Adaptive emotion regulation mediates the relationship between self-compassion and depression in individuals with unipolar depression

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Objectives. To identify the mechanisms involved in the association between self-compassion and depression, we examined whether adaptive emotion regulation would mediate the relationship between self-compassion and depression in individuals with unipolar depression. Furthermore, we explored which specific emotion regulation skills would be most important in this relationship.

Design and method. Sixty-nine individuals with unipolar depression were assessed with the Self-Compassion Scale and the Emotion Regulation Skills Questionnaire at baseline and with the Beck Depression Inventory-II 1 week later.

Results. The results showed that successful application of emotion regulation skills mediates the association between self-compassion and depression. Among eight specific emotion regulation skills, only the ability to tolerate negative emotions was identified as a significant mediator in the self-compassion–depression relationship.

Conclusions. These findings provide preliminary evidence that systematically fostering self-compassion might help depressed individuals cope with their symptoms by enhancing their abilities to tolerate undesired emotions.

Practitioner points

- Systematically fostering self-compassion through specific compassion-focused interventions might facilitate a reduction in depressive symptoms by improving the person’s emotion regulation abilities, especially by improving his or her ability to tolerate negative emotions.
- Hence, compassion-focused interventions might be particularly promising in depressed patients with a tendency to avoid negative emotions and deficits in tolerating them.

Unipolar depression is a pervasive mental health problem (Scott & Dickey, 2003) that is associated with a significant morbidity, mortality, disability, and emotional anguish for patients and their families (Lépine & Briley, 2011; Scott & Dickey, 2003; Üstün, Ayuso...
Mateos, Chatterji, Mathers, & Murray, 2004). Recently, the use of self-compassion has been proposed as an effective self-help strategy for coping with depression (e.g., Diedrich, Grant, Hofmann, Hiller, & Berking, 2014; Krieger, Altenstein, Baettig, Doerig, & Holtforth, 2013). Compassion and self-compassion have been conceptualized from a variety of perspectives. According to Neff (2003), self-compassion is composed of the following elements: (1) self-kindness (vs. self-judgement), which involves the ability to treat oneself with care and understanding as opposed to harsh self-judgement; (2) common humanity (vs. isolation), which reflects the recognition that imperfection, failures, and emotional pain are a shared aspect of the human experience as opposed to viewing them as separating and isolating; and (3) mindfulness (vs. overidentification), which involves holding and accepting one’s present-moment experience as opposed to becoming too involved in the experience. In contrast, Gilbert (2014) defines compassion in a Buddhist informed way as ‘a sensitivity to suffering in self and others, with a commitment to try to alleviate and prevent it’ (p. 19). Thus, Gilbert’s (2014) conceptualization of compassion does not only include a friendly awareness and sympathetic concern related to suffering like Neff’s (2003) definition but also the motivation and intention to relieve it by actively supporting oneself. Finally, Weissman and Weissman (1996) perceive self-compassion as ‘a strong and warm feeling of empathy towards oneself in distress that is associated with the desire to help oneself’. When compared with Neff’s and Gilbert’s definitions, this conceptualization does at least not explicitly include mindfulness or common humanity as integral components.

Empirical evidence for the presumable relevance of self-compassion in depression originates from a vast number of studies. For example, self-compassion has been found to be negatively associated with depression (both concurrently and prospectively) in non-clinical samples, in individuals at risk for anxiety and depression, and in currently depressed individuals (Gilbert, Baldwin, Irons, Baccus, & Palmer, 2006; Krieger, Berger, & Grosse Holtforth, 2016; Krieger et al., 2013; MacBeth & Gumley, 2012; Neff, 2003; Neff, Kirkpatrick, & Rude, 2007; Neff & McGehee, 2010; Neff, Pisitsungkagarn, & Hsieh, 2008; Neff, Rude, & Kirkpatrick, 2007; Raes, 2010, 2011; Van Dam, Sheppard, Forsyth, & Earleywine, 2011). With regard to the direction of the self-compassion–depression relationship, it has been demonstrated that self-compassion leads to a reduction of depressive symptoms and a decrease in MDD diagnoses, but not vice versa (Krieger et al., 2016). Moreover, findings of an experimental study have shown that self-compassion instructions cause a decrease in experimentally induced depressed mood when compared to a waiting condition (Diedrich et al., 2014), and results of an intervention study in depressed patients in partial or full remission suggest favourable effects of a change in self-compassion for changing depressive symptoms (Kuyken et al., 2010). Finally, compassion-focused therapy (Gilbert, 2010) and the mindful self-compassion programme (Neff & Germer, 2013), which both focus on enhancing self-compassion, have been shown to reduce depression in healthy and clinical populations (Brachler et al., 2013; Gilbert & Procter, 2006; Laithwaite et al., 2009; Lucre & Corten, 2013; Mayhew & Gilbert, 2008; Neff & Germer, 2013).

Although the literature provides considerable evidence for the significance of self-compassion in the context of depression, less is known regarding potential mediators involved in this association. To date, only rumination (brooding) has been identified as a significant mediator in a non-clinical sample (Raes, 2010), and symptom-focused rumination, as well as cognitive and behavioural avoidance in a depressed sample (Krieger et al., 2013). An additional likely mediator in the association between self-compassion and depression is emotion regulation (ER;
ER refers to ‘extrinsic and intrinsic processes responsible for monitoring, evaluating, and modifying emotional reactions, especially their intensive and temporal features, to accomplish one’s goals’ (Thompson, 1994, pp. 27–28). The ability to successfully regulate negative emotions has been found to be negatively associated with depressive symptoms in cross-sectional (Berking, Orth, Wupperman, Meier, & Caspar, 2008), longitudinal (Berking, Wirtz, Svaldi, & Hofmann, 2014; Radkovsky, McArdle, Bockting, & Berking, 2014), and experimental (Ehring, Tuschen-Caffier, Schnüll, Fischer, & Gross, 2010; Liverant, Brown, Barlow, & Roemer, 2008) studies. With regard to the direction of the ER–depression relationship, it has been demonstrated that ER abilities lead to a reduction of depressive symptoms, and not vice versa (Radkovsky et al., 2014), potentially because ER abilities help maintain a sense of control in distressing situations (Berking & Schwarz, 2013; Berking & Whitley, 2014; Teasdale & Barnard, 1993). However, depressed individuals often display deficits in ER (Ehring, Fischer, Schnüll, Bösterling, & Tuschen-Caffier, 2008; Joormann, Siemer, & Gotlib, 2007; Rude & McCarthy, 2003) and in cognitive processes involved (e.g., Beck, 2002; Flett, Hewitt, & Mittelstaedt, 1991). As they are also likely to interpret (ER) failures as further evidence for their personal deficiency (Blatt, Quinlan, Chevron, McDonald, & Zuroff, 1982; Blatt & Zuroff, 1992; Sturman & Mongrain, 2005), a vicious cycle of negative emotions, regulation failure, a self-critical response towards regulation failure, and the subsequent negative emotions may develop. This vicious cycle may then lead to an escalation of negative emotions to the extent that depressed individuals disengage from attempts to use adaptive ER skills and instead respond with impulsive behaviours that help reduce negative affect in the short term, but result in the maintenance of the disorder in the long term (Ferster, 1973; Hayes, Wilson, Gifford, Follette, & Strosahl, 1996; Ottenbreit & Dobson, 2004). Thus, Berking and colleagues (Berking, 2008; Berking & Schwarz, 2013; Berking & Whitley, 2014) have proposed to include the ability to compassionately support oneself in the process of adaptive ER. According to them, this may help maintain negative emotions in a manageable range and thereby facilitate the application of additional potentially effective ER skills. Consistent with this hypothesis, the findings from correlational, longitudinal, and experimental studies indicate that being self-compassionate when suffering might facilitate the usage of adaptive ER strategies such as cognitive reappraisal and acceptance and help improve their efficacy (Diedrich, Hofmann, Cuijpers, & Berking, 2016; Neff, Hsieh, & Dejitterat, 2005; Vettese, Dyer, Li, & Wekerle, 2011).

Therefore, the following can be established: (1) Self-compassion leads to the improvement of ER abilities, (2) adaptive ER precedes depressive symptom severity (but not vice versa), and (3) self-compassion reduces depression (but not vice versa). However, despite these findings, it remains unclear whether the habitual use of self-compassion helps depressed individuals cope with their depressive symptoms through increased ER abilities. Thus, the primary aim of our study was to investigate whether the association between self-compassion and depression is mediated by adaptive ER. We hypothesized that it is partially mediated by adaptive ER. Our secondary aim was to explore which specific ER skills are most important mediators in the relationship between self-compassion and depression.
Method

Participants and procedures

The participants were 69 clinically depressed individuals (44 women and 25 men; mean age 35.9 years, $SD = 12.0$) who had applied for treatment an outpatient department and were then enrolled in a study to evaluate the efficacy of Affect Regulation Training (Berking & Whitley, 2014) in individuals who suffer from a clinically relevant depression. To be included in the present study, the participants were required to fulfil the DSM-IV (APA, 1994) criteria of a current depressive or dysthymic disorder, be fluent in German, and be at least 18 years of age. Participants were excluded if they had a high risk of suicide, a substantial incentive for being diagnosed with a mental illness (e.g., in the course of an application for early retirement pensions), an organic brain disorder, a severe medical condition, or a severe cognitive impairment. To enhance the external validity of the study, we included patients who met criteria for comorbid disorders in addition to depression, with the exception of patients with a current diagnosis of substance abuse or dependence, psychotic disorder, or bipolar disorder. DSM-IV (APA, 1994) diagnoses for depressive, dysthymic as well as comorbid disorders were obtained using the German version of the Structured Clinical Interview for DSM-IV (SCID; Wittchen, Zaudig, & Fydrich, 1997), which was conducted by clinical psychologists who had at least a master’s degree. All psychologists were trained in conducting the SCID, and the diagnostic assessments were thoroughly discussed with an experienced supervisor (as they were therapists in clinical training). Sixty-four (92.6%) participants met criteria for major depressive disorder, three (4.3%) participants met criteria for dysthymic disorder, and two (2.9%) participants met criteria for depressive disorder not otherwise specified. Additionally, more than half of the patients (53.6%) met criteria for at least one comorbid diagnosis: 11.6% met criteria for panic disorder/agoraphobia and at least one personality disorder; 10.1% met criteria for a dysthymic disorder; 8.7% met criteria for social phobia and an eating disorder; 7.2% met criteria for obsessive-compulsive disorder; 5.8% met criteria for generalized anxiety disorder and somatoform disorder; 2.9% met criteria for post-traumatic stress disorder and sexual dysfunction disorder; and 1.4% met criteria for a specific phobia. Following the diagnostic assessment, the participants completed a diagnostic battery, which included self-report measures on self-compassion and ER skills. Depressive symptoms were assessed 1 week later, but prior to the beginning of the Affect Regulation Training. Written informed consent was obtained from all participants prior to the assessments, and ethical approval for the study was granted by the ethics committees of the universities where the project was conducted.

Measures

Self-compassion

The Self-Compassion Scale (SCS; Neff, 2003) measures the extent of self-compassionate attitudes when confronted with personal inadequacies, failures, and/or suffering. We used the German version of the SCS developed by Schmidt, Bartel, and Spottke (2013). Factor analyses of the translated English items resulted in a version with 34 items loading on the four factors of self-kindness (e.g., ‘I try to be loving towards myself when I am feeling emotional pain’), self-judgement (e.g., ‘When times are really difficult, I tend to be tough on myself’), 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’), and an aggregated
isolation/overidentification factor (e.g., ‘When I am feeling down, I tend to feel like most other people are probably happier than I am’; ‘When I fail at something important to me, I become consumed by feelings of inadequacy’) (Neff, 2003; Schmidt et al., 2013). Answers were measured on a 5-point scale (1 = ‘almost never’ to 5 = ‘almost always’). Subscale and total scores of the SCS were calculated as the means of the corresponding items. However, prior to averaging, the response values for each item of the self-judgement and isolation/overidentification scales were reversed. Thus, higher scores on all scales indicate a more self-compassionate attitude. The German version of the SCS (Schmidt et al., 2013) shows an item overlap of 18 items with the original scale (Neff, 2003), high internal consistencies for the SCS total score and subscales, and adequate construct validity (e.g., high [inverse] correlations with narcissism, well-being, and self-esteem measures as expected; Schmidt et al., 2013). Consistent with the findings by Schmidt et al. (2013), the internal consistencies in the present study varied from good to excellent (Table 1). Neff (2003) also reported good test–retest reliability for the original SCS, which ranges from $\alpha = .80$ for common humanity to $\alpha = .93$ for the overall score.

**Depressive symptoms**

The German version of the Beck Depression Inventory-II (BDI-II; Beck, Steer, & Brown, 1996; Kühner, Bürger, Keller, & Hautzinger, 2007) was used to measure the intensity of depressive symptoms for the last 2 weeks prior to assessment. The BDI-II consists of 21 items that refer to emotional, cognitive, and behavioural signs of clinically relevant depression. The items must be rated on a scale from 0 to 3. Based on the sum of all item ratings, a total score between 0 and 63 is obtained, and a higher score indicates more

<p>| Table 1. Means, standard deviations, range, and internal consistencies of the SCS, the ERSQ, and the BDI-II |
|---------|-------|-------|------|------|</p>
<table>
<thead>
<tr>
<th>Scale</th>
<th>M</th>
<th>SD</th>
<th>Range</th>
<th>$\alpha$</th>
</tr>
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<td>0.60</td>
<td>2.85</td>
<td>.94</td>
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<tr>
<td>Self-Kindness</td>
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<td>Isolation/Overidentification</td>
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<td>4.00</td>
<td>.91</td>
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<td>Modification</td>
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<td>0.62</td>
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<td>BDI-II</td>
<td>26.77</td>
<td>11.12</td>
<td>45.00</td>
<td>.90</td>
</tr>
</tbody>
</table>

*Note. $\alpha$, Cronbach’s alpha; M, mean; SD, standard deviation; SCS, Self-Compassion Scale; ERSQ<sub>total</sub>, Emotion Regulation Skills Questionnaire total score; BDI-II, Beck Depression Inventory-II. The self-support subscale was partialled out of the total score and its mean, standard deviation, and alpha score are not reported due to the subscale’s potential overlap with the SCS.*
intense depressive symptoms. The German version of the BDI-II exhibits a satisfactory internal consistency in both non-clinical and clinical samples, an acceptable retest reliability ($\alpha = .75$; derived from non-clinical samples), and high convergent and discriminant construct validity (Kühner et al., 2007). Cronbach’s $\alpha$ in the present study was .90 (Table 1).

**Emotion regulation skills**

The Emotion Regulation Skills Questionnaire (ERSQ; German version: Berking & Znoj, 2008) was designed to assess a broad range of skills related to regulating an individual’s affect: awareness (e.g., ‘I took a good look at my emotions’), sensations (e.g., ‘I had a good physical perception of my emotions’), clarity (e.g., ‘I was clear about what emotions I was experiencing’), understanding (e.g., ‘I knew the meaning of my emotions’), acceptance (e.g., ‘I accepted my emotions’), tolerance (e.g., ‘I was sure to be able to tolerate even intense, unpleasant emotions’), effective self-support (e.g., ‘I supported myself in emotional distressing situations’), readiness to confront distressing situations (e.g., ‘I could do what I had intended in spite of my negative feelings’), and modification (e.g., ‘I was able to influence my negative feelings’). It comprises 27 self-report items preceded by the stem ‘Last week’ that are rated on a 5-point scale from 0 = *not at all* to 4 = *almost always*. The subscale and total scores of the ERSQ are calculated as the means of the corresponding items. In the present study, we excluded the self-support scale from the total score of the ERSQ due to a significant conceptual and a moderate empirical (as indicated by a significant correlation coefficient of .37) overlap between the self-support scale of the ERSQ and the SCS. Various studies provide evidence for good internal consistency; at least adequate retest reliability; good convergent, discriminant, and factorial validity of the ERSQ (Berking & Znoj, 2008; Berking, Wupperman, et al., 2008; Berking et al., 2011, 2012; Radkovsky et al., 2014; Wirtz, Hofmann, Riper, & Berking, 2014). Internal consistencies for the total score and the subscales of the ERSQ in the present sample (Table 1) are consistent with previous studies.

**Data analyses**

In mediation theory (Baron & Kenny, 1986), an independent variable’s (IV) total effect $c$ on a dependent variable is divided into a direct effect $c'$ and an indirect effect $a \times b$ of the IV on the DV through a mediator variable (MV). The indirect effect is the product of the regression coefficients $a$, which refers to the effect of the IV on the MV, and $b$, which represents the effect of the MV on the DV, partialling out the effect of the IV. An indirect effect (i.e., a mediation effect) is assumed to be significant if the product of $a$ and $b$ becomes significant and if the direct effect is weaker than the initial total effect. A mediation effect is considered to be full if the direct effect ($c'$) is not significant and as partial if the direct effect ($c'$) becomes significant.

To test our primary hypothesis that ER abilities mediate the self-compassion–depression relationship, we estimated the indirect effect of a model with self-compassion as IV, depressive symptom severity as DV, and ER skills as MV. Both our hypothesized predictor and mediator were measured at the same time, and we aimed to obtain more information on cause and effect of the investigated variables. Thus, we also tested a reversed model with adaptive ER as IV and self-compassion as MV. We decided not to test any model in which depressive symptom load precedes ER difficulties or self-compassion, as prior research does not provide any support for this direction of the associations.
Finally, we estimated the indirect effects of eight specific ER skills in a multiple mediator model to explore which of them would be most important in the self-compassion–depression relationship. For each of those analyses, we conducted another one with the variable ‘comorbid disorders’ as covariate to exclude the option that findings are biased by the presence or absence of a comorbid disorder. We entered the covariate as dichotomous variable with the levels 0 (no comorbid disorder) and 1 (at least one comorbid disorder).

In contrast to the recommendations by Baron and Kenny (1986), who proposed using Sobel’s z-test (Sobel, 1982) to determine the significance of an indirect effect, Preacher and Hayes (2008) suggested generating nonparametric confidence intervals (CIs) using a bootstrap resampling procedure. Bootstrapping is a computationally intense method that involves repeatedly sampling from the data set and estimating the indirect effect in each resampled data set. Therefore, bootstrapping does not impose the assumption of normality of the sampling distribution (Preacher & Hayes, 2008). Moreover, bootstrapping has been suggested to have higher power than Sobel’s z-test (Preacher & Hayes, 2008). In the present study, 10,000 bootstrap resamples were used to estimate bias-corrected CIs to assess the indirect effects (as recommended; Hayes, 2013). Fritz and Mackinnon (2007) advocated a sample of at least 50 individuals to detect single mediation effects with the bootstrapping technique. The sample size \( n = 69 \) of our study was in accordance with this guideline. As Preacher and Hayes (2008) noted, an indirect effect is considered significant when zero is not included in the CIs. As recommended by Preacher and Kelley (2011), we report kappa\(^2\) in addition to the unstandardized \( (ab) \) and completely standardized indirect effects \( (ab_{cs}) \). Kappa\(^2\) is the proportion of the maximum possible indirect effect that could have occurred. There are several benefits to working with kappa\(^2\). These include the following: It is standardized, it is on an interpretable metric (bounded by 0 and 1), it is insensitive to sample size, and it allows for the construction of CIs with bootstrap methods (Preacher & Kelley, 2011). Preacher and Kelley (2011) suggested interpreting it with Cohen’s (1988) guidelines that define small, medium, and large effect sizes as .01, .09, and .25, respectively. We used SPSS version 21 (IBM statistics, Armonk, NY, USA) as well as the PROCESS macro by Hayes (2012, 2013) for all analyses. For testing our hypotheses, we set \( \alpha \) at \( p < .05 \).

**Results**

Table 2 provides an overview of the correlations between all variables investigated. It shows positive correlations between self-compassion and global ER skills including the specific abilities to sense, accept, tolerate, and modify negative emotions and to support oneself during emotional distress. Moreover, it indicates that self-compassion correlates negatively with depressive symptom severity. Finally, Table 2 demonstrates that global ER skills as well as all of the specific ER skills assessed with the ERSQ (except for self-support) are negatively associated with depressive symptoms.

As illustrated in Figure 1, the findings concerning our first mediation model are consistent with our primary hypothesis. A significant indirect effect of global self-compassion on depressive symptom severity through global ER skills \( (ab = -3.05, SE = 1.34, CI_{a} < .05 = -6.42 \text{ to } -1.03; ab_{cs} = -0.16, SE = 0.07, CI_{a} < .05 = -0.34 \text{ to } -0.06; \kappa^2 = .16, SE = 0.07, CI_{a} < .05 = 0.05 \text{ to } 0.32) \) shows that adaptive ER mediates the relationship between self-compassion and depression. In combination with a non-significant direct effect of self-compassion on depressive symptom severity \( (c' = -3.50, SE = 1.52, CI_{c'} < .05 = -6.62 \text{ to } -0.38) \),
<table>
<thead>
<tr>
<th>Scale</th>
<th>1</th>
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<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
<th>8</th>
<th>9</th>
<th>10</th>
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<tr>
<td>1. SCS</td>
<td></td>
<td>–</td>
<td>.40**</td>
<td>.45***</td>
<td>.73***</td>
<td>.29*</td>
<td>.68***</td>
<td>.76***</td>
<td>.64***</td>
<td>.40**</td>
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<td>2. ERSQ&lt;sub&gt;total&lt;/sub&gt;&lt;sup&gt;a&lt;/sup&gt;</td>
<td>.21(*)</td>
<td>.73***</td>
<td>–</td>
<td>.45***</td>
<td>.76***</td>
<td>–</td>
<td>–</td>
<td>–</td>
<td>–</td>
<td>–</td>
<td>–</td>
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<tr>
<td>3. Awareness</td>
<td>.20(*)</td>
<td>.80***</td>
<td>.62***</td>
<td>.50***</td>
<td>.71***</td>
<td>.68***</td>
<td>–</td>
<td>–</td>
<td>–</td>
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<td>4. Sensations</td>
<td>.17</td>
<td>.76***</td>
<td>.64***</td>
<td>.76***</td>
<td>–</td>
<td>–</td>
<td>–</td>
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<td>–</td>
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<tr>
<td>5. Clarity</td>
<td>.20(*)</td>
<td>.80***</td>
<td>.62***</td>
<td>.50***</td>
<td>.71***</td>
<td>.68***</td>
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<td>6. Understanding</td>
<td>.43****</td>
<td>.74****</td>
<td>.50***</td>
<td>.36**</td>
<td>.33***</td>
<td>.44***</td>
<td>–</td>
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<td>7. Acceptance</td>
<td>.43****</td>
<td>.64****</td>
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<td>.21</td>
<td>.16</td>
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<td>8. Tolerance</td>
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<td>.32***</td>
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<td>.37***</td>
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<td>10. Self-Support</td>
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<td>.62****</td>
<td>.29*</td>
<td>.31***</td>
<td>.28*</td>
<td>.32**</td>
<td>.56****</td>
<td>.57****</td>
<td>.34***</td>
<td>.50****</td>
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</table>

Note. SCS, Self-Compassion Scale; ERSQ<sub>total</sub>, Emotion Regulation Skills Questionnaire total score; BDI-II, Beck Depression Inventory-II. *The self-support subscale was partialled out of the total score. (*)<sub>p < .10</sub>, *<sub>p < .05</sub>, **<sub>p < .01</sub>, ***<sub>p < .001</sub>.
The results of the mediation analyses indicate that this mediation is complete. ER skills even remained a significant mediator when a more conservative alpha level of .01 was used ($ab = -3.05$, $SE = 1.32$, CI $< .01 = -7.52$ to $0.48$; $ab_{cs} = -0.16$, $SE = 0.07$, CI $x < .01 = -0.40$ to $-0.03$; $\kappa^2 = .16$, $SE = 0.07$, CI $x < .01 = 0.03$ to $0.38$; $c' = -3.50$, $SE = 2.14$, $t = -1.63$, $p = .11$). In contrast, and as shown in Figure 2, the indirect effect of the reversed mediation model was not significant ($ab = -1.39$, $SE = 0.99$, CI $x < .05 = -3.97$ to $0.10$; $ab_{cs} = -0.08$, $SE = 0.05$, CI $x < .05 = -0.21$ to $0.01$; $\kappa^2 = .08$, $SE = 0.05$, CI $x < .05 = 0.01$ to $0.21$; $c' = -7.58$, $SE = 2.13$, $t = -3.56$, $p < .001$). Furthermore, the effect size for the reversed model ($\kappa^2 = .08$; small to medium effect) was noticeably smaller than the one for the hypothesized model ($\kappa^2 = .16$; medium to large effect). These findings provide preliminary evidence to show that self-compassion and ER abilities are not interchangeable within the context of our hypothesized mediation model. The results for both the

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**Figure 1.** Mediation model with global emotion regulation skills (ERSQ<sub>total</sub>) as mediator in the relationship between self-compassion (SCS) and depression (BDI-II). *$p < .05$, **$p < .01$, ***$p < .001$. For the indirect effect, we can only indicate if $p$ is <.05 or <.01. $a =$ effect of the independent variable on the mediator. $b =$ effect of the mediator on the dependent variable. $c =$ direct effect of the independent variable on the dependent variable. $c' =$ total effect of the independent variable on the dependent variable. $ab =$ unstandardized indirect effect. $ab_{cs} =$ completely standardized indirect effect.

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**Figure 2.** Reversed mediation model with self-compassion (SCS) in the relationship between global emotion regulation skills (ERSQ<sub>total</sub>) and depression (BDI-II). *$p < .05$, **$p < .01$, ***$p < .001$. For the indirect effect, we can only indicate if $p$ is <.05 or <.01. $a =$ effect of the independent variable on the mediator. $b =$ effect of the mediator on the dependent variable. $c =$ direct effect of the independent variable on the dependent variable. $c' =$ total effect of the independent variable on the dependent variable. $ab =$ unstandardized indirect effect. $ab_{cs} =$ completely standardized indirect effect.
hypothesized and the reversed model remained unchanged when including ‘comorbid disorders’ as covariate.

The results of the exploratory analysis that examined the potential mediating effects of specific ER skills are shown in Table 3. What is most noticeable is that among all the skills that were assessed with the ERSQ, tolerance of negative emotions was the only one that completely mediated the relationship between self-compassion and depressive symptoms (ab = −2.20, SE = 1.39, CIab < .05 = −5.86 to −0.09; abcs = −0.12, SE = 0.07, CIabcs < .05 = −0.30 to −0.003; c′ = −3.26, SE = 2.38, t = −1.37, p = .18). Even when entering ‘comorbidities’ as covariate, tolerance remained the only mediator in the self-compassion–depression relationship.

Table 3. Exploratory mediator model with the SCS as IV, the subscales of the ERSQ as MVs, and the BDI-II as criterion (10,000 Bootstrap Samples)

<table>
<thead>
<tr>
<th>MV</th>
<th>a</th>
<th>b</th>
<th>c′</th>
<th>ab</th>
<th>abcs</th>
<th>c</th>
</tr>
</thead>
<tbody>
<tr>
<td>Awareness</td>
<td>0.31</td>
<td>−0.55</td>
<td>−3.26</td>
<td>−0.17</td>
<td>−0.01</td>
<td>−6.54</td>
</tr>
<tr>
<td>Sensations</td>
<td>0.46</td>
<td>−0.40</td>
<td>−0.18</td>
<td>−0.01</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Clarity</td>
<td>0.23</td>
<td>1.39</td>
<td>0.32</td>
<td>−0.02</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Understanding</td>
<td>0.28</td>
<td>−3.25</td>
<td>−0.91</td>
<td>−0.05</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Acceptance</td>
<td>0.64</td>
<td>0.48</td>
<td>−0.31</td>
<td>0.02</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Tolerance</td>
<td>0.61</td>
<td>−3.58</td>
<td>−2.20</td>
<td>−0.12</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Readiness to Confront</td>
<td>0.22</td>
<td>−1.56</td>
<td>−0.34</td>
<td>−0.02</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Modification</td>
<td>0.43</td>
<td>−0.21</td>
<td>−0.09</td>
<td>−0.01</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Notes. SCS, Self-Compassion Scale; BDI-II, Beck Depression Inventory-II; ERSQ, Emotion Regulation Skills Questionnaire; IV, independent variable; DV, dependent variable; MV, mediator variable. a = effect of IV on MV, b = effect of MV on DV, c′ = direct effect, ab = unstandardized indirect effect, abcs = completely standardized indirect effect, c = total effect. The self-support scale of the ERSQ was not included as a mediator variable given its potential overlap with the SCS.

The results of the exploratory analysis that examined the potential mediating effects of specific ER skills are shown in Table 3. What is most noticeable is that among all the skills that were assessed with the ERSQ, tolerance of negative emotions was the only one that completely mediated the relationship between self-compassion and depressive symptoms (ab = −2.20, SE = 1.39, CIab < .05 = −5.86 to −0.09; abcs = −0.12, SE = 0.07, CIabcs < .05 = −0.30 to −0.003; c′ = −3.26, SE = 2.38, t = −1.37, p = .18). Even when entering ‘comorbidities’ as covariate, tolerance remained the only mediator in the self-compassion–depression relationship.

Discussion

The main goal of our study was to examine the role of ER abilities in the relationship between habitually used self-compassion and depression in clinically depressed individuals. For this purpose, we assessed trait self-compassion, the successful application of ER skills, and depressive symptom severity in a sample of 69 clinically depressed individuals and tested whether the association between self-compassion and the subsequent depressive symptom severity would be mediated by the successful application of ER skills. The findings from the present study are consistent with this hypothesis. They also showed that the association between ER and depressive symptoms was not mediated by increased self-compassion. Moreover, exploratory analyses indicated that among a broad range of specific ER skills, the ability to tolerate undesired emotions was the only skill that significantly mediated the association between self-compassion and depression.

Our findings add to the body of evidence indicating that self-compassion has positive effects on depression (e.g., Gilbert & Procter, 2006; Krieger et al., 2016; Kuyken et al., 2010; Raes, 2011; Van Dam et al., 2011), that self-compassion predicts or even causes adaptive ER (Diedrich et al., 2016; Vettese et al., 2011), and that the successful application of ER skills facilitates coping with depression (e.g., Berking et al., 2014; Diedrich et al., 2014; Liverant et al., 2008; Radkovsky et al., 2014). Our findings can be
considered an extension of previous research by indicating that the association between self-compassion and depression is mediated by successful ER. Furthermore, the data provide evidence that among various ER skills, only the ability to tolerate negative emotions mediates the association between self-compassion and depression.

Therefore, our findings provide at least preliminary support for the theory that being self-compassionate can help depressed individuals overcome mental health problems by facilitating effective ER (e.g., Berking & Whitley, 2014). More specifically, the findings suggest that self-compassion has the potential to enable depressed individuals to tolerate their negative emotions and thus assists them in the process of coping with their symptoms. This conclusion is consistent with theories that assume that tendencies to avoid aversive inner experiences (such as undesired emotions) contribute to the development and maintenance of depressive symptoms and that enhancing tolerance towards these experiences helps to restore and maintain mental health (Berking, Neacsiu, Comtois, & Linehan, 2009; Ferster, 1973; Grosse Holtforth et al., 2012; Hayes, 2004; Hayes, Beevers, Feldman, Laurenceau, & Perlman, 2005; Hayes et al., 1996; Ottenbreit & Dobson, 2004).

Furthermore, the findings of the present study might also have significant clinical implications – especially if they receive further support in (more advanced) longitudinal designs in future research. They indicate that systematically fostering self-compassion through specific compassion-focused interventions might facilitate a reduction in depressive symptoms by improving the person’s abilities to regulate his or her emotions, especially by the ability to tolerate negative emotions. Thus, compassion-focused interventions might be particularly promising in depressed patients with a tendency to avoid negative emotions and deficits in tolerating them.

The major limitations of this study include the exclusive use of self-report measurements, a sample size that did not enable subgroup analyses, the short time-lag between the assessment of self-compassion/ER and depression, and the lack of multiple assessments allowing for (advanced) longitudinal mediation modelling (MacKinnon & Fairchild, 2009; MacKinnon, Fairchild, & Fritz, 2007). Due to the latter two limitations, we were unable to establish temporal sequencing of the variables included in our hypothesized model. However, there are two reasons not to assume any other model regarding the relationship between self-compassion, ER, and depression than the one we hypothesized. First, prior research does neither provide any evidence for a model in which depressive symptom severity predicts the difficulties in ER (Radkovsky et al., 2014) nor for one in which depressive symptoms predict a lack of self-compassion (Krieger et al., 2016). Second, the competing model we tested in the present study, in which self-compassion was investigated as a mediator in the ER–depression relationship, did not yield any empirical evidence. Another limitation of our study, however, is that with the SCS, we used an indicator of self-compassion that includes theoretical factors (such as mindfulness or common humanity), which may not necessarily be considered integral components of self-compassion (Gilbert, 2014; Weissman & Weissman, 1996), and excludes others (such as the motivation and intention to alleviate suffering) that might, however, be (Gilbert, 2014). Consistent with this critique, Schmidt et al. (2013) were unable to replicate the six-factor solution originally proposed by the developer of the SCS (Neff, 2003). Moreover, we used an unpublished version of the SCS (instead of the published one by Hupfeld & Ruffieux, 2011), which limits possibilities to replicate the study and compare the findings with those from other studies and samples.

Given the theoretical tensions regarding the concept of self-compassion, future research should aim to provide a clear definition of self-compassion and develop
measurements that independently assess the core concept of self-compassion, as well as potentially related but theoretically different concepts. Future studies should also work to identify the specific components of self-compassion that are most important to prevent or treat depression, and clarify whether enhancing ER skills is the relevant pathway for a more narrowly defined concept of self-compassion, as well as related concepts. Additionally, it seems necessary to confirm in longitudinal studies that tolerance of negative aspects of the self (such as the own emotions) is indeed a distinct consequence of self-compassion and not only another subcomponent of the construct itself. Furthermore, future research should investigate whether the mediating effect of tolerance of negative emotions in the association of self-compassion and depression depends on moderating factors such as a habitual fear of emotions or a tendency to avoid aversive experiences (Eifert & Heffner, 2003; Feldner, Zvolensky, Eifert, & Spira, 2003; Kashdan, Zvolensky, & McLeish, 2008; Preacher, Rucker, & Hayes, 2007). Ideally, such studies should use experimental designs as they provide evidence for causal effects. Finally, future research should work to identify the mechanisms that explain why self-compassion facilitates the ability to tolerate negative emotions. More specifically, it should clarify whether self-compassion enhances this ability by reducing the load of negative affect, by cueing more positive affect, and/or by enhancing the perceived ability to tolerate negative emotions. Moreover, it should be examined in a serial mediator model whether self-compassion reduces depressive symptoms in depressed individuals through increased ER abilities and thus decreased experiential avoidance and rumination (Hayes, 2012). Additionally, it might be tested whether the improved ability to tolerate negative emotions is related to an enhanced cognitive and behavioural flexibility (Gilbert, 2013; Martin, Staggers, & Anderson, 2011) and thus enables depressed patients to better adapt to environmental demands and cope with their depression. Finally, improved interpersonal ER (Marroquín, 2011) (and associated social skills) might be investigated in the self-compassion–depression relationship given that previous research indicates that (a) (self)-compassion is associated with an increased interpersonal functioning (e.g., Crocker & Canevello, 2008; Neff & Beretvas, 2013; Yarnell & Neff, 2013) and (b) depression-prone individuals tend to suffer from interpersonal functioning deficits (e.g., Petty, Sachs-Ericsson, & Joiner, 2004). The results from these studies would enlarge the knowledge necessary to best utilize self-compassion in treatments for depression and other mental disorders.

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