of marginal effects is provided in Table S3 in the supplemental materials). In the case of firefighters who experienced a substantial amount of cumulative PTEs (see Figure 1B), only the slopes for *low* levels of self-compassion significantly predicted symptoms of depression (−1 *SD*: $B = 4.534$ [3.141; 5.926], $p \leq .001$; +1 *SD*: $B = 1.410$ [−.739; 3.567], $p = .196$) and pairwise comparisons of those marginal effects revealed that they differed significantly from those for low levels of self-compassion (see Figure 1B and Table S3). In other words, only under circumstances of high occupational adversity (i.e., high levels (+1*SD*) of cumulative, duty-related PTE exposure), high levels of self-compassion (+1*SD*) had a buffering effect on the association of self-criticism and depressive

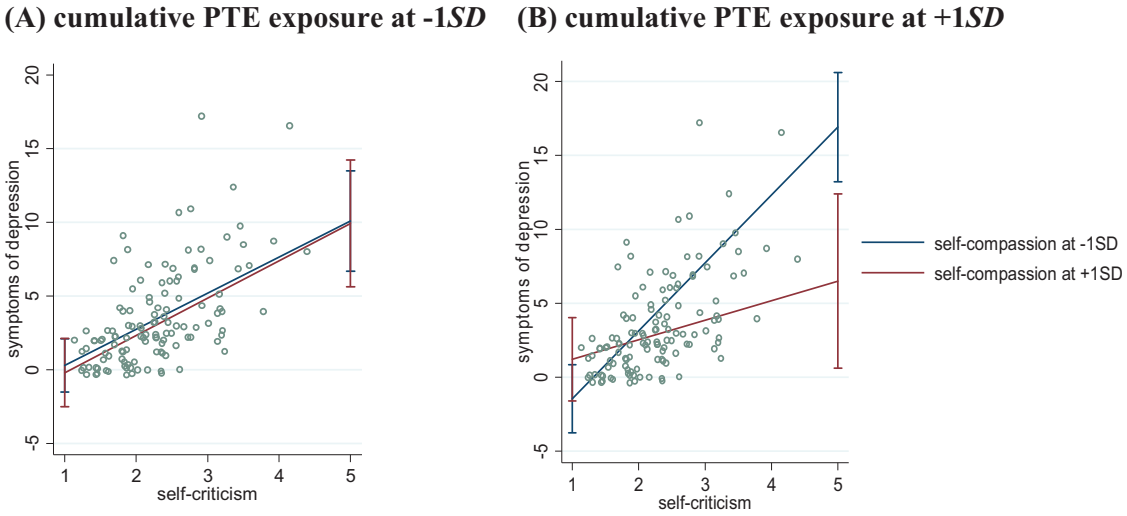

Figure 1. PTE = potentially traumatic event. Mean level of depression as a function of the exposure to the interaction of self-compassion and self-criticism under circumstances of cumulative (occupation-related) PTEs. High and low values of self-criticism refer to values 1 standard deviation *above* (+1*SD*) and *below* (−1*SD*) the mean, respectively; red lines denote self-compassion at + 1*SD* and blue lines denote self-compassion at −1*SD*. See the online article for the color version of this figure.

symptoms. Importantly, further simple slope analyses of the second moderator (cumulative PTE exposure) revealed that only under circumstances of above average cumulative PTEs, conditional effects of self-compassion and self-criticism (X^*M) on symptoms of depression were significant ($-1SD_{PTE}$: $B = -.25$ [−1.51; 2.03], $p = .772$; $+1SD_{PTE}$: $B = -3.07$ [−5.51; −.63], $p = .014$.

Discussion

While the demands of professional first responder service result in fairly elevated risks for the development of depression, a substantial proportion of them retain their mental health despite frequent emergency-specific PTEs (Pietrzak et al., 2014). It is therefore important to understand the processes that may lead to alleviated personal suffering and increased stress resilience in the wake of duty-related PTEs. Based on previous evidence, we set out to investigate whether self-compassion may be an adaptive ability that is set in motion in the wake of PTEs and has salutary effects on the pathogenesis of depressive symptoms in a sample of full time firefighters.

In line with previous work, we found a strong association between self-criticism and symptoms of depression (e.g., Krieger et al., 2013). Consistent with our main hypothesis, the inclusion of the three-way interaction term significantly improved the amount of explained variance in our stepwise regression. Pairwise comparisons of average marginal effects suggest that the stable relationship between self-criticism and symptoms of depression may be mitigated by self-compassion, yet only under circumstances of substantial adversity (i.e., above average cumulative PTE exposure). With regards to mechanisms of stress resilience, this pattern of results has two important implications: First, it is consistent with definitions of stress resilience that emphasize the necessity of stressful circumstances for resilience mechanisms to unravel (e.g., American Psychological Association, 2017; Tedeschi & Calhoun, 2004). Facing and thereby experiencing negative emotions is at the heart of the ability to adapt (flexibly) to one's environment (e.g., Austenfeld & Stanton, 2004; Neff et al., 2005), because it motivates us to attain resources and skills that are central to effective situational adaptation (Neff et al., 2007; Troy, Shallcross, & Mauss, 2013). Second, it implies that neither the sheer absence of negative affective reactions to PTEs nor the ability to rapidly upregulate positive affectivity imply stress resilience in its own right. Rather, it is an interplay of both factors. By means of a mindful, nonjudgmental acknowledgment of one's distress, self-compassion has the potential to turn negative affectivity into encouraging behaviors (e.g., self-soothing, caring for oneself; Neff et al., 2007), allowing behavioral adaptation to PTEs in spite of initially negative reactions toward it.

The present study provides unique contributions to the field of crisis intervention, disaster, and trauma management in counseling psychology, by assessing an underinvestigated, high-risk population across a comprehensive range of depressive symptoms and a wide range of cumulative trauma exposure. However, our findings need to be discussed in light of some limitations.

First, because our data were based on cross-sectional self-reports, it is not possible to establish a causation of reported relationships. Described evidence of a moderating value of self-compassion that is restricted to the group of substantially trauma-exposed firefighters may be a result of enhanced resilience in the wake of existential danger. However, it may also be attributable to differential baseline rates of self-compassion across both groups before the experience of any event, implying that potential inter-individual differences in the degree to which participants were engaging in self-compassion may only unravel *after* their exposure to a highly stressful and threatening experience. Such interpretations, however, are beyond the scope of our data. Future longitudinal designs should investigate the conditions under which trauma elicits such adaptive emotional reactions and particularly drives the build-up of self-compassion.

Second, even though self-reports are the means of choice for the assessment of internalizing traits, they may also be affected by a broad range of biases. In our case, it is questionable whether self-reported self-compassion effects reflect actual changes or a retrospective reattribution of the experienced distress during situational adaptation processes (Bonanno, 2005; McFarland & Alvaro, 2000; Wilson & Ross, 2001). Third, we found only small increases in explained variance (≤5%) due our three-way interaction term. However, given that moderation effects are known to be subject to downward biases due to measurement, and that statistical artifacts and average moderation effects are estimated to be .002 (Aguinis, Beaty, Boik, & Pierce, 2005), the scope of our observed effect is comparably solid. Fourth, the findings may not necessarily generalize to female, clinical, or general population samples. In our study, symptoms of depression may have been underestimated, because they were only assessed in relation to work-related, firefighter-specific trauma and the variance in lifetime trauma was very low in our sample.

Counseling Implications

The identification of mechanisms conferring resilience in the wake of PTEs is crucial to enhancing counseling outcomes for those who are considered at high risk for trauma-related psychopathology such as depression. Yet how can counseling services use the positive potential with which PTEs can provide us, to overcome their negative impacts?

Our data suggest that one possible way to prevent the onset or mitigate the extent of depressive symptoms in first responders is to target initial negative affective responses to PTEs. Some individuals may perceive PTEs to be beyond their personal self-regulatory skills and experience the PTE as threatening and uncontrollable, which—in turn—may affect their affective response and increase the likelihood of depressive symptoms. Training a self-compassionate mindset, however, may improve the regulation of PTE-related stress responses (Follette, Palm, & Pearson, 2006), decreasing the magnitude of depressive symptoms. Previously it has been suggested that a self-compassionate mindset toward ourselves strengthens our motivation to acquire new skills (Breines & Chen, 2012), lowers our fear of failure, and heightens our perceptions of competence (Neff et al., 2005), all of which may help to construe negative events in less dire ways.

Self-compassion is commonly understood as the ability to treat oneself with care and kindness, viewing personal suffering as part of the greater human experience and trying not to be carried away by intense emotions. This may be of particular importance for emergency service professionals, where responsibility is a highly salient concept, because it is their job to save lives and prevent

considerable hazard. Increased feelings of responsibility are associated with a proneness to experience self-criticism (Bryant & Guthrie, 2007), a cardinal symptom in depression (Zahn et al., 2015). Even though events during a call may be beyond control, firefighters may likely blame themselves if something goes wrong. Self-compassion, on the other hand, may buffer these effects by promoting greater self-forgiveness (Cornish & Wade, 2015).

Furthermore, interventions targeting the ability of attention control (e.g., *mindfulness,* a subfacet of self-compassion) are promising treatments for depression in first responders. They teach individuals to filter out irrelevant negative information and to selectively attend to positive information, and may help buffer the perpetuating role of self-criticism on depressive symptoms (Kaplan et al., 2017). When recalling a PTE, self-compassion may increase one's ability to tolerate the associated emotional arousal by keeping a healthy distance and maintaining a helpful engagement with distressing emotions (Follette et al., 2006; Ford et al., 2017).

While helping their clients to cope with PTEs, counseling psychologists should be aware of the possibility of positive change in the aftermath of a PTE. Possibly, it is precisely the experience of traumatic events that can set in motion the development of self-compassion, which in turn facilitates the adaptation to new threats to our well-being. Early (posttrauma) counseling interventions, therefore, should also aim at assisting clients in achieving maximal situational adaptation and facilitating a helpful engagement with distressing emotions (Follette et al., 2006; Ford et al., 2017). In doing so, counseling interventions might focus on techniques that help clients to view PTEs and their cumulative impact with greater self-directed compassion. These abilities may enable clients to normalize hurtful and traumatizing events by extending the experience over and above our personal concerns, potentially via enhanced reflections from a distanced perspective (e.g., Ayduk & Kross, 2008).

Previous studies have shown that Gestalt-based counseling strategies (e.g., the two-chair technique) have led to decreases in feelings of self-criticism and helping people to meet themselves with more self-compassion (see Neff, Kirkpatrick, & Rude, 2007, for an in-depth protocol of the technique). Similarly, group-based interventions that rely on cognitive restructuring, which teach self-critical clients to develop the skills to be more self-compassionate, lead to significant decreases in levels of depression and associated symptoms (e.g., shame, and self-attacking tendencies; Gilbert & Procter, 2006).

Beyond general impacts on emotion-regulatory abilities, self-compassion (and associated mindfulness) may have two important side effects that are relevant to counseling in emergency helper populations: First, they may allow first responders to maintain focused on the incident and decrease the likelihood of feelings of insufficiency during a PTE, thereby lowering the scope of associated symptoms (Lanius et al., 2010; Ozer, Best, Lipsey, & Weiss, 2003). Second, self-compassion has been reported to be associated with decreased self-stigma in the context of seeking counseling (Heath, Brenner, Lannin, & Vogel, 2016; Heath, Brenner, Vogel, Lannin, & Strass, 2017). Particularly, first responders may benefit from lowered self-stigma, since the culture of rescue personnel has often been discussed in terms of restricted self-disclosure. On that basis, counseling services may provide an opportunity to offset trauma-disclosure inhibitions that may hinder the experience of situational adaptation in the aftermath of traumatic events.

Conclusion

Being a first responder exacts a huge psychological burden on firefighters' mental health. We suggest that in the face of PTEs, self-compassion may be a protective factor from the development of depressive symptoms. More precisely, our results suggest that individuals who encounter their affective experiences with greater self-compassion, show lower levels of depression in response to PTEs because self-compassion buffers processes that perpetuate negative affectivity. The identification of such resilience mechanisms may help those with increased risks to experience mental health consequences by developing new counseling strategies to prevent the onset of clinically relevant symptoms.

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