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Compassion for Oneself and Others Protects the Mental Health of First Responders

Mollie A. McDonald[1] · Samantha J. Meckes[1] · Cynthia L. Lancaster[1]

Abstract

Objectives First responders are at elevated risk for psychological distress from frequent exposure to potentially traumatic events. Self-compassion may buffer against the negative impact of these stressors, and the potential emotional challenges of having high levels of compassion for others. However, little is known about the psychological impact of compassion in first responders. We examined how self-compassion, compassionate love for others, and service role interacted to predict mental health in a diverse group of first responders.

Methods First responders ($N = 171$) with both traditional and emotional support roles completed an online survey including measures of self-compassion, compassionate love, psychological distress, post-traumatic stress, secondary traumatic stress, burnout, resilience, compassion satisfaction, and life satisfaction.

Results Greater self-compassion and compassionate love both independently predicted less depersonalization ($|\beta|s \geq .18$, $ps < .01$). Greater self-compassion predicted less general psychological distress, post-traumatic stress, secondary traumatic stress, and emotional exhaustion, as well as greater resilience and life satisfaction ($|\beta|s \geq .35$, $ps < .001$). Greater compassionate love predicted greater personal accomplishment and compassion satisfaction for all first responders ($|\beta|s \geq .30$, $ps < .001$); for traditional first responders only, greater self-compassion predicted greater personal accomplishment and compassion satisfaction (role x self-compassion; $|\beta|s \geq .16$, $ps < .05$). Emotional support first responders reported less emotional exhaustion and greater resilience than traditional first responders ($|\beta|s \geq .21$, $ps < .05$).

Conclusions Self-compassion and compassionate love each play important roles in promoting mental health among first responders. Programs designed to increase compassion could be beneficial in this population.

Keywords First responders · Compassionate love · Self-compassion · Mental health

First responders regularly navigate potentially traumatic events when on-scene during emergencies. This increases their risk of experiencing mental health issues, such as symptoms of depression, anxiety, and post-traumatic stress disorder (PTSD; Jones 2017). People who work in high-stress environments with regular, indirect trauma exposure are additionally at risk for experiencing burnout and secondary traumatic stress (also referred to as compassion fatigue; Sinclair et al. 2017) which could impact job performance and retention (Cieslak et al. 2014; Swider and Zimmerman 2010). Identifying protective factors, particularly modifiable ones, is critical for informing the development of programs to improve the psychological health of first responders, and to enable them to continue delivering essential services to their communities.

Self-compassion may protect against the negative effects of stress. Neff (2003) conceptualized self-compassion based on Buddhist teachings, defining it as being kind toward oneself under challenging conditions, recognizing that one's experiences are shared by others, and being mindfully aware of one's painful experiences. An extensive body of research has examined self-compassion as a protective factor. According to meta-analyses, self-compassion was associated with benefits such as lower depression, anxiety, and stress, and greater psychological well-being (MacBeth and Gumley 2012; Zessin et al. 2015). Additionally, according to a review of self-compassion research within healthcare professionals, self-compassion may be particularly important for those in

✉ Mollie A. McDonald
mcdonaldmollieann@gmail.com

1   Department of Psychology, University of Nevada, Reno, (0296)
     1664 N. Virginia Street, Reno, NV 89557, USA

helping professions (Raab 2014). Three published studies have examined self-compassion in first responders specifically. Self-compassion buffered against the influence of self-criticism on depression in firefighters (Kaurin et al. 2018), and self-acceptance (a statistically derived factor composed of self-compassion items) predicted resilience among paramedics and dispatchers (Bilsker et al. 2019). Additionally, fire service personnel who participated in a compassion-focused intervention experienced greater increases in self-compassion, but not greater mental health gains, compared to active controls (Beaumont et al. 2016c). Although two of these studies suggest that self-compassion could be a promising protective factor for first responders, more research is needed to replicate these results and test if they generalize to other first responders and symptoms.

Relative to self-compassion, there is little research on the psychological impact of compassion for others. Furthermore, this body of research has been less consistent in the operationalizations and scales used to measure compassion for others and closely related constructs. In its most basic form, compassion for others is defined as a feeling of concern and a desire to help when exposed to others' suffering, but several operationalizations exist (see Strauss et al. 2016 for review). Similar to the aforementioned definition of self-compassion, some researchers have defined compassion for others according to Buddhist principles (hereafter referred to as mindful other-compassion), making these measures broader than the basic definition, as they incorporate additional components (e.g., mindful awareness; Pommier 2011; Pommier et al. 2019). Other researchers have focused more specifically on altruism, conceptualizing compassion as compassionate love, which is defined as an enduring trait that encompasses empathic feelings as well as patterns of behavior (e.g., self-sacrificing tendencies) toward different groups of people (Hwang et al. 2008; Sprecher and Fehr 2005). An even narrower focus has been applied by researchers examining empathy, a construct encompassing the affective (e.g., empathic concern) and cognitive (e.g., perspective taking) components of experiencing concern for others' suffering, but not including the desire to help or helping behavior (Davis 1983). Researchers have highlighted the importance of distinguishing between compassion and empathy and how they might differentially predict mental health outcomes (Sinclair et al. 2017), especially because sharing negative emotions alone can have negative psychological consequences if those emotions go unregulated (MacDonald and Price 2019). However, the basic definition of compassion encompasses empathy, and quantitative results have supported this overlap, such that mindful other-compassion and compassionate love were correlated with empathy in previous research (Hwang et al. 2008; Pommier et al. 2019).

Compassion for others is a particularly important construct to study among first responders, because those who join helping professions may do so because they are especially motivated to help others (Ben-Shem and Avi-Itzhak 1991). Given first responders' role in predominately helping strangers, we chose to operationalize compassion for others using a stranger-focused measure of compassionate love (Hwang et al. 2008). This measure uses the basic definition of compassion but more specifically focuses on feelings of concern and prosocial behaviors toward strangers, which may be particularly important for first responders. However, due to the dearth of literature on the psychological impact of compassion for others, we broadened our literature review to include studies that operationalized compassion for others in a variety of ways. Despite previously observed correlations between other-compassion constructs (Hwang et al. 2008; Pommier et al. 2019), it is important to take into consideration that different measures may contribute to the mixed findings present in this body of literature.

Among the relatively few studies that have been conducted examining other-compassion constructs, findings have varied widely. Some research has suggested that compassion for others is unrelated to mental health. For example, compassionate love was not related to depression, anxiety, or stress in a sample of undergraduates (Catarino et al. 2014), nor was it associated with depression or PTSD symptoms in a sample of veterans (Kearney et al. 2013). In a sample of police officers, empathy was not associated with secondary traumatic stress (Turgoose et al. 2017). However, other studies have suggested that compassion for others is protective. For example, compassionate love was shown to predict better mental health, such as greater positive affect, self-esteem, and life satisfaction, as well as lower levels of negative affect and anxiety, in undergraduates (Chiesi et al. 2020). Compassionate love also marginally predicted less depression in caregivers of individuals with Alzheimer's disease (Monin et al. 2015). Empathy was associated with happiness and life satisfaction in undergraduates, and happiness and positive affect in a community sample (Wei et al. 2011). In helping professions, greater mindful other-compassion predicted beneficial psychological outcomes, including lower secondary traumatic stress and burnout as well as greater compassion satisfaction and wellbeing (Beaumont et al. 2016a, b). Additionally, aspects of empathy (e.g., empathic concern) were shown to predict greater compassion satisfaction and lower secondary traumatic stress and burnout among helping professionals (Duarte and Pinto-Gouveia 2017; Duarte et al. 2016; Richardson et al. 2016; Wagaman et al. 2015; Yi et al. 2019). Furthermore, greater compassionate love was shown to predict greater professional commitment and lower burnout in nurses (Mersin et al. 2020). Therefore, compassion for others and related constructs could be useful predictors of first responders' professional and personal quality of life.

On the other hand, some studies suggest that too much compassion for others could potentially have harmful effects. In the general population, aspects of empathy were associated with

greater stress (Birnie et al. 2010). According to reviews examining predictors of secondary traumatic stress, findings were mixed, but suggested that empathy was not protective, such that empathy had either no relationship or a positive relationship with secondary traumatic stress (Sinclair et al. 2017; Turgoose and Maddox 2017). In a sample of mental health professionals, greater mindful other-compassion was associated with greater secondary traumatic stress (Mantelou and Karakasidou 2019). Among health professionals, aspects of empathy (e.g., empathic concern, personal distress) were associated with greater secondary traumatic stress and burnout and less compassion satisfaction, although negative (e.g. secondary traumatic stress) and positive (e.g., compassion satisfaction) outcomes sometimes occurred simultaneously (Duarte and Pinto-Gouveia 2017; Duarte et al. 2016; Hunt et al. 2019). Finally, among police officers, empathy predicted greater burnout (Turgoose et al. 2017). It is important to assess the role that other-compassion constructs have in first responders' lives, beyond the one existent published study (Turgoose et al. 2017), because secondary traumatic stress and burnout could result in harmful consequences for first responders and their communities (Swider and Zimmerman 2010).

Preliminary research suggests that the mixed findings surrounding compassion for others might be explained in part by a moderating effect of self-compassion. Specifically, the beneficial correlates of self-compassion could buffer against the potentially harmful correlates of empathic concern. In a sample of nurses, greater empathic concern was related to greater secondary traumatic stress, but only for those with lower aspects of self-compassion (e.g., self-kindness; Duarte et al. 2016). However, further research is necessary to determine if this pattern of findings, suggesting the protective influence of self-compassion among those with high levels of empathic concern, extends to first responders and additional measures of compassion for others.

In general, almost nothing is known about the impact of compassion for others on mental health in first responders. This is surprising, given the vast body of research showing the protective effects of self-compassion, and the emerging (although mixed) research on the effects of other-compassion constructs. Much of this prior research was done with helping professionals (e.g., nurses). Although the frequency of indirect exposure to traumatic events makes this group similar to first responders, traditional first responders (e.g., police officers, firefighters) experience high levels of direct threats to personal safety (Reichard and Jackson 2010). Because of these differences in duties between first responders and other helping professionals, we expect that psychological outcomes related to compassion could be different for these groups.

Given the mixed findings in previous research, we decided to base our predictions upon findings from the one study that evaluated the interaction between aspects of self-compassion and an overlapping other-compassion construct in a sample of helping professionals (Duarte et al. 2016). Specifically, in this study, greater empathic concern predicted greater secondary traumatic stress (referred to as compassion fatigue in the study) among nurses with low self-kindness. Therefore, we predicted that greater compassionate love would predict greater secondary traumatic stress, but only among first responders with low self-compassion. We expected to see similar patterns of results for related mental health outcomes, such as general psychological distress, post-traumatic stress, and burnout. We also explored the possibility that self-compassion would interact with compassionate love when predicting positive mental health outcomes, such as resilience, compassion satisfaction, and life satisfaction. In the absence of an interaction between self-compassion and compassionate love, we expected that greater self-compassion would predict better overall mental health (consistent with meta-analytic results; MacBeth and Gumley 2012; Zessin et al. 2015). However, in the absence of an interaction between self- and other-compassion, we were uncertain what the main effect of other-compassion (i.e., compassionate love) might be, given the mixed findings of prior studies. Thus, we took an exploratory approach and did not determine an a priori hypothesis for the main effect of compassionate love. Additionally, in our study, we had the opportunity to sample traditional first responders (e.g., police officers, firefighters) and first responders participating in a program specifically designed to provide emotional support on-scene to people in crisis (e.g., after the sudden death of a family member). Therefore, we explored the possibility that emotional support first responders might differ from traditional first responders in the role that compassion plays in maintaining their mental health. To allow for the possibility that traditional first responders differ from first responders specializing in emotional support, we examined the interaction of first responder role with self-compassion and compassionate love.

Method

Participants

The current sample was composed of adult volunteer and professional first responders. In total, 240 participants completed at least a portion of the survey, and 219 (91%) were eligible for participation (e.g., age 18+, were first responders, had experience responding to one or more emergency calls). Eligibility was also determined during the second wave of data collection (spring 2019) by excluding participants ($n = 4$) who indicated that they had completed a similar survey during the time frame of the first wave of data collection (spring 2018). Listwise deletion was used to derive a sample of participants who had completed all of the measures used in the current study, resulting in a sample of 171 (71%). According to an a priori power analysis, we needed a sample

size of $N = 139$ to obtain 80% power to detect a medium effect size ($f^2 = .15$) when testing a multiple regression model with 15 predictors. Thus, we obtained sufficient power to detect a clinically meaningful impact on psychological outcomes, despite the high number of predictors in our models. Of the subset of participants used for the current study ($N = 171$), the majority were male (73%), White or Caucasian (92%), not Hispanic or Latino (92%), 40 years of age and older (53%), in a relationship (80%), employed full-time (89%) with an annual income greater than $100,000 (64%), and had an education level of less than a bachelor's degree (52%). Law enforcement (39%) was the most commonly endorsed first responder affiliation. Organizational affiliation was used to determine service role, such that participants affiliated with the Trauma Intervention Program were coded as emotional support first responders due to their role of proving on-scene crisis support ($N = 31$), and all other affiliations were coded as traditional first responders ($N = 140$). (See Table 1 for additional demographic information.)

Procedure

Participants were recruited in the Western United States through mass emails sent out by organization leaders in police and fire departments, as well as the Trauma Intervention Program. Electronic informed consent was obtained from all subjects. Data were collected via Qualtrics March 2018–May 2019. Participants completed a larger assessment battery (see Supplemental Table 1 for descriptive statistics); data from relevant variables were analyzed for the current study. Those who completed the full survey were compensated with a $20 electronic gift card. All procedures were approved by the University of Nevada, Reno, Institutional Review Board.

Measures

Demographics Participants reported several demographic characteristics, including organizational affiliation, gender, race, ethnicity, age range, educational level, etc. (see Table 1 for additional demographic information). Demographic characteristics were compared across service role groups (traditional versus emotional support first responders), and any demographic characteristics that significantly differed between groups were included in subsequent analyses to attempt to control for these differences (see Table 1 for information about group comparisons).

Social Desirability The Marlowe-Crowne Social Desirability Scale – Form C (MC-SDS-C) is a 13-item measure designed to account for socially desirable response style with comparable psychometrics to the long form (Reynolds 1982). We controlled for social desirability because previous research identified a correlation between social desirability and

compassionate love (Sprecher and Fehr 2005). The internal consistency of the MC-SDS-C in the current study was acceptable ($\alpha = .71$). A sum score was generated on a 0–13 scale, with higher scores indicating a greater tendency to be concerned with social approval.

Stress Exposure Two measures were used to assess exposure to stressful events. Participants reported an estimated number of calls or emergencies that they responded to in the previous month, which was used as a proxy for frequency of recent exposure to stress. Participants also responded to the Life Events Checklist for DSM-5 (LEC-5), a 17-item measure of lifetime exposure to different types of potentially traumatic events (Weathers et al. 2013). Although psychometric data is not currently available for the version updated for DSM-5, the previous version was shown to have reasonable psychometric properties, and only minor changes were made to the measure (Gray et al. 2004). For each item, we coded any form of exposure to a potentially traumatic event as one, and no exposure as zero. A summed score was calculated (range 0–17) as a measure of variety in lifetime history of trauma exposure. Similar scoring methods for trauma exposure have been used in previous research (Brownlow et al. 2018).

Self-compassion The Self-Compassion Scale – Short Form (SCS-SF) is a 12-item measure of one's tendency to be self-compassionate that retains the strong psychometric properties of the longer form (Neff 2003; Neff 2020b; Raes et al. 2011). The internal consistency of the overall SCS-SF score in the current study was good ($\alpha = .83$). A total mean score was generated on a 1–5 scale, with higher scores indicating more frequent self-compassion. Questions were recently raised concerning whether a total self-compassion score should be used to assess self-compassion as a protective factor (Muris and Otgaar 2020; Neff 2020a). Critics of the total score suggested that reverse-coded negatively worded items, which are more reflective of self-criticism rather than self-compassion, may be driving results indicating that self-compassion is protective against psychopathology (Muris and Otgaar 2020). For this reason, we conducted post hoc analyses to examine if our pattern of results was maintained when using only the positively worded or negatively worded items (see Supplementary Materials).

Compassionate Love The Santa Clara Brief Compassion Scale (SCBCS) is a psychometrically sound 5-item measure of one's tendency to be compassionate toward others, particularly strangers (Hwang et al. 2008; Plante and Mejia 2016). For the sake of clarity, we refer to this construct as compassionate love (the name given by the original scale developers; Sprecher and Fehr 2005) to clearly distinguish it from other measures of compassion for others and related constructs. The SCBCS has been criticized for using the word "compassion"

Table 1 Demographics of first responder sample and tests of independence by service role

Characteristic	Total (N = 171) n (%)	Traditional (N = 140) n (%)	Emotional support (N = 31) n(%)	χ^2
Organization				
Law enforcement agency	67 (39)	67 (48)	0 (0)	
Fire department	62 (36)	62 (44)	0 (0)	
Trauma Intervention Program	31 (18)	0(0)	31 (100)	
Emergency medical services	20 (12)	20 (14)	0 (0)	
Multiple organizations	17 (10)	17 (12)	0 (0)	
Age (in years)				29.33***
18–29	29 (17)	22 (16)	7(23)	
30–39	51 (30)	48 (34)	3(10)	
40–49	54 (32)	50 (36)	4(13)	
50 or more	37 (22)	20 (14)	17(55)	
Gender				66.09***
Male	125 (73)	121 (86)	4(13)	
Female	46 (27)	19 (14)	27(87)	
Race				0.00
White or Caucasian	158 (92)	129 (92)	29(94)	
Other	13(8)	11(8)	2 (6)	
Ethnicity				0.73
Not Hispanic or Latino	158 (92)	131 (94)	27(87)	
Hispanic or Latino	13(8)	9(6)	4(13)	
Religion				1.14
Christian	93 (54)	74 (53)	19(61)	
Agnostic/atheist	33 (19)	29 (21)	4(13)	
Other	45 (26)	37 (26)	8(26)	
Relationship status				13.31***
In a relationship	137 (80)	120 (86)	17(55)	
Not in a relationship	34 (20)	20 (14)	14(45)	
Parental status				0.53
Parent or legal guardian	117 (68)	98 (70)	19(61)	
Not a parent or legal guardian	54 (32)	42 (30)	12(39)	
Living arrangement				2.32
With family	131 (77)	111 (79)	20(65)	
Not with family	40 (23)	29 (21)	11(35)	
Employment status				25.89***
Full-time	152 (89)	133 (95)	19(61)	
Less than full-time	19 (11)	7(5)	12(39)	
Income range				8.99**
Greater than $100,000	109 (64)	97 (69)	12(39)	
Less than $100,00	62 (36)	43 (31)	19(61)	
Education level				0.42
Less than bachelor's degree	89 (52)	75 (54)	14(45)	
Bachelor's degree or higher	82 (48)	65 (46)	17(55)	

The percentage points for the organization variable sum to greater than 100% because roughly 10% of all participants belonged to more than one organization, as indicated by the "Multiple organizations" category

**p < .01. ***p < .001

in its items, relying on participants' potentially differing individual definitions of compassion when responding (Strauss et al. 2016). Additionally, the definition of compassion underlying the SCBCS does not align with the definition used in our measure for self-compassion, which limits our ability to compare the influence of compassion across constructs (Strauss et al. 2016). However, the SCBCS's focus on compassion and altruism toward strangers makes it a suitable measure to use with first responders. Furthermore, according to previous research, the SCBCS demonstrated good psychometric properties such as internal reliability, split-half reliability, test/retest reliability, convergent validity, and divergent validity (Plante and Mejia 2016). The internal consistency of the SCBCS in the current study was excellent ($\alpha = .90$). A mean score was generated on a 1–7 scale, with higher scores indicating more compassionate love for others.

Psychological Distress The 21-item Depression, Anxiety, and Stress Scale (DASS-21) was used as a measure of general psychological distress within the last week (Lovibond and Lovibond 1995). The DASS-21 is a reliable and valid measure with three subscales: depression, anxiety, and stress (Osman et al. 2012). However, an overall score of emotional symptoms can be used (Beaufort et al. 2017). The observed internal consistency was excellent ($\alpha = .93$). In line with scoring instructions, a z-score based on a normative sample was generated, with higher scores indicating greater symptom severity (Lovibond and Lovibond 1995).

PTSD Symptoms The PTSD Checklist for DSM-5 (PCL-5) is a 20-item measure of PTSD symptoms over the past month with good psychometrics (Blevins et al. 2015). The observed internal consistency of the PCL-5 was excellent ($\alpha = .93$). A sum score was generated on a 0–80 scale, with higher scores indicating greater symptom severity.

Secondary Traumatic Stress Although several prior studies used the secondary traumatic stress subscale of the Professional Quality of Life Scale (ProQOL; Hemsworth et al. 2018; Stamm 2010), we chose to use a psychometrically superior measure, the Secondary Traumatic Stress Scale (STSS; Watts and Robertson 2015). The STSS is a 17-item measure of secondary traumatic stress symptoms within the last week. It has good psychometric properties (Bride et al. 2004), and the observed internal consistency was excellent ($\alpha = .94$). A sum score was generated on a 17–85 scale, with higher scores indicating more frequent symptoms.

Burnout An abbreviated, 9-item version of the Maslach Burnout Inventory (aMBI) was used to assess the frequency of burnout symptoms experienced within the context of being a first responder (McManus et al. 2000). The aMBI is a reliable measure (Riley et al. 2018), composed of three subscales,

with most demonstrating good internal consistency in the current sample: personal accomplishment ($\alpha = .64$; a lower Cronbach's alpha than was observed in previous research; Riley et al. 2018), depersonalization ($\alpha = .86$), and emotional exhaustion ($\alpha = .83$). A sum score on a 0–18 scale was generated for each subscale, with higher scores indicating a more frequent experience of the given construct.

Resilience The Brief Resilience Scale (BRS) is a reliable and valid 6-item measure of one's tendency to bounce back after a stressor (Smith et al. 2008). The observed internal consistency was good ($\alpha = .86$). A mean score on a 1–5 scale was generated, with higher scores indicating greater resilience.

Compassion Satisfaction The compassion satisfaction subscale of the ProQOL-5 (Stamm 2010) is a 10-item measure that is both reliable and valid, despite psychometric concerns about other ProQOL-5 subscales (Hemsworth et al. 2018). The internal consistency of the compassion satisfaction subscale in the current study was excellent ($\alpha = .92$). A sum score on a 10–50 scale was generated for this subscale, with higher scores indicating a more frequent experience of compassion satisfaction over the past 30 days.

Life Satisfaction The Satisfaction with Life Scale (SWLS; Diener et al. 1985) is a reliable and valid 5-item measure of life satisfaction (Pavot and Diener 2008). The internal consistency of the SWLS in the current study was good ($\alpha = .90$). A sum score was generated on a 5–25 scale, with higher scores indicating greater life satisfaction.

Data Analyses

Statistical analyses were conducted with R v.3.6.2 (R Core Team 2019). Descriptive statistics were calculated for all variables (see Supplemental Table 2), and Pearson correlations were calculated for all pairs of continuous variables (see Supplemental Table 3).

Multiple regression analyses were used to examine whether self-compassion and compassionate love explain a significant portion of the variance in the aforementioned psychological symptoms across two groups of first responders while controlling for social desirability, stress exposure, and any demographic variable that predicted differences between service roles. We began with a full model that included our control variables (social desirability, recent stress exposure, diversity of lifetime stress exposure, age range (0 = 18–25; 1 = 30–39; 2 = 40–49; 3 = 50+), relationship status (0 = in a relationship; 1 = not in a relationship), gender (0 = male; 1 = female), annual income range (0 = less than $100,000; 1 = greater than $100,000), and employment status (0 = full-time; 1 = not full-time)), as well as the main effects and interactions relevant to the primary research questions (service role (0 = traditional; 1 = emotional support), self-

compassion, compassionate love, self-compassion x service role, compassionate love x service role, self-compassion x compassionate love, and self-compassion x compassionate love x service role). We used backwards elimination to remove non-significant interaction terms. Backwards elimination was completed by first removing the three-way interaction term if it was non-significant, then removing the two-way interaction term with the highest p value at each step until all interaction terms included in the model were significant. This allowed us to more accurately estimate lower-order interaction terms or main effects when higher-order interactions were non-significant. Continuous variables were standardized. Assumptions were checked for all final models. Variance inflation factors (VIF) indicated that multicollinearity was not an issue (VIFs ≤ 2.23; suggested cutoff, VIF < 10; Marquardt 1970). (See Table 2 for final models.)

Results

Psychological Distress

Predictors in the final model explained 33% of the variance in psychological distress ($F(11, 159) = 7.19$, RMSE = .85, $p <$ .001). Self-compassion was the only significant predictor of interest, with greater self-compassion predicting lower levels of psychological distress ($β = − .51$, $SE(β) = .07$, $p < .001$), after accounting for the influence of other variables (demographics, stress exposure, social desirability, service role, and compassionate love).

PTSD Symptoms

Predictors in the final model explained 33% of the variance in PTSD symptoms ($F(11, 159) = 7.12$, RMSE = .85, $p < .001$). Self-compassion was the only significant predictor of interest, with greater self-compassion predicting lower levels of PTSD symptoms ($β = − .49$, $SE(β) = .07$, $p < .001$), after accounting for the influence of other variables (demographics, stress exposure, social desirability, service role, and compassionate love).

Secondary Traumatic Stress Symptoms

Predictors in the final model explained 26% of the variance in secondary traumatic stress symptoms ($F(11, 159) = 4.95$, RMSE = .89, $p < .001$). Self-compassion was the only significant predictor of interest, with greater self-compassion predicting lower levels of secondary traumatic stress ($β = − .38$, $SE(β) = .07$, $p < .001$), after accounting for the influence of other variables (demographics, stress exposure, social desirability, service role, and compassionate love).

Burnout

Personal Accomplishment Predictors in the final model explained 12% of the variance in feelings of personal accomplishment ($F(12, 158) = 4.19$, RMSE = .90, $p < .001$). Greater compassionate love was associated with greater personal accomplishment ($β = .31$, $SE(β) = .08$, $p < .001$), after accounting for the influence of other variables (demographics, stress exposure, social desirability, service role, and self-compassion). Additionally, we observed a significant two-way interaction between self-compassion and service role ($β = − .18$, $SE(β) = .20$, $p = .040$), such that greater self-compassion was a predictor of greater personal accomplishment in traditional first responders ($β = .21$, $SE(β) = .08$, $p = .013$), but not in emotional support first responders ($β = − .20$, $SE(β) = .18$, $p = .259$), after accounting for the influence of other variables (demographics, stress exposure, social desirability, and compassionate love). Due to the subscale's low observed internal consistency, these results should be interpreted with caution.

Depersonalization Predictors in the final model explained 53% of the variance in depersonalization ($F(11, 159) = 16.51$, RMSE = .71, $p < .001$). Greater self-compassion ($β = − .18$, $SE(β) = .06$, $p = .002$) and greater compassionate love ($β = -.32$, $SE(β) = .06$, $p < .001$) were independently associated with less depersonalization, after accounting for the influence of other variables (demographics, stress exposure, social desirability, and service role).

Emotional Exhaustion Predictors in the final model explained 43% of the variance in emotional exhaustion ($F(11, 159) = 10.74$, RMSE = .78, $p < .001$). Greater self-compassion ($β = − .35$, $SE(β) = .06$, $p < .001$) was associated with less emotional exhaustion, and emotional support first responders experienced less emotional exhaustion than traditional first responders ($β = − .26$, $SE(β) = .23$, $p = .004$), after accounting for the influence of other variables (demographics, stress exposure, social desirability, and compassionate love).

Resilience

Predictors in the final model explained 31% of the variance in resilience ($F(11, 159) = 6.49$, RMSE = .86, $p < .001$). Greater self-compassion ($β = .46$, $SE(β) = .07$, $p < .001$) was associated with greater resilience, and emotional support first responders endorsed higher levels of resilience than traditional first responders ($β = .21$, $SE(β) = .25$, $p = .033$), after accounting for other variables (demographics, stress exposure, social desirability, and compassionate love).

Compassion Satisfaction

Predictors in the final model explained 53% of the variance in compassion satisfaction ($F(12, 158) = 14.59$, RMSE = .71, $p <$

Table 2 Final models of self-compassion and compassionate love predicting mental health in first responders

Predictors	Beta values (SE) and model results by outcome								
	PD	PTS	STS	PA	DP	EE	RE	CS	LS
SD	−.10(.07)	.00(.07)	−.07(.08)	−.08(.08)	−.08(.06)	−.15*(.07)	.16*(.08)	.09(.06)	.08(.07)
CLM	−.10(.21)	.01(.08)	.02(.08)	.18*(.08)	.22***(.06)	.15*(.07)	−.01(.08)	−.08(.07)	.07(.08)
LEC	.19**(.07)	.24***(.07)	.12(.08)	.17*(.08)	.10(.06)	.11(.07)	−.05(.07)	.07(.06)	−.04(.07)
AGE	−.06(.07)	−.01(.07)	.01(.07)	.08(.08)	−.04(.06)	−.01(.07)	−.01(.07)	.10(.06)	−.12(.07)
REL	.13(.20)	.10(.20)	.10(.21)	−.30***(.21)	.02(.17)	.09(.18)	−.15(.20)	−.18**(.17)	−.26**(.20)
GEN	−.21*(.21)	−.19*(.21)	−.18(.22)	−.11(.22)	−.23*(.17)	−.06(.19)	−.18(.21)	.05(.18)	.08(.21)
INC	.04(.16)	−.05(.16)	−.02(.17)	−.18*(.18)	.05(.14)	.07(.15)	−.08(.17)	−.18*(.14)	.02(.16)
EMP	.10(.26)	.15(.26)	.10(.27)	−.01(.28)	.06(.21)	.01(.24)	−.12(.26)	−.02(.22)	−.04(.25)
SER	.00(.25)	−.03(.25)	−.15(.26)	−.18(.27)	−.11(.21)	−.26**(.23)	.21*(.25)	.28***(.21)	.03(.25)
SC	−.51***(.07)	−.49***(.07)	−.38***(.07)	.21*(.08)	−.18*(.06)	−.35***(.06)	.46***(.07)	.41***(.07)	.49***(.07)
CL	.00(.08)	.06(.08)	.05(.08)	.31***(.08)	−.32***(.06)	−.06(.07)	−.05(.08)	.30***(.06)	.07(.08)
SCxSER	–	–	–	−.18*(.20)	–	–	–	−.16(.16)	–
CLxSER	–	–	–	–	–	–	–	–	–
SCxCL	–	–	–	–	–	–	–	–	–
SCxCLxSER	–	–	–	–	–	–	–	–	–
F	7.19***	7.12***	4.95***	4.19***	16.51***	10.74***	6.49***	14.59***	7.58***
RMSE	.85	.85	.89	.90	.71	.78	.86	.71	.84
R^2	.33	.33	.26	.24	.53	.43	.31	.53	.34

.001). Greater compassionate love was associated with greater compassion satisfaction (β = .30, SE(β) = .06, p < .001), after accounting for the influence of other variables (demographics, stress exposure, social desirability, service role, and self-compassion). Additionally, we observed a significant two-way interaction between self-compassion and service role (β = − .16, SE(β) = .16, p = .018), such that greater self-compassion was a predictor of greater compassion satisfaction in traditional first responders (β = .41, SE(β) = .07, p < .001), but not in emotional support first responders (β = .04, SE(β) = .14, p = .782).

Life Satisfaction

Predictors in the final model explained 34% of the variance in life satisfaction (F(11, 159) = 7.58, RMSE = .84, p < .001). Self-compassion was the only significant predictor of interest, with greater self-compassion predicting greater levels of life satisfaction (β = .49, SE(β) = .07, p < .001), after accounting for the influence of other variables (demographics, stress exposure, social desirability, service role, and compassionate love).

Discussion

The present study assessed the associations of self-compassion and compassionate love with mental health in a sample of emotional support and traditional first responders. Results partially confirmed our hypotheses. Contrary to our predictions, we did not observe any interactions between self-compassion and compassionate love. However, consistent with predictions, greater self-compassion was associated with better mental health outcomes. Furthermore, compassionate love was protective whenever a significant main effect was observed. Additionally, first responders with different roles differed in their level of psychological health, and also the associations of self-compassion with symptoms. Specifically, for some outcome variables, traditional first responders reported lower levels of mental health, and self-compassion played a more important role in predicting their mental health.

Because prior studies examining compassion in helping professionals have focused primarily on populations with less dangerous occupational duties, we explored differences in the impact of self-compassion and compassionate love on first responders who primarily provide mental health services compared to traditional first responders. Exploratory analyses found that the impact of self-compassion differed according to first responder group on two outcomes, and the influence of compassionate love did not differ according to first responder group on any outcomes. For traditional first responders, but not for emotional support first responders, greater self-compassion predicted a greater sense of personal accomplishment and more compassion satisfaction. This suggests that,

under some circumstances, self-compassion may be a more important protective factor for traditional first responders compared to emotional support first responders. However, for most mental health outcome measures, the impact of self-compassion and compassionate love did not depend on the type of service provided. Furthermore, when no interaction was present, we interpreted main effects of service role, and found that traditional first responders were more at risk for experiencing negative psychological outcomes (i.e., greater emotional exhaustion and lower resilience), even after controlling for other predictors in the model. Although we controlled for frequency of recent stress exposure and variety of trauma related history, traditional first responders might still be exposed to more potential traumas that directly threaten their safety, and this may explain the remaining difference in symptoms. Given the differing role of emotional support first responders (i.e., providing on-site emotional support when called to a scene, such as in the case of a sudden death of a family member) and the high risk of injury that traditional first responders face (Reichard and Jackson 2010), we suspect there may have been meaningful but undetected differences in their experiences of stressors.

In cases where the interaction between self-compassion and service role was non-significant, we examined the main effect of self-compassion. Consistent with prior findings suggesting that self-compassion in first responders protects against mental health issues such as depression and promotes resilience (Bilsker et al. 2019; Kaurin et al. 2018), we observed that self-compassion protected against general psychological distress, post-traumatic stress, secondary traumatic stress, depersonalization, and emotional exhaustion. Additionally, we observed that self-compassion was related to greater resilience and life satisfaction. Although prior studies suggested positive effects of self-compassion on mental health among members of the general population and helping professionals (MacBeth and Gumley 2012; Raab 2014; Zessin et al. 2015), very few studies have been conducted among first responders. To date, only three published studies were conducted with first responders, two of which primarily focused on depression and resilience as outcomes (Bilsker et al. 2019; Kaurin et al. 2018), and the third did not directly assess the relationship between self-compassion and mental health (Beaumont et al. 2016c). The present study confirmed the protective role of self-compassion for a broad array of mental health outcomes across a wide range of first responders.

Main effects of compassionate love were also observed, even after accounting for the influence of other important predictors (e.g., self-compassion, social desirability). According to our results, compassionate love protected against depersonalization and was associated with a greater sense of personal accomplishment and compassion satisfaction. Thus, our results were consistent with prior findings of other-compassion predicting psychological health, such as the observation that mindful other-

compassion predicted greater compassion satisfaction and lower burnout in health professionals (Beaumont et al. 2016a). However, it is also important to note that compassionate love for others did not independently predict any of the other psychological outcomes evaluated in the present study, such as general psychological distress, post-traumatic stress, or secondary traumatic stress. These null findings were consistent with studies that observed no relationship between other-compassion constructs and psychological symptoms, such as no relationship between compassionate love and symptoms of depression and PTSD in veterans (Kearney et al. 2013) and no relationship between empathy and secondary traumatic stress in police officers (Turgoose et al. 2017).

On the other hand, our results did not align with the subset of studies, which found that other-compassion constructs were potential risk factors, such as the observation that empathy predicted burnout in police officers (Turgoose et al. 2017) and that mindful other-compassion predicted secondary traumatic stress in mental health professionals (Mantelou and Karakasidou 2019). It is possible that we did not observe an association between compassionate love and psychological symptoms because these studies operationalized other-compassion differently (i.e., not as compassionate love). Given the overlap between compassionate love, mindful other-compassion, and empathy (Hwang et al. 2008; Pommier et al. 2019), we expected to observe similar findings. However, it is possible that the differences in our operationalization (e.g., compassionate action in addition to empathic feelings, and a focus on strangers) led to different findings. Furthermore, discrepant findings could also be due to using different measures of secondary traumatic stress (e.g., ProQOL vs STSS), or to sampling from different populations.

Limitations and Future Research

The present study has several limitations. Firstly, we used a convenience sample of first responders based on our community contacts. This limits the generalizability of our results, as our sample may not be representative of the full first responder population. However, the breadth of our sample exceeds that of prior research with first responders (e.g., Kaurin et al. 2018). Our sample also included first responders of different roles, but the sample size for emotional responders was limited. Thus, results comparing across groups were only powered to detect larger effects, and results may have been affected by differences in variance in the outcome measures for one group versus the other. Additional effects might be detected in future studies with a larger sample size. Moreover, we observed demographic differences by service role and attempted to control for these differences by including demographic measures in our models. However, statistical controls are imperfect corrections for study design limitations, and the

demographic differences might still have influenced the observed effects of service role. Furthermore, the current study was cross-sectional, so our results could not determine direction of causality. Limitations also exist in relation to our reliance on self-report measures. Despite our attempts to protect participants' anonymity and control for social desirability, it is still possible that other potential problems with self-report, such as limitations in insight or retrospective recall biases, influenced self-reported responses. Furthermore, given the demonstrated value of controlling for social desirability, researchers should also consider other scales, such as the Paulhus Deception Scales (PDS), which can provide more nuanced information about the influence of both deliberate and nondeliberate socially desirable responding (Paulhus 1998).

Additional limitations exist in relation to the specific self-report measures we used. Our stress exposure control variables did not assess recent exposure to specific potentially traumatic events. Future research should assess if compassion is particularly influential depending on exposure to specific stressors, such as those involving life threat or moral injury. Moreover, our mental health measures assessed symptoms across different time frames (e.g., past week/month), limiting our ability to compare results across outcomes. Additionally, our personal accomplishment scale showed low internal consistency in the current study, so these results should be interpreted with caution and replicated using a more reliable measure. There were also notable limitations associated with our compassion measures. The validity of the SCBCS has been questioned, given the mindful aspects of compassion which the scale does not assess, as well as the scale's reliance on respondents' ability to interpret the word "compassion," which is used in two of its items (Strauss et al. 2016). Although this measure was useful given its focus on interactions with strangers, future research could better compare the influences of self- and other-compassion by using measures based on more closely aligned definitions of compassion (such as a mindfulness-based definition for both; Neff 2003; Pommier et al. 2019). Additionally, questions were recently raised concerning whether a total score should be used to assess self-compassion as a protective factor, with critics suggesting creating separate scores for positively and negatively worded items (Muris and Otgaar 2020). According to post hoc analyses, our results were generally consistent when using either score, supporting self-compassion's role as a protective factor and suggesting that both sets of items contribute to the predictive power of the total score (see Supplementary Materials).

Despite limitations, the present study provided evidence suggesting that mindful self-compassion and altruistically oriented compassionate love might serve as protective factors for first responders, a population frequently exposed to potentially traumatic events. The strong beta weights of our variables of

interest, even after including several control variables, indicate that self-compassion, compassionate love, and service role could be important predictors of first responders' mental health (see Table 2). Results suggest that self-compassion is particularly important for predicting psychological symptoms (e.g., general psychological distress), and compassionate love is particularly important for predicting outcomes related to engaging in work as a helping professional (e.g., aspects of burnout). Given previous findings relating burnout to poor work performance and high turnover (Swider and Zimmerman 2010), our results suggest that compassionate love could be important in supporting first responders' abilities to better serve their communities. Pending longitudinal research, results suggest that compassion-focused interventions could be beneficial for protecting the mental health of first responders.

Compliance with Ethical Standards

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