Relations Among Self-Compassion, PTSD Symptoms, and Psychological Health in a Trauma-Exposed Sample

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Abstract Emerging literature on self-compassion suggests that establishing and maintaining a compassionate perspective toward oneself and one's experiences may help buffer against the negative effects of trauma exposure, such as psychopathology and reduced quality of life. The goal of the current study was to examine relations among self-compassion, post-traumatic stress disorder (PTSD) symptom severity, and overall psychological health in a sample of trauma-exposed university students. Further, the current study explored these associations while controlling for a theoretically related construct, psychological inflexibility. Participants were 453 undergraduate students enrolled in an introductory psychology course at a large Midwestern University (Mage = 19.75, SD = 3.07). A structural equation model (SEM) approach was used. Results indicated that a two-factor solution for the Self-Compassion Scale defined by subscale valence (i.e., positive and negative components) demonstrated improved fit over a single-factor model. The overall model demonstrated good fit: comparative fit index (CFI) = 0.96, Tucker-Lewis index (TLI) = 0.93, root-mean-square residual (RMSEA) = 0.08 (90% confidence interval (CI) 0.07 to 0.09). The two observed factors of self-compassion emerged as strong predictors of variation in overall psychological health, even in the context of PTSD symptoms and psychological inflexibility. Additionally, the two self-compassion factors accounted for significant variance in psychological inflexibility, but not PTSD symptoms. Results demonstrate that increasing levels of self-compassion may represent an important area of intervention for trauma-exposed individuals.

Keywords Self-compassion · Trauma · PTSD · Psychological inflexibility · Well-being · Psychological health

Introduction

Exposure to traumatic experiences has repeatedly been associated with poorer life satisfaction, decreased well-being, and reduced quality of life (Affifi et al. 2007; Anda et al. 2006; Herrenkohl et al. 2012; Royse et al. 1991). In addition, a subset of individuals exposed to trauma (approximately 8% of the general population; Kessler et al. 1995) develop post-traumatic stress disorder (PTSD). Symptoms of PTSD (i.e., intrusive re-experiencing of trauma-related memories, avoidance of trauma-related stimuli, and hyperarousal; American Psychiatric Association 2000) have been consistently linked to lower quality of life and poorer psychological functioning (Clark and Kürisc 1996; Doctor et al. 2011; Goej킨 et al. 2011; Warshaw et al. 1993). Therefore, it is worthwhile to examine additional factors that may contribute to psychological health in trauma-exposed individuals, in addition to further exploring its relation with PTSD symptoms.

When considering the relation between PTSD symptoms and psychological health, it is important to note that while reduced symptoms of PTSD have been shown to engender positive changes in quality of life (e.g., Taylor et al. 2006), this relation may be bidirectional (Giacco et al. 2013). More specifically, Giacco et al. (2013) found that a reduction of PTSD symptoms was associated with improved quality of life over time and that improvements in quality of life were associated with reduced PTSD symptoms in a war-exposed sample. Despite these findings, reduced symptomatology and increased quality of life do not always go hand in hand (e.g., Schnurr et al. 2003). For example, some individuals may have reduced PTSD symptoms following treatment, yet continue to experience disruptions in quality of life (e.g., low life...
satisfaction or relationship difficulties). Therefore, exploring factors that may increase individuals’ life satisfaction and subjective well-being, in addition to symptom reduction, is worthwhile. Such an approach is in line with the Recovery Model of mental health care (see Charney and Marx 2012), which aims to address the psychological as well as psychosocial needs of individuals through the use of psychosocial rehabilitation services (e.g., supported employment, self-care skills training). One factor that has been consistently linked to improved quality of life and reduced psychopathology, self-compassion, has been proposed as a potentially adaptive method of relating to oneself and one’s experiences following exposure to difficulties and hardship (Barnard and Curry 2011; Neff and McGhee 2010). That is, establishing and maintaining a compassionate perspective may help buffer against the negative effects of trauma exposure, as well as provide an effective therapeutic target for those seeking treatment for PTSD symptoms.

As articulated by Neff (2003a), self-compassion is a way of kindly and nonjudgmentally relating to oneself and one’s emotional experiences. Neff (2003a) described self-compassion as a single-factor construct consisting of six unique but interacting components: self-kindness versus self-judgment, common humanity versus isolation, and mindfulness versus overidentification. Self-kindness is considered the tendency to be warm and understanding toward oneself rather than judgmental or self-critical. Common humanity involves viewing one’s suffering as part of the general human experience rather than viewing one’s experiences as separate or isolated from the experiences of others. Mindfulness consists of taking an open and accepting stance toward internal experiences and is contrasted with a tendency to fixate on and overidentify with negative experiences. Through their interaction, these components are thought to combine and amplify one another (Neff 2003a). For example, one may become more kind toward themselves once they realize that other people suffer in the same ways that they do.

Research on self-compassion has demonstrated consistent associations with greater well-being, life satisfaction, and feelings of social connectedness (Barnard and Curry 2011; Neely et al. 2009; Neff et al. 2005, 2007; Neff and Vonk 2009). Self-compassion also appears to promote resilience and may serve as a protective factor against the development of psychopathology (Cohn et al. 2009; MacBeth and Gumley 2012). Although research has suggested that self-compassion is associated with greater well-being, less is known about whether this relation remains significant in the context of PTSD symptoms.

In addition to the relation between self-compassion and overall well-being, researchers have recently begun exploring self-compassion in relation to PTSD symptoms. In one of the only studies that has reported on this relation, Thompson and Waltz (2008) examined PTSD symptom clusters and self-compassion in a sample of 210 undergraduate students. They found that self-compassion was significantly related to PTSD and that it was negatively correlated with avoidance strategies (Thompson and Waltz 2008). Given that PTSD symptoms appear to be related to one’s level of self-compassion, it is important to determine how these variables are related to overall well-being. In addition, it is of interest to examine whether self-compassion is significantly related to well-being in the context of related phenomena, such as psychological inflexibility (the tendency to be self-judgmental, to avoid internal experiences, and to give more power to psychological reactions than to values or meaningful activities; Bond et al. 2011). Although the term “experiential avoidance” has previously been used to describe this phenomena, psychological inflexibility is a broader term that is more consistent with the theoretical model underlying Acceptance and Commitment Therapy (Bond et al. 2011; Hayes et al. 1999). Psychological inflexibility tends to be maladaptive, has been linked to lower quality of life, and has been implicated in the onset and maintenance of PTSD (Hayes et al. 2004; Fledderus et al. 2010; Kashdan et al. 2006; Kumpula et al. 2011; Marx and Sloan 2005).

Given that self-compassion has been described as a non-judgmental openness to internal experiences (Neff 2003a) and that self-compassionate individuals are less likely to suppress unwanted thoughts and emotions (Leary et al. 2007), one would expect a negative association between self-compassion and psychological inflexibility. However, research in this area is emerging, and conclusions remain speculative. For example, Woodruff et al. (2013) found that, while self-compassion and psychological inflexibility accounted for similar unique variance in positive outcomes, psychological inflexibility generally out-predicted self-compassion in terms of negative outcomes (e.g., anxiety, negative affect). In contrast, Costa and Pinto-Gouveia (2013) found that self-compassion scores did not significantly predict depression when psychological inflexibility was included as a predictor. Thus, because psychological inflexibility and self-compassion appear related to one another, as well as to PTSD symptoms and well-being, it is pertinent to examine whether self-compassion makes an independent contribution to variance in well-being, beyond that of PTSD symptoms and psychological inflexibility.

The goal of the current study was to examine relations among self-compassion, PTSD symptoms, and overall psychological health in a sample of trauma-exposed young adults. We anticipated that self-compassion would be negatively associated with PTSD symptoms and positively associated with overall psychological health. Conversely, we expected that psychological inflexibility would be positively associated with PTSD symptoms and negatively associated with overall psychological health. Given the mixed findings in the literature regarding self-compassion and psychological...
inflexibility, the current study did not include specific predictions about whether self-compassion would contribute significant variance in PTSD symptoms and overall psychological health after controlling for psychological inflexibility.

Method

Participants

Data were obtained from a pool of 604 undergraduate students enrolled in an introductory psychology course at a large Midwestern university. To be included in the current study, participants were required to be at least 18 years of age, fluent in English, and to have endorsed at least one prior criterion A traumatic event (APA 2000). The resulting sample for the current study was 453 (65.7% female). The mean age of participants was 19.75 years old (SD=3.07). Regarding racial background, 60.7% of participants identified as White, 21.9% as Black, 7.3% as Other, 5.1% as Asian or South Asian, 0.9% as Native Hawaiian or Pacific Islander, and 0.9% as American Indian or Alaskan Native; 3.3% chose not to respond. With regard to ethnicity, 10.6% of participants endorsed a separate item self-identifying as Hispanic/Latino/a.

Procedure

The current study was approved by the university’s Institutional Review Board. All participants were recruited through a computerized enrollment system and asked to respond to several questionnaires. Participants then received partial course credit for their participation.

Measures

Traumatic Life Events Questionnaire The Traumatic Life Events Questionnaire (TLEQ; Kubany et al. 2000) is a brief measure of trauma exposure that has demonstrated good psychometric properties in prior research (Kubany 2004). Respondents indicate the frequency of experiencing 22 potentially traumatic events (e.g., physical abuse, sexual assault, natural disaster). The TLEQ was used in the present study as an initial trauma history screening. Individuals who reported experiencing at least one criterion A traumatic event (APA 2000) in their lifetime were asked to provide additional information regarding potential PTSD symptoms.

PTSD Screening and Diagnostic Scale The PTSD Screening and Diagnostic Scale (PSDS; Kubany et al. 2000) is a self-report measure of 17 PTSD symptoms according to DSM-IV-TR criteria (APA 2000). These 17 symptoms map onto the three DSM-IV symptom clusters of PTSD: re-experiencing (cluster B), avoidance/numbing (cluster C), and hyperarousal (cluster D). Example items include “Unwanted thoughts or mental pictures of the event(s) when nothing was happening to remind you?” and “Feeling detached or cut off from others around you.” Responses are given on a Likert-type scale from 0=absent or did not occur to 4=present to an extreme or severe degree, with higher scores indicating greater PTSD symptoms. The PSDS has demonstrated strong psychometric properties (Kubany et al. 2000). Cronbach’s alpha in the current sample was 0.94 for the total scale. Alpha’s for the re-experiencing, avoidance/numbing, and hyperarousal symptom clusters were 0.89, 0.87, and 0.87, respectively. Using a recommended cutoff of 18 for the PSDS total score, 36% of the current sample met criteria for probable PTSD (Kubany et al. 2000).

Self-Compassion Scale The Self-Compassion Scale (SCS; Neff 2003b) is a 26-item self-report measure of the degree to which individuals exhibit a kind and accepting attitude toward themselves. Subscales of the SCS include the following: self-kindness (e.g., “I try to be loving towards myself when I’m feeling emotional pain”), self-judgment (e.g., “When times are really difficult, I tend to be tough on myself”), isolation (e.g., “When I fail at something that’s important to me I tend to feel alone in my failure”), common humanity (e.g., “When I feel inadequate in some way, I try to remind myself that feelings of inadequacy are shared by most people”), mindfulness (e.g., “When something upsets me I try to keep my emotions in balance”), and overidentification (e.g., “When I’m feeling down I tend to obsess and fixate on everything that’s wrong”). Responses are given on a Likert-type scale from 1=almost never to 5=almost always, with higher scores indicating greater self-compassion. The SCS has demonstrated good internal consistency (α=0.92), as well as good test-retest reliability (α=0.93; Neff 2003b) over a 3-week interval. Cronbach’s alpha in the current sample was 0.92 for the total scale. For subscales of the SCS, Cronbach’s alphas were as follows: 0.81 (self-kindness), 0.86 (self-judgment), 0.83 (isolation), 0.82 (common humanity), 0.78 (mindfulness), and 0.82 (overidentification).

Acceptance and Action Questionnaire-II The Acceptance and Action Questionnaire-II (AAQ-II; Bond et al. 2011) is a 7-item self-report measure of psychological inflexibility. Example items include “My painful memories prevent me from having a fulfilling life” and “Worries get in the way of my success.” Responses are given on a Likert-type scale from 1=never true to 7=always true, with higher scores indicating greater psychological inflexibility. The AAQ-II has demonstrated strong internal consistency, test-retest reliability, and validity (Bond et al. 2011). AAQ-II total scores were used in the present analyses; Cronbach’s alpha in the current sample was 0.94.
Rand Health Quality of Life The Rand Health Quality of Life scale (SF-12; Ware et al. 1996) is a 12-item self-report measure of overall physical and mental health. The Mental Component Summary of the SF-12 (7 items; SF12-MCS) was used in the current study. Example items include “In general, would you say your health is:” (responses range from 1=poor to 5=excellent) and “How much of the time during the past 4 weeks have you felt downhearted and blue?” (responses range from 1=all of the time to 5=none of the time). In the current study, items were coded such that higher scores indicate greater mental health. Cronbach’s alpha was 0.55.

Subjective Happiness Scale The Subjective Happiness Scale (SHS; Lyubomirsky and Lepper 1999) is a 4-item self-report measure of the degree to which individuals feel happy in their lives. Example items include “Compared to most of my peers, I consider myself:” (responses range from 1=not a very happy person to 7=a very happy person) and “Some people are generally very happy. They enjoy life regardless of what is going on, getting the most out of everything. To what extent does this characterization describe you?” (responses range from 1=not at all to 7=a great deal). SHS total scores were used in the present analyses, and Cronbach’s alpha was 0.85.

Short Warwick-Edinburgh Mental Well-Being Scale The Short Warwick-Edinburgh Mental Well-Being Scale (WBS; Stewart-Brown et al. 2009; Tennant et al. 2007) is a 7-item self-report measure of overall well-being. Example items include “I’ve been feeling optimistic about the future” and “I’ve been dealing with problems well.” Responses are given on a Likert-type scale from 1=none of the time to 5=all of the time, with higher scores indicating greater well-being. WBS total scores were used, and Cronbach’s alpha in the current study was 0.88.

Data Analyses
All data were first screened for quality (i.e., responses within range). The multivariate normality assumption was tested by ensuring that all variables were normally distributed (i.e., checking skewness and kurtosis). No variables were found to be outside of the recommended range for skewness or kurtosis, given a sample size greater than 200 (range=−2 to 2). Second, the absence of outliers assumption was tested by screening for outliers in the data (i.e., checking ranges and leverage indices). No significant outliers were found. Additionally, all bivariate correlations were inspected and found to be in the expected directions.

A structural equation model (SEM) approach was used with SPSS Amos Version 21 (IBM SPSS AMOS 2012). The three DSM-IV symptom clusters for PTSD (B, re-experiencing; C, avoidance/numbing; and D, hyperarousal) were each modeled as manifest indicators of a latent factor for PTSD symptoms. For self-compassion, all six subscales of the SCS (i.e., self-kindness, self-judgment, common humanity, isolation, mindfulness, and overidentification) were used as manifest indicators. Three manifest indicators of overall psychological health were used: the SF12-MCS, the SHS, and the WBS. For psychological inflexibility, all seven items from the AAQ-II were first tested in a measurement model and found to adequately demonstrate a one-factor solution. Therefore, it was subsequently parcelled into three observed variables (item parceling is an atheoretical technique in which a measure is broken up into a smaller number of groups, or parcels, by combining two or more individual items; Bandolos 2008; Sass and Smith 2006). Parcel 1 included AAQ-II items 5 and 7, parcel 2 included items 1 and 2, and parcel 3 included items 3, 4, and 6 (items in each parcel were determined via random number generator). A maximum likelihood estimation model was used with the following fit indices: comparative fit index (CFI), Tucker-Lewis index (TLI), and root-mean-square residual (RMSEA; Browne and Cudeck 1992; Hu and Bentler 1999). Given that there were more unknown than parameters, the model was overidentified. A nonsignificant Chi-square test was not required because a large sample size is likely to produce a significant Chi-square regardless of model fit.

Results
See Table 1 for descriptive statistics and bivariate correlations. All study variables were significantly correlated with one another in expected directions.

A measurement model was first estimated in order to examine the fit for each latent factor (for parsimony, one correlated model was used). In terms of PTSD symptoms, variables for symptom clusters B, C, and D loaded highly (0.81, 0.95, and 0.81, respectively). In terms of overall psychological health, the WBS, SHS, and SF12-MCS all loaded well (0.81, 0.81, and 0.70, respectively). In terms of psychological inflexibility, all three parcels loaded highly (0.86, 0.88, and 0.97). In terms of self-compassion, three subscales had factor loadings that were less than 0.40: self-kindness, common humanity, and mindfulness. Given that these subscales are thought to represent counterparts to self-judgment, isolation, and overidentification (Neff 2003a), separate analyses were conducted in order to compare a correlated two-factor model to the one-factor model, as well as to a six-factor model, which has also been previously examined in the literature (Neff 2003b; Williams et al. 2014). The first factor, called positive self-compassion components (PSC), consisted of self-kindness, common humanity, and mindfulness. The second factor, called negative self-compassion components (NSC), consisted of self-judgment, isolation, and overidentification. Traditionally, these three subscales are reverse coded.
Table 1  Descriptive statistics and bivariate correlations for all study variables

<table>
<thead>
<tr>
<th></th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
<th>8</th>
<th>9</th>
<th>M (SD)</th>
<th>Range</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>SCS total</td>
<td>–</td>
<td>–</td>
<td>–</td>
<td>–</td>
<td>–</td>
<td>–</td>
<td>–</td>
<td>–</td>
<td>79.61</td>
<td>(16.99)</td>
</tr>
<tr>
<td>2.</td>
<td>PSC factor</td>
<td>0.73**</td>
<td>–</td>
<td>–</td>
<td>–</td>
<td>–</td>
<td>–</td>
<td>–</td>
<td>–</td>
<td>39.69</td>
<td>(9.59)</td>
</tr>
<tr>
<td>3.</td>
<td>NSC factor</td>
<td>0.84**</td>
<td>0.23**</td>
<td>–</td>
<td>–</td>
<td>–</td>
<td>–</td>
<td>–</td>
<td>–</td>
<td>39.87</td>
<td>(11.98)</td>
</tr>
<tr>
<td>4.</td>
<td>SF12-MCS</td>
<td>0.44**</td>
<td>0.20**</td>
<td>0.46**</td>
<td>–</td>
<td>–</td>
<td>–</td>
<td>–</td>
<td>–</td>
<td>57.33</td>
<td>(16.73)</td>
</tr>
<tr>
<td>5.</td>
<td>SHS</td>
<td>0.54**</td>
<td>0.38**</td>
<td>0.47**</td>
<td>0.54**</td>
<td>–</td>
<td>–</td>
<td>–</td>
<td>–</td>
<td>20.56</td>
<td>(5.09)</td>
</tr>
<tr>
<td>6.</td>
<td>WBS</td>
<td>0.53**</td>
<td>0.38**</td>
<td>0.45**</td>
<td>0.56**</td>
<td>0.67**</td>
<td>–</td>
<td>–</td>
<td>–</td>
<td>24.86</td>
<td>(5.24)</td>
</tr>
<tr>
<td>7.</td>
<td>AAQ-II</td>
<td>–0.63**</td>
<td>–0.21**</td>
<td>–0.72**</td>
<td>–0.52**</td>
<td>–0.55**</td>
<td>–0.55**</td>
<td>–</td>
<td>–</td>
<td>20.95</td>
<td>(9.96)</td>
</tr>
<tr>
<td>8.</td>
<td>PSDS-B</td>
<td>–0.25**</td>
<td>–0.08</td>
<td>–0.28**</td>
<td>–0.22**</td>
<td>–0.25**</td>
<td>–0.20**</td>
<td>0.43**</td>
<td>–</td>
<td>4.47</td>
<td>(4.62)</td>
</tr>
<tr>
<td>9.</td>
<td>PSDS-C</td>
<td>0.36**</td>
<td>–0.17**</td>
<td>–0.38**</td>
<td>–0.31**</td>
<td>–0.37**</td>
<td>–0.32**</td>
<td>0.52**</td>
<td>0.77**</td>
<td>5.72</td>
<td>(5.98)</td>
</tr>
<tr>
<td>10.</td>
<td>PSDS-D</td>
<td>–0.34**</td>
<td>–0.11**</td>
<td>–0.39**</td>
<td>–0.34**</td>
<td>–0.37**</td>
<td>–0.33**</td>
<td>0.51**</td>
<td>0.65**</td>
<td>4.56</td>
<td>(4.84)</td>
</tr>
</tbody>
</table>

SCS self-compassion scale, PSC positive self-compassion components, NSC negative self-compassion components, SF12-MCS Rand Health Quality of Life Scale-Mental Component Summary, SHS Subjective Happiness Scale, WBS Short Warwick-Edinburgh Mental Well-Being Scale, AAQ-II Acceptance and Action Questionnaire-II, PSDS PTSD Screening and Diagnostic Scale, PSDS-B re-experiencing cluster, PSDS-C avoidance/numbing cluster, PSDS-D hyperarousal cluster

*p<0.05  
**p<0.01

in order to obtain a total score that indicates one’s level of overall self-compassion; however, given the separation of these subscales from the others, items were not reverse coded, such that greater scores indicate higher levels of the NSC factor. The two-factor model fit the data reasonably well (CFI=0.95, TLI=0.87, RMSEA=0.15 [90% confidence interval (CI) 0.12 to 0.18]) and demonstrated a significant improvement in fit over the one- and six-factor solutions. For a summary of these models, see Table 2. To test the generalizability of this solution, the correlated two-factor model was also evaluated in a sample of individuals without trauma exposure (N=151; 25% of the original participant pool of 604). In the no-trauma sample, the correlated two-factor model fit the data well (CFI=0.99, TLI=0.96, RMSEA=0.09 [90% CI 0.02 to 0.14]).

The structural model (Fig. 1) with the two-factor SCS components was a good fit to the data: CFI=0.96, TLI=0.94, RMSEA=0.07 (90% CI 0.06 to 0.08). The PSC factor of self-compassion was significantly related to overall psychological health, even in the context of PTSD symptoms. Further, this relationship was significant after controlling for psychological inflexibility. PTSD symptoms did not account for significant variance in overall psychological health beyond that explained by the self-compassion factors and psychological inflexibility. The self-compassion factors did not account for significant variance in PTSD symptoms after controlling for psychological inflexibility. Additionally, the relations between the two self-compassion factors and psychological inflexibility were significant, with the relation between psychological inflexibility and the NSC factor being much greater than that of psychological inflexibility and the PSC factor.

Discussion

The primary goal of the current study was to examine the relations among self-compassion, PTSD symptoms, and overall psychological health in a sample of individuals with diverse forms of trauma exposure. As expected, self-compassion and overall psychological health were strongly related at the zero-order level and moderately related in the structural model. In contrast to prior research (Thompson and Waltz 2008), self-compassion did not evidence a significant negative relation with PTSD symptomatology in the structural model, though they were significantly related at the bivariate level. This may be partially explained by the inclusion of psychological inflexibility. Specifically, Thompson and Waltz (2008) found that self-compassion scores were associated with the avoidance/numbing cluster of PTSD, but not with the hyperarousal or re-experiencing clusters. Therefore, it may be the case that self-compassion does not account for additional variance in PTSD symptoms beyond that explained by the tendency to avoid negative internal experiences. Findings related to overall psychological health support existing evidence in the literature suggesting that self-compassion is an important construct related to psychological health and well-being (Barnard and Curry 2011; Neely et al. 2009; Neff et al. 2005, 2007; Neff and Vonk 2009). Increasing levels of self-compassion may contribute to greater life satisfaction and subjective well-being for trauma survivors, a treatment aim consistent with the Recovery Model of mental healthcare (e.g., Charney and Marx 2012).

The finding that PTSD symptoms were not significantly related to overall psychological health is not consistent with previous research that demonstrated a strong relation between
Table 2  Factor loadings and fit indices for Self-Compassion Scale models

<table>
<thead>
<tr>
<th></th>
<th>Self-kindness</th>
<th>Common humanity</th>
<th>Mindfulness</th>
<th>Self-judgment</th>
<th>Isolation</th>
<th>Overidentified</th>
</tr>
</thead>
<tbody>
<tr>
<td>SCS one-factor model loadings</td>
<td>0.34**</td>
<td>0.11*</td>
<td>0.26**</td>
<td>0.88**</td>
<td>0.88**</td>
<td>0.88**</td>
</tr>
<tr>
<td>SCS two-factor model loadings</td>
<td></td>
<td></td>
<td></td>
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<td></td>
<td></td>
</tr>
<tr>
<td>Factor 1</td>
<td>0.81**</td>
<td>0.68**</td>
<td>0.87**</td>
<td>–</td>
<td>–</td>
<td>–</td>
</tr>
<tr>
<td>Factor 2</td>
<td>–</td>
<td>–</td>
<td>–</td>
<td>0.88**</td>
<td>0.88**</td>
<td>0.88**</td>
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<tr>
<td>Fit indices</td>
<td>CFI</td>
<td>TLI</td>
<td>RMSEA</td>
<td>90 % CI</td>
<td></td>
<td></td>
</tr>
<tr>
<td>SCS one-factor model</td>
<td>0.64</td>
<td>0.15</td>
<td>0.37</td>
<td>0.35–0.40</td>
<td></td>
<td></td>
</tr>
<tr>
<td>SCS two-factor model</td>
<td>0.95</td>
<td>0.87</td>
<td>0.15</td>
<td>0.12–0.18</td>
<td></td>
<td></td>
</tr>
<tr>
<td>SCS six-factor model</td>
<td>0.90</td>
<td>0.88</td>
<td>0.07</td>
<td>0.06–0.07</td>
<td></td>
<td></td>
</tr>
<tr>
<td>One-factor vs two-factor</td>
<td>$\Delta \chi^2$ (1) = 486.30, $p &lt; 0.001$</td>
<td></td>
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<tr>
<td>Six-factor vs two-factor</td>
<td>$\Delta \chi^2$ (276) = 763.467, $p &lt; 0.001$</td>
<td></td>
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</tr>
</tbody>
</table>

SCS self-compassion scale, CFI comparative fit index, TLI Tucker-Lewis index, RMSEA root-mean-square error of approximation, CI confidence interval

*p < 0.05
**p < 0.01

quality of life and PTSD symptoms (Giacco et al. 2013). However, this may be partially explained by the inclusion of self-compassion in the current study, such that self-compassion could serve as a potential protective factor
following trauma exposure. Additional research is needed to further explore these relations.

Regarding a second aim of this study, our findings related to overall psychological health were significant even after for controlling for the construct of psychological inflexibility, which has demonstrated significant relations with psychological health and PTSD symptoms in prior research (e.g., Hayes et al. 2004; Marx and Sloan 2005). Since self-compassion and psychological inflexibility appear to be theoretically related, it is not surprising that both factors of self-compassion were significantly associated with psychological inflexibility. Further, both self-compassion factors contributed unique variance in overall psychological health beyond that explained by psychological inflexibility. In line with hypotheses, psychological inflexibility also emerged as a significant predictor of variation in overall psychological health and PTSD symptoms in the present model. Overall, results may indicate that one’s nonjudgmental acceptance of himself or herself may be just as important as one’s willingness to be in contact with internal experiences, such as thoughts and emotions. For example, in a population exposed to traumatic experiences, an individual may be more likely to have better psychological health if they are accepting and kind toward themselves and their experiences, regardless of what thoughts or emotions they have. This acceptance and kindness may also play an important role in maintaining willingness to experience distressing thoughts and emotions.

Research Implications

Findings of this study suggest the potential presence of a two-factor model of self-compassion. This is in contrast to the conceptualization and initial factor analysis conducted by Neff (2003a, b), where self-compassion appeared to be an overarching factor emerging out of the combination of six subscale components (i.e., self-kindness, self-judgment, common humanity, isolation, mindfulness, and overidentification) using two undergraduate samples. The present study utilized a trauma-exposed student sample, though participants were not selected on the basis of pathology (i.e., clinically significant levels of PTSD symptoms), and similar factor structure was observed in the no-trauma sample. In line with the present findings, Williams et al. (2014) recently examined the factor structure of the SCS in three adult samples (i.e., unspecified, meditator, and clinical) and did not find support for one- or six-factor structures. Neither Neff (2003b) nor Williams et al. (2014) tested a two-factor solution collapsed across valence. Given promising results observed for both the trauma and non-trauma samples in the present study, further research utilizing the SCS may benefit from utilizing the two-factor solution.

Interestingly, the structural model from the current study suggests that the NSC factor is more strongly related to psychological inflexibility than the PSC factor. This may indicate that the NSC factor of the SCS is assessing a construct similar to psychological inflexibility. Conversely, this finding could also be an artifact of scoring direction. As such, further examination of these variables is warranted in order to help determine if the NSC factor observed in the present study is truly unique from psychological inflexibility.

Clinical Implications

While the two self-compassion factors assessed did not demonstrate a direct association with PTSD symptoms in the structural model, results from the bivariate correlations suggest that individuals exposed to traumatic events may benefit from interventions that incorporate self-compassion. Although no empirically supported treatment has been developed to increase self-compassion in trauma survivors specifically, Gilbert (2009, 2010) and Neff and Germer (2013) have designed therapeutic protocols to teach and increase self-compassion skills in both clinical and nonclinical populations (Compassion-Focused Therapy and the Mindful Self-Compassion program, respectively). Results of the current study may provide support for the use of these protocols in trauma-exposed samples. However, it is important to note that psychological inflexibility may be a more primary target for these interventions, given that it was strongly related to PTSD symptoms in the structural model of the current study. Indeed, research suggests that interventions aimed at lowering psychological inflexibility may be quite beneficial for individuals with symptoms of PTSD (King et al. 2013; Lang et al. 2012; Orsillo and Batten 2005). An additional clinical implication of the present results relates to the observed associations between the two self-compassion factors and overall psychological health. As previously mentioned, research has demonstrated that higher levels of self-compassion are related to greater health and well-being (e.g., Barnard and Curry 2011; Neff et al. 2007, 2009). Therefore, results of the current study may provide support for the use of self-compassion training to increase overall life satisfaction and well-being.

Limitations

There are some important limitations to the current study. First, the study sample consisted of primarily White undergraduate students, which decreases generalizability to other populations. Future research that tests relations among the present variables in more diverse samples (e.g., nonstudents, older adults, different racial/ethnic backgrounds) is needed. A second limitation of the current study is that the data were cross-sectional. Therefore, causality cannot be implied from the results of the SEM model. Future research ought to address the causal relationships among self-compassion, psychological inflexibility, PTSD symptoms, and overall psychological health in longitudinal studies. Given the importance of developmental transitions and their interactive relationship with psychopathology, prospective research is needed in order to
determine the nature of these relationships across different developmental periods and prior to the onset of certain stressors, such as college. Third, the SF12-MCS demonstrated fairly low internal consistency in the current study (α=0.55). While it is possible that low internal consistency is due to the SF12-MCS having only seven items, results should still be interpreted with this low reliability in mind. Fourth, the current study included trauma-exposed individuals with varying symptom levels of PTSD. Therefore, future research may benefit from examining the relations among self-compassion, PTSD symptoms, and psychological health in individuals who meet diagnostic criteria for PTSD. Finally, the present study relied exclusively on self-report data. In order to more accurately determine the presence of psychopathology, clinician-administered assessments are needed. For example, the current study found that 36% of participants met criteria for probable PTSD; however, this number may be inflated given the self-report nature of the PSDS. Future research may gain a more accurate estimate of psychopathology by using a clinical interview of PTSD symptoms.

References


