Psychological Trauma: Theory, Research, Practice, and Policy

Examining a Brief Self-Compassion Intervention for Emotion Regulation in Individuals With Exposure to Trauma

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Objective: Research suggests that the overuse of maladaptive emotion regulation strategies, such as avoidance, represents a vulnerability following trauma exposure. Conversely, self-compassion, which impacts emotion regulation through the acceptance of negative emotions, may be an adaptive strategy for managing posttraumatic stress (PTS). *Method:* An experimental design was used to examine whether a single-session of self-compassion training improved self-compassion and decreased difficulties in emotion regulation, compared to muscle relaxation training, for trauma-exposed undergraduates. *Results:* Findings replicated previous research among these three constructs (PTS, self-compassion, and difficulties with emotion regulation), with relationships found in the expected directions. However, there was not conclusive evidence to suggest that participating in a brief self-compassion intervention was more effective for reducing difficulties with emotion regulation than participating in a muscle relaxation training intervention. *Conclusions:* Results supported inverse associations between self-compassion and posttraumatic stress, as well as self-compassion and difficulties with emotion regulation. Future research is needed to investigate how self-compassion skills training can be best utilized to produce clinically significant and long-lasting changes in emotion regulation.

Clinical Impact Statement
Findings from a sample of trauma-exposed undergraduates demonstrated that greater self-compassion was associated with fewer symptoms of posttraumatic stress and increased emotion regulation. Self-compassion interventions aimed at increasing emotion regulation likely require several sessions and time for practice of self-compassion skills.

Difficulties with emotion regulation have been associated with exposure to trauma, such that memories of the trauma may elicit heightened emotional and physiological responses that are experienced as uncontrollable and unpredictable (McLean & Foa, 2017). Additionally, overuse of avoidance strategies for coping with the negative emotional response has been linked to increased symptoms of PTS (Barlow et al., 2017). Research suggests that emotion regulation may be improved through skills training focused on reducing avoidance and increasing adaptive emotion regulation strategies. Emerging literature on interventions that aim to improve acceptance of distressing emotions has begun to focus on the utility of targeting self-compassion.

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Self-compassion (SC) has been described as a way of relating to oneself that is kind and understanding, particularly during times that are personally difficult or challenging (Neff, 2003). Research has found that SC is inversely related to many outcomes and associated symptoms of PTSD, including rumination, avoidance, self-criticism, and difficulties with emotion regulation (Barlow et al., 2017; Leary et al., 2007; Neff, 2003). Additionally, SC may serve as a protective factor for PTSD, as greater levels of SC have been associated with resilience in the presence of threat or trauma and greater posttraumatic growth (Inwood & Ferrari, 2018). Further, brief (e.g., one session) SC inductions have been studied as a means to potentially increase skills, including improved emotion regulation and decreased symptoms of psychopathology (Ascone et al., 2017; Leary et al., 2007), demonstrating mixed results. Taken together, the extant literature on brief SC interventions provides guidance on potential best practices for designing interventions. For example, it is recommended that real-life scenarios be utilized as content for experimental sessions, as it appears this allows for greater emotional processing. Further, SC represents a potential target for intervention across different levels of severity of psychological disorders. More research is needed to empirically

establish that increases in SC are related to reduced difficulties with emotion regulation for those with exposure to trauma.

The aim of the current study was to determine whether a brief SC intervention, as compared to a muscle relaxation training (MRT) condition, led to significantly greater changes in emotion regulation following a mood induction for those with history of trauma. It was predicted that, at baseline, higher levels of SC will be associated with fewer symptoms of posttraumatic stress and higher levels of SC will be associated with fewer difficulties with emotion regulation. Second, we hypothesized that participants in the SC intervention will show significant improvements in SC as compared to those in the MRT condition from baseline to post intervention. Third, we hypothesized that participants in the SC intervention will report a greater decrease in emotion regulation difficulties as compared to those in the MRT condition from baseline to post intervention.

Method

Participants

Data were obtained from a sample of 85 undergraduate students (63.4% identified as female and 90.7% were aged 18–22 years old) who endorsed at least one potentially traumatic event on the screening measure. Additionally, 80.2% of the sample identified as non-Hispanic-or-Latino ethnicity and 59.8% identified as White. Meditation experience has been associated with higher SC and well-being (Baer et al., 2012), thus participants were asked if they practiced meditation on a regular basis (self-defined) and 12% reported "yes."

Measures

Life Events Checklist for *DSM–5* (LEC-5; Weathers, Blake et al., 2013). The LEC-5 was used as a screening measure and assesses for lifetime exposure to 16 potentially traumatic Criterion A events. Participants rate each item according to their level of exposure (*happened to me, witnessed it, learned about it, part of my job, not sure, doesn't apply*), with the option to endorse as many responses as apply. Participants were asked to select the most distressing event that happened to them and this served as the index event throughout the study.

Difficulties in Emotion Regulation Scale-16 (Bjureberg et al., 2016). The DERS-16 is a 16-item self-report measure of emotion regulation based on the full-length Difficulties in Emotion Regulation Scale. Participants responded to each item on a 5-point scale from 1 (*Almost never, 0–10%*) to 5 (*Almost always, 91–100%*). In the current study, the DERS-16 demonstrated excellent internal consistency at time 1 ($\alpha = .94$), time 2 ($\alpha = .93$), and time 3 ($\alpha = .94$).

PTSD Checklist for *DSM–5* (PCL-5; Weathers, Litz, et al., 2013). Participants also completed the PCL-5, which is a widely used, self-report measure to quantify PTSD symptoms. It consists of 20 items corresponding to the PTSD diagnostic criteria. Participants were asked to rate how much they are bothered by specific symptoms on a five-point scale ranging from 0 (*not at all*) to 4 (e*xtremely*). The scale demonstrated excellent internal consistency ($\alpha = .95$) in the current sample.

Self-Compassion Scale (SCS; Neff, 2003). The SCS was used to measure levels of SC in participants. This scale includes 26 items and measures six dimensions of SC: self-kindness, self-judgment, common humanity, isolation, mindfulness, and overidentification. The items are rated on a 5-point Likert-style scale, with responses ranging from 1 (*almost never*) to 5 (*almost always*). The SCS demonstrated good internal consistency at all timepoints (time 1 $\alpha = .87$; time 2 $\alpha = .89$; and time 3 $\alpha = .91$).

Subjective Units of Distress Scale (SUDS). SUDS was used as self-report measures of subjective distress at the three time points, ranging from 0 (*none*) to 10 (*extreme*).

Procedure

Potential participants were screened via the university's mass testing pool and all students who endorsed at least one item on the LEC-5 were invited to participate in the study. Following informed consent, participants completed baseline study measures (i.e., SCS, DERS-16, SUDS, PCL-5, and demographics) and were informed that the experimental conditions would teach them a strategy for coping with the difficult emotions that were induced, however, they were not informed about the nature of the intervention. Random assignment was completed by randomly preassigning each participant number to an experimental condition, resulting in 41 participants in the MRT condition and 44 participants in the SC condition.

The experiment began with a negative mood induction where all participants were asked to spend 10 minutes writing about their most traumatic or distressing experience (adapted from Leary et al., 2007). All participants then completed time 2 measures (SCS, DERS-16, and SUDS). Instructions for the DERS-16 were modified to ask participants to rate how they were regulating emotions in the present moment (Helm, 2016). Next, participants were randomly assigned to either the SC condition or the MRT condition and listened to an audio recording that gave verbal instructions for coping with distressing and self-critical emotions, based on their assigned condition. Lastly, participants again wrote about the traumatic event (15 minutes) based on how they currently felt after practicing the coping skill from their assigned experimental condition. Participants then completed a final version of the DERS-16, with the instructions modified to assess for how participants were regulating emotions in the present moment as well as the SCS and SUDS (time 3).

Results

Analyses were conducted using IBM SPSS v25.0 statistical software. Online supplemental materials Table S1 includes means, standard deviations, and bivariate correlations among study variables. One-way analysis of variance (ANOVA) models indicated that participants did not differ in baseline SC scores, $F(1, 84) = .64$, $p = .43$ nor baseline emotion regulation scores, $F(1, 84) = 3.93$, $p = .051$. Utilizing a suggested cutoff score of 31 (Bovin et al., 2016), approximately 57.6% of the sample would meet probable diagnostic threshold for PTSD. A paired-samples t-test examining SUDS scores at the two time points confirmed a statistically significant increase in self-reported SUDS scores from baseline ($M = 3.50$, $SD = 1.77$) to postinduction ($M = 4.26$, $SD = 2.02$), $t(81) = -5.30$, $p < .001$, providing evidence for a successful negative mood induction.

Table 1
Bivariate Correlations Among Self-Report Measures at All time Points (N = 85)

	1	2	3	4	5	6	7	8
1. PCL-5 Total	—	−.410**	−.343**	−.250**	.693**	.656**	.585**	−.012
2. T1 SCS Total	—	—	.762**	.728**	−.567**	−.362**	−.370**	.062
3. T2 SCS Total	—	—	—	.711**	−.462**	−.375**	−.299**	−.042
4. T3 SCS Total	—	—	—	—	−.442**	−.350**	−.475**	−.004
5. T1 DERS Total	—	—	—	—	—	.723**	.665**	−.041
6. T2 DERS Total	—	—	—	—	—	—	.772**	.024
7. T3 DERS Total	—	—	—	—	—	—	—	−.044
8. Meditation exp.	—	—	—	—	—	—	—	—
M	37.42	77.12	75.91	77.01	34.71	28.76	25.54	1.88
SD	15.33	15.68	15.06	15.27	12.17	10.82	9.65	.33
Min	20.00	36.00	37.00	38.00	16.00	16.00	16.00	1.00
Max	75.00	119.00	117.00	117.00	71.00	58.00	52.00	2.00

Note. PCL-5 Total= total score on PTSD-Checklist for DSM-5 at baseline; T1 SCS Total = total score on Self-Compassion Scale at baseline; T2 SCS Total = total score on Self-Compassion Scale at time 2; T3 SCS Total = total score on Self-Compassion Scale at time 3; T1 DERS Total = total score on Difficulties in Emotion Regulation Scale-16 at baseline; T2 DERS Total = total score on Difficulties in Emotion Regulation Scale-16 at time 2; T3 DERS Total = total score on Difficulties in Emotion Regulation Scale-16 at time 3.
* $p < .05$, ** $p < .01$.

Analyses

Results indicated that SC was significantly negatively associated with posttraumatic stress ($r = −.410$, $p < .001$) at baseline. Additionally, SC was significantly negatively associated with difficulties with emotion regulation ($r = −.567$, $p < .001$) at baseline.

A mixed model ANCOVA with time (baseline, time 2, time 3) x condition (SC, MRT) for SC scores (SCS), controlling for meditation experience, was conducted to test whether participants in the SC intervention would show significant improvement in SC compared to those in the MRT condition from baseline to postintervention. Results demonstrated that the interaction of time and condition was not significant, $F(2, 162) = .21$, $p = .81$, $\eta^2p = .003$. Further, the main effect of time was not significant, $F(2, 162) = .70$, $p = .50$, $\eta^2p = .01$, nor was the main effect of experimental condition, $F(1, 81) = 1.10$, $p = .30$, $\eta^2p = .01$, meaning neither time nor experimental condition had a significant effect on self-compassion.[1]

A second mixed model ANCOVA with time (baseline, time 2, time 3) x condition (SC, MRT) for emotion regulation (DERS-16) scores, controlling for meditation experience, was conducted in order to test whether individuals in the SC intervention would report a greater decrease in emotion regulation difficulties compared to those in the MRT condition from baseline to postintervention. Results demonstrated a significant interaction of time and condition, $F(2, 162) = 5.77$, $p = .004$, $\eta^2p = .07$, though this was in the opposite of the expected direction (i.e., those in the MRT condition demonstrated significantly greater decreases in emotion regulation difficulties than those in the SC condition).[1]

Discussion

The present study examined whether being kind to oneself and accepting distressing emotions led to greater decreases in emotion regulation difficulties compared to muscle relaxation training for those with exposure to trauma. Associations among self-report measures at baseline were consistent and in the expected directions with existing literature; specifically, individuals with greater self-compassion demonstrated fewer symptoms of posttraumatic stress

and higher levels of self-compassion were associated with fewer difficulties with emotion regulation (Barlow et al., 2017).

There was not evidence of a significant improvement in SC for the SC condition compared to those in the MRT condition from baseline to postintervention. Visual inspection of the mean SCS scores for the SC intervention condition suggests an increase in SC from baseline to time 3, however, analyses did not find statistical significance. One reason for this may be related to issues with how SC is measured. The SCS is the most widely used instrument for measuring SC but has limited evidence for use over a brief period of time (i.e., as a state measure). These limitations, coupled with a lack of time for participants to practice the SC skills, may have hindered the ability to assess significant changes in SC in this experimental condition.

Additionally, this study found that those in the MRT condition demonstrated significantly greater decreases in emotion regulation difficulties than those in the SC condition, which was in the opposite of the hypothesized direction. Regulating the physical response to negative emotions (i.e., heart racing, tension in the body) through physical gestures, rather than through more cognitive interventions such as SC skills, may be a more accessible technique for undergraduates for managing distress symptoms. The mind-body approach is also supported in the literature, providing evidence for a connection between trauma memories and physiological regulation (van der Kolk, 2002). Further, utilizing SC as a tool for accepting negative emotions may have required more advanced training. As mentioned above, the inability of participants to practice and fully comprehend SC skills likely decreased their effectiveness within the experimental setting.

Limitations

The current study is not without limitations. The use of an undergraduate, volunteer sample reduces generalizability of results to the wider population and to more complex posttrauma presentations. Additionally, the current study lacked a third control

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[1] The authors also conducted the analyses with meditation experience removed. The results remained consistent.

condition, limiting the ability to say whether changes in either of the conditions could not be attributed to naturalistic reductions in negative emotions due to the passage of time. Given that participants wrote about the traumatic event two times, there is the potential that multiple exposures to details of the event led to reductions in negative affect. Future studies may also assess for comorbid conditions and psychiatric disorders in order to verify that both experimental conditions have comparable rates of psychiatric disorders. Another possible limitation may be the issue of gender, as women tend to report lower SC than men related to cultural norms of "masculinity" and "femininity" (Yarnell et al., 2015). It may be that women who conform more strongly to traditionally feminine gender roles of self-sacrifice and a decreased inability to "bounce back" from adverse events may demonstrate lower levels of SC, whereas men who adhere to traditional masculine roles related to confidence in one's abilities may show higher levels of SC.

Conclusions and Future Directions

The present study was the first to examine relationships among SC, emotion regulation, and trauma exposure in the context of a single session experimental intervention. Findings replicated previous research among these three constructs, however, there was not conclusive evidence to suggest that participating in a brief SC intervention was more effective for reducing difficulties with emotion regulation or increasing SC than participating in an MRT intervention. Future research may examine the sufficient "dosing" for a SC intervention, which likely falls closer to two or three sessions and includes practice of SC skills. Results suggest a need for further investigation into how SC skills training can be best utilized to produce clinically significant and long-lasting changes in emotion regulation.

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