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## BRIEF REPORT

# Mindfulness, Self-Compassion, Posttraumatic Stress Disorder Symptoms, and Functional Disability in U.S. Iraq and Afghanistan War Veterans

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Mindfulness and self-compassion are overlapping, but distinct constructs that characterize how people relate to emotional distress. Both are associated with posttraumatic stress disorder (PTSD) and may be related to functional disability. Although self-compassion includes mindful awareness of emotional distress, it is a broader construct that also includes being kind and supportive to oneself and viewing suffering as part of the shared human experience—a potentially powerful way of dealing with distressing situations. We examined the association of mindfulness and self-compassion with PTSD symptom severity and functional disability in 115 trauma-exposed U.S. Iraq/Afghanistan war veterans. Mindfulness and self-compassion were each uniquely, negatively associated with PTSD symptom severity. After accounting for mindfulness, self-compassion accounted for unique variance in PTSD symptom severity ( $f^2 = .25$ ; medium ES). After accounting for PTSD symptom severity, mindfulness and self-compassion were each uniquely negatively associated with functional disability. The combined association of mindfulness and self-compassion with disability over and above PTSD was large ( $f^2 = .41$ ). After accounting for mindfulness, self-compassion accounted for unique variance in disability ( $f^2 = .13$ ; small ES). These findings suggest that interventions aimed at increasing mindfulness and self-compassion could potentially decrease functional disability in returning veterans with PTSD symptoms.

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Approximately 23% of Iraq/Afghanistan veterans develop clinically significant levels of posttraumatic stress disorder (PTSD; e.g., Fulton et al., 2015). Extensive literature documents a strong association between PTSD and functional impairment across multiple domains (see Rodriguez, Holowka, & Marx, 2012, for a review). Although there are several efficacious treatments for PTSD, these treatments are often less effective in veteran samples (Steenkamp & Litz, 2013). Therefore, greater understanding of modifiable factors that influence PTSD and functional impairment is needed to enhance treatment efforts and aid the readjustment of war veterans. Two such modifiable traits are mindfulness and self-compassion.

Broadly defined, mindfulness is self-regulation of attention in the present moment with acceptance and curiosity (Bishop et al., 2004). Mindfulness helps people gain insight into their thoughts and emotions and approach them with greater objectivity (Teasdale et al., 2002). Mindfulness is associated with

greater quality of life and less emotional and physical distress (Grossman, Niemann, Schmidt, & Walach, 2004), including PTSD symptom severity among veterans (Bernstein, Tanay, & Vujanovic, 2011). Self-compassion refers to how one relates to oneself when the present moment is painful. Neff (2003b) defines self-compassion as having three interacting components: mindful awareness of suffering (vs. overidentification), self-kindness (vs. self-judgment), and a sense of common humanity (vs. isolation). Self-compassion involves acknowledging the difficulty of the experience, responding inward with kindness and support, and remembering that suffering is part of the shared human experience. Self-compassion is associated with well-being in multiple life domains (Neff, 2012) and negatively associated with a range of psychopathology (MacBeth & Gumley, 2012), including PTSD symptom severity in war veterans after accounting for level of combat exposure (Hiraoka et al., 2015).

Mindfulness and self-compassion overlap in that mindful awareness is a facet of self-compassion; however, there are important distinctions between the two constructs (Neff & Dahm, 2015). The mindfulness component of self-compassion emphasizes balanced awareness of emotional distress in particular; whereas mindfulness generally refers to present-moment awareness of any experience. Moreover, self-compassion represents a way of relating to oneself—not just the experience—when suffering. Mindfulness and self-compassion are also conceptualized as arising from distinct, yet related, physiological systems. Mindfulness is a form of metacognition and attention regulation associated with increased activity in the middle prefrontal cortex (Siegel, 2007). Compassion is linked to older caregiving systems, which involve oxytocin and other hormones related to attachment (Goetz, Keltner, & Simon-Thomas, 2010).

Relatively few studies have directly compared the associations of mindfulness and self-compassion with psychopathology and functioning. Van Dam, Sheppard, Forsyth, and Earleywine (2011) reported that self-compassion was a stronger cross-sectional correlate of anxiety, depression, and quality of life than mindfulness. Other studies have shown that self-compassion was a stronger negative correlate than mindfulness of depression, anxiety, negative affect, unhappiness, and shame-proneness (Woodruff et al., 2014; Woods & Proeve, 2014). These studies suggest that mindfulness and self-compassion make unique and possibly differential contributions to mental health outcomes and quality of life. To date, no study of which we are aware has examined associations between both mindfulness and self-compassion with PTSD symptom severity and disability in veterans.

The objectives of the current study were to determine if mindfulness and self-compassion were uniquely associated with PTSD and functional disability, and whether self-compassion accounted for incremental variance over and above mindfulness. Based on prior research, we expected that mindfulness and self-compassion would each be negatively associated with PTSD symptom severity. We hypothesized that (a) mindfulness and self-compassion would each be uniquely associated with PTSD symptom severity, (b) self-compassion would ac-

count for unique variance in PTSD symptoms after accounting for mindfulness, (c) mindfulness and self-compassion would each be uniquely negatively associated with disability after accounting for PTSD symptoms, and (d) self-compassion would account for unique variance in disability over and above PTSD symptoms and mindfulness.

## Method

### Participants and Procedure

The sample comprised 115 U. S. Iraq/Afghanistan war veterans recruited through direct mailings, advertising at enrollment sites, and presentations to clinical staff. Recruitment oversampled veterans with PTSD due to the aims of the parent study. Participants had been exposed to one or more traumatic events during their military service and could not meet criteria for a bipolar or psychotic disorder. The majority of participants were Caucasian (57.4%) and male (83.5%), with good representation from African American (25.2%) and Hispanic/Latino (31.3%) populations. The mean participant age was 37.41 years ( $SD = 10.20$ ).

Following informed consent, participants completed a structured clinical interview and self-report measures. Structured interviews were conducted by clinical psychologists or master's-level technicians who completed comprehensive assessment training. Diagnostic consensus was reached for each interview via detailed discussion of individual PTSD symptoms during weekly diagnostic review groups overseen by doctoral-level clinical psychologists with significant assessment experience. Nearly half of the sample (42%) met criteria for current military-related PTSD. This study was approved by the local Central Texas Veterans Healthcare System Institutional Review Board. Participants received financial compensation for their participation.

### Measures

The Clinician-Administered PTSD Scale for DSM-IV (CAPS; Blake, Weathers, Nagy, & Kaloupek, 1995) was used to assess PTSD symptom severity. The CAPS yields a continuous PTSD symptom severity score and assesses full diagnostic criteria. We used the scoring procedure in which a frequency score of 1 or more on a scale of 0 = *none of the time* to 4 = *most or all of the time* and intensity of 2 or more on a scale of 0 = *none* to 4 = *extreme* were required for a particular symptom to meet criteria (Blake et al., 1995). Total symptom severity during the past 30 days was used in the analyses. Internal consistency was  $\alpha = .92$ .

The Mindfulness Attention Awareness Scale (MAAS; Brown & Ryan, 2003), a 15-item self-report scale, was used to assess trait mindfulness, emphasizing enhanced awareness of and attention to current experience. The MAAS total score was used in the analyses, with scores ranging from 15 to 90. Items are rated using a Likert scale ranging from 1 = *almost always* to

6 = *almost never*. Sample items include “I find myself doing things without paying attention,” and “I find myself preoccupied with the future or the past.” Internal consistency was  $\alpha = .94$ .

The Self-Compassion Scale (SCS; Neff, 2003b), a 26-item self-report questionnaire, was used to assess self-compassion. We used the mean item score across all SCS items, with total mean scores ranging from 1 to 5. Respondents describe how they relate to themselves during times of distress by using a 5-point Likert scale ranging from 1 = *almost never* to 5 = *almost always*. Sample items include “When times are really difficult, I tend to be tough on myself”; “I’m tolerant of my own flaws and inadequacies”; and “When I’m down and out, I remind myself that there are lots of other people in the world feeling like I am” (Neff, 2003b). Higher scores reflect higher levels of self-compassion. Internal consistency of the SCS was  $\alpha = .95$ . Although self-compassion includes mindfulness as one facet, self-compassion is a broader construct. In the current study, the bivariate association between the mindfulness subscale of the SCS and the MAAS ( $r = .44$ ) was very similar to both other SCS subscales ( $r = .53$ ) and the outcome variables (CAPS  $r = -.50$ , WHODAS 2.0  $r = -.49$ ).

The World Health Organization Disability Assessment Schedule 2.0 (WHODAS 2.0; Üstün, 2010) is a 36-item self-report measure of functional disability in the past 30 days. It provides a total score based on the mean of six domains: mobility, self-care, cognition, getting along with others, participation in society, and life activities. Participants rate items on a 5-point Likert scale from 1 = *no difficulty* to 5 = *extreme difficulty or inability to perform the activity*. Sample items include “Analyzing and finding solutions to problems in day-to-day life” and “Getting out of your home.” Higher scores reflect greater levels of disability. The total WHODAS 2.0 score was used in the analyses, with scores ranging from 1 to 5. Internal consistency was  $\alpha = .91$ .

**Data Analysis**

Regression analyses were conducted in SPSS Version 17 and used to test the study hypotheses. Specifically, the significance of regression coefficients and change in  $R^2$  were examined to determine whether unique variance was accounted for by the independent variables (Stevens, 2012). There were no missing data.

**Results**

All variables were normally distributed, and no evidence for multicollinearity was found in the regression diagnostics. Preliminary analyses involving  $t$  tests and one-way analyses of variance (ANOVAS) did not reveal differences on any study variable as a function of demographic characteristics. The results of the regression analyses are summarized in Tables 1 and 2. As hypothesized, mindfulness and self-compassion were each uniquely and negatively associated with PTSD symptom

Table 1  
*Hierarchical Regression Analysis of PTSD Symptom Severity*

Variable	$\beta$	$t$	$SE$	$F$	$R^2$	$\Delta R^2$
Step 1				52.44***	.36***	
MAAS	-.60***	-7.24***	2.25***			
Step 2				46.14***	.50***	.14***
MAAS	-.30**	-3.19**	2.56**			
SCS	-.48***	-5.10***	3.47***			

Note.  $N = 115$ . PTSD = posttraumatic stress disorder; SCS = Self-Compassion Scale; MAAS = Mindful Attention and Awareness Scale. Dependent variable = Clinician-Administered PTSD Scale.

\*\* $p < .01$ . \*\*\* $p < .001$ .

severity ( $f^2 = 1.0$ ; large effect size [ES] for the combined association of mindfulness and self-compassion); self-compassion was associated with PTSD symptom severity after accounting for mindfulness ( $f^2 = .28$ ; medium ES); mindfulness and self-compassion were each uniquely associated with disability after accounting for PTSD symptoms ( $f^2 = .41$ ; large ES for the combined association of mindfulness and self-compassion after accounting for PTSD symptoms); and self-compassion accounted for disability over and above PTSD symptoms and mindfulness ( $f^2 = .13$ ; small ES).

**Discussion**

Consistent with hypotheses, the present research found that both mindfulness and self-compassion uniquely contributed to disability among veterans, even after accounting for PTSD symptom severity. This finding suggests that mindfulness and self-compassion may impact how veterans relate to trauma-related distress. Specifically, greater levels of mindfulness and self-compassion may help to minimize the effects of traumatic experiences on veterans’ overall functioning.

Table 2  
*Hierarchical Regression Analysis of Functional Disability*

Variable	$\beta$	$t$	$SE$	$F$	$R^2$	$\Delta R^2$
Step 1				114.86***	.55***	
CAPS	.74***	10.72***	.00***			
Step 2				83.10***	.64***	.10***
CAPS	.52***	6.65***	.00***			
MAAS	-.38***	-4.86***	.05***			
Step 3				63.70***	.68**	.03**
CAPS	.40***	4.71***	.00***			
MAAS	-.28**	-3.55**	.05**			
SCS	-.27**	-3.10**	.08**			

Note.  $N = 115$ . Dependent variable = World Health Organization Disability Assessment Schedule 2.0; SCS = Self-Compassion Scale; MAAS = Mindful Attention and Awareness Scale; CAPS = Clinician-Administered PTSD Scale.

\*\* $p < .01$ . \*\*\* $p < .001$ .

Because self-compassion includes mindful awareness of emotional pain, which overlaps with mindfulness more generally, we examined whether the broader construct of self-compassion accounted for unique variance in PTSD symptoms and disability after accounting for mindfulness. Our results are consistent with previous research that found self-compassion to be a stronger correlate than mindfulness of quality of life and negative affective states (Van Dam et al., 2011; Woodruff et al., 2014; Woods & Proeve, 2014). Thus, it may be particularly important to target the unique aspects of self-compassion along with mindfulness to minimize the impact of trauma-related distress on functioning.

These findings were consistent with studies of veterans who participated in mindfulness and compassion-focused interventions and reported significant improvements in PTSD symptoms (e.g., Boden et al., 2012; Kearney, Malte, et al., 2013) and mental health-related quality of life (Kearney, McDermott, et al., 2013). Increases in mindfulness and self-compassion were associated with PTSD symptom reductions in two of these studies (Boden et al., 2012; Kearney, Malte, et al., 2013). Mindful Self-Compassion (Neff & Germer, 2013) is an intervention that focuses solely on increasing mindfulness and self-compassion. More research is warranted to determine whether compassion-focused treatments are efficacious, whether they may be used as stand-alone or as adjunctive interventions for PTSD, and whether they improve functioning. Future research should also examine if existing evidenced-based treatments for PTSD that address awareness of thoughts and feelings and excessive self-blame (e.g., cognitive processing therapy; Resick & Schnicke, 1993) enhance self-compassion and whether changes in self-compassion represent a mechanism of change in such treatments.

Several limitations should be considered, including use of self-report measures, generalizability of the findings, and the cross-sectional study design. Future research should expand on these findings and examine whether mindfulness and self-compassion, including pretrauma measures of these traits, predict mental health and functional outcomes over time.

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