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The Effect of Self-Compassion on Impulsivity Provoked by a Reduction in Self-Esteem

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Abstract The focus of this study was to investigate the role of self-compassion on impulsivity after a negative event. To accomplish this task a study was conducted among college students to examine the role that self-compassion plays in emotional regulation and self-regulation following a negative experience. This analysis involved measuring self-esteem, negative affect, and impulsivity. The scales in this study were administered prior to and after the college students took their first statistics test. Students displayed a significant decrease in self-esteem, a significant increase in negative affect, and a significant increase in impulsivity. When self-compassion was included as a covariate, the only significant change was a decline in self-esteem. Moreover, the analysis revealed a significant interaction between self-compassion and changes over time. Implications and limitations of these results were discussed.

Keywords Self-compassion · Impulsivity · Self-regulation · And emotional regulation

Introduction

Self-regulation failure has an array of adverse consequences for individuals and the community (Wagner and Heatherton 2015). Research suggests that negative affect can lead to all manners of impulsive behavior, including aggression, substance abuse, eating disorders, criminality, and risky behavior (Wagner and Heatherton 2015). Negative affect provoked from a self-esteem loss is especially problematic as it contributes to self-regulation failure (Agnew 2013; Heatherton and Baumeister 1991). Indeed, many studies suggest that impulsive behavior stems from a lack of self-awareness and can be provoked by a negative self-view (Heatherton and Baumeister 1991; Wagner and Heatherton 2015).

One particular concept that has shown success as an intervention to impulsivity is self-compassion. Self-compassion is a nonjudgmental awareness of personal inadequacies, and it involves applying positive affect to alleviate personal suffering stemming from feelings of personal shortcomings (Neff 2003b). During adverse events, self-compassion involves understanding and enhancing the positive facets of the event (Stosny 1995). Self-compassion involves being mindful, being kind to oneself, and the understanding that suffering is a shared experience inherent to the human condition (Neff 2003b).

Despite the finding that self-compassion has a positive relationship with self-esteem, self-compassion is distinct from self-esteem in that compared to self-esteem, self-compassion is not correlated with narcissism, has a stronger negative correlation with negative affect, and has a stronger positive association with positive emotions. (Neff 2003a; Neff and Vonk 2009). Similarly, self-compassion relates to mindful awareness of a personal experience while self-esteem describes a personal self-evaluation.

Research findings indicate that self-compassion may be a useful tool for mitigating self-regulation failure. Self-compassion has been positively linked to self-control among inmates (Morley et al. 2016). Self-compassion has been associated with neurological structures implicated in self-control (Klimecki et al. 2013) and emotional regulation (Longe et al.

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2010). Similarly, one study found that increases in self-compassion were associated with decreases in negative emotions about the self (Albertson et al. 2014). Adams and Leary (2007) found that self-compassion reduces negative emotions and impulsive eating among restricted eaters. Another study conducted by Web and Forman (2013) found that self-compassion is positively associated with self-acceptance and negatively associated with binge eating. Kelly et al. (2010) found that self-compassion was related to a reduction of negative emotions and an increase in self-regulation among smokers. Finally, the Compassion Workshop (Murphy et al. 2005; Stosny 1995) has linked self-compassion to an increase in self-esteem and reduction in impulsive violence among domestic violence perpetrators.

These findings have demonstrated a theoretical intersection among self-compassion, self-esteem, negative affect, and impulsivity. Specifically, evidence indicates that self-compassion is associated with self-control (Klimecki et al. 2013; Morley et al. 2016) and emotional regulation (Longe et al. 2010). Research findings suggest that changes in self-compassion often occur in conjunction with changes in self-esteem (Albertson et al. 2014; Murphy et al. 2005), whereas self-compassion is anticorrelated with changes in negative affect (Adams and Leary 2007; Kelly et al. 2010) and impulsivity (Web and Forman 2013). Furthermore, there is evidence that self-compassion based interventions may increase self-esteem and reduce impulsive behavior (Murphy et al. 2005). Currently, research has yet to explore self-compassion as a moderator to changes in self-esteem, negative affect, and impulsivity provoked by an adverse event.

To accomplish this inquiry, we compared pre and post-test negative affect, self-esteem, and impulsivity scores of 116 college students using repeat measures MANOVA before and after the participants received their grades on their first statistics test. We then repeated the same analysis including self-compassion as a covariate. Previous studies have indicated that self-evaluations can lead to changes in self-esteem, increases in negative affect, and result in impulsive behavior (Philips and Silvia 2005). Researchers have indicated that self-evaluations can lead to changes in self-esteem, increases in negative affect, and result in impulsive behavior (Philips and Silvia 2005). School examinations often provoke self-evaluations, especially in challenging classes. Statistics is a difficult subject and many students receive unflattering grades. As indicated by Fig. 1, It is expected that a statistically significant number of students will report a decrease in self-esteem, an increase in negative affect, and impulsivity after they receive their grade. It was hypothesized that the students would demonstrate a reduction in self-esteem, an increase in negative affect, and an increase in impulsivity during the post-test. Since self-compassion may buffer against the adverse emotional impact associated with self-esteem loss, it was expected that self-esteem would be the only factor displaying a significant change once self-compassion was included as a covariate.

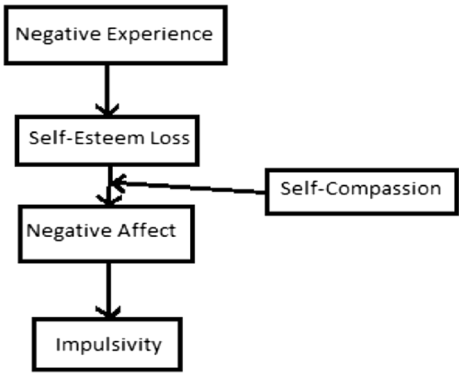

Fig. 1 Descriptive statistics

Methods

Participants

Participants for this study included 118 participants, consisting of 60 men and 58 women enrolled in an undergraduate university statistics course. The only demographic information collected was gender to maintain anonymity. However, due to the demographics of the university, the participants were likely mostly White Non-Hispanic and White Hispanic.

Procedure

Students were surveyed before taking their first exam and after receiving their first exam grade in a statistics class. Students were recruited at the beginning of class. Students were requested to draw a symbol and number on the envelopes of both surveys to allow the researchers to connect the items from both tests without knowing the identity of the participants. The pre-tests were delivered two weeks before the first statistics test. During the pretest, students completed a gender demographics form, the PANAS, the impulsivity subscale, the shortened self-compassion form, and Rosenberg's self-esteem scale. Post-test surveys were taken at the first class after the test scores were released. Test grades were posted two days before the post-test survey. Before distributing the post-test surveys, students were asked to look at their grades at their convenience during this time frame. The research assistants who provided grades to students had not seen the grades.

Demographics The demographic form included a question requesting gender information. The post-test demographic questionnaire included an item eliciting the students' evaluation of their test performance.

The Self-Compassion Short Form Scale The Self-Compassion short form is a 12-item self-report instrument scale. It contains six subscales including three positive scales and three negative scales. These include the following: Self-kindness (e.g., I try to be understanding and patient towards those aspects of my personality I don't like), Common Humanity (e.g., I try to see my failings as part of the human condition), and Mindfulness (e.g., When something upsets me, I try to keep my emotions in balance). Further, it contains the following three negative subscales: Self-judgment (e.g., I'm disapproving and judgmental about my own flaws and inadequacies), Isolation (e.g., When I fail at something important to me, I tend to feel alone), and Over-identification (e.g., When I'm feeling down, I tend to obsess and fixate on everything that's wrong).

Negative items (self-judgment, isolation, and over-identification) were reverse scored prior to completing the total mean. This measure has shown to have good validity and reliability (Raes et al. 2011). In this study, pre-test and post-test measures yielded a Cronbach's alpha of .82 and .86 respectively.

Positive and Negative Affect Schedule (PANAS) This study used the Positive and Negative Affect Schedule (PANAS) to measure the participants' affective state. Watson et al. (1988) developed this inventory of positive (e.g., determined, proud, enthusiastic) and negative emotions (e.g., nervous, guilty, upset). Items are rated based off of the participants' feelings at the present moment from "not at all" to "extremely." The pre-test and post-test measures yielded Cronbach's alpha of .90 and .92 respectively.

Self-Esteem The Rosenberg Self-Esteem Scale (Rosenberg 1979) was used to measure global self-esteem. This self-report scale consists of 10 items that are rated on a 5-point Likert scale from 1 (strongly disagree) to 5 (strongly agree). Sample questions include statements such as, "On the whole I am satisfied with myself" and "I feel I do not have much to be proud of." Items are scored and summed to compute a total self-esteem score, with lower scores reflecting low self-esteem and higher scores indicating high self-esteem. According to research (Rosenberg 1979), convergent and discriminant validity have been found with self-ideal (.67), self-image (.83), and a psychiatrists' ratings (.56). The pre-test and post-test measures yielded Cronbach's alpha of .86 and .87 respectively.

Impulsivity To measure impulsivity in this study, the impulsivity subscale from Grasmick et al.'s (1993) Self-Control Scale was used. This subscale was part of a battery of subscales used to measure self-control. The impulsivity subscale includes four items such as "I often act on the spur of the moment without thinking". These items are rated on a five-point Likert scale: never (0), rarely (1), sometimes (2), often (3), and almost always (4). Seven of the items are reverse coded. Higher scores on this scale indicate a lower level of self-control. In this study, Cronbach's alpha was found to be .77 and .78 respectively.

Negative Life Experience To determine if a participant suffered from a negative life experience, each participant's post-test negative affect score was subtracted from his or her pretest score. If participants received a negative number, they were coded as having a negative experience.

Exam Satisfaction Exam satisfaction was measured using a one-item Likert scale that asked "How happy were you with your grade?" This item was rated on a four-point scale (4) strongly agree, (3) agree, (2) disagree, (1) and strongly disagree.

Results

Analyses include descriptive statistics, correlational analyses, and multivariate analyses. Tables 1 and 2 display descriptive statistics and a correlation table respectively. In addition to descriptive statistics and correlational analyses, the analyses consisted of a two-way repeat measures MANOVA analyzing the pre-test and post-test self-esteem, negative affect, and impulsivity scores. After conducting the initial MANOVA, the analyses were repeated using self-compassion as a covariate. Also, self-compassion pre and post-test scores were averaged to calculate the self-compassion total scores (SCT).

As indicated by Table 2, correlational analyses revealed that the exam satisfaction yielded a high negative correlation with negative experience $R = -.9$ $p < .05$ and post-test negative affect $r = -.2$ $p < .05$. Negative experience produced a significant negative relationship with post-test negative affect at time 2 $r = .21$ $p < .05$ and post-test self-esteem $r = -.15$ $p < .05$. SCT was correlated with pre-test self-esteem $r = .39$ $p < .05$, post-test self-esteem $r = .59$ $p < .05$, pre-test negative affect $r = -.38$, post-test negative affect scores $r = -.51$ $p < .05$, pre-test impulsivity scores $r = -.29$ $p < .05$, and post-test impulsivity scores $r = -.19$ $p < .05$. As indicated by Table 2, pre-test and post-test measures concerning the independent variables were all correlated R ranging from −.23 to −.49 $p < .05$.

A repeated measure MANOVA was conducted to compare the effect of the evaluation on the post-test negative affect, self-esteem, and impulsivity scores. This analysis revealed a significant within group difference across time

Table 1 Means and Standard deviations

	Mean	SD
Time 1		
Negative affect	25.83	8.35
Self-esteem	21.14	4.38
Impulsivity	7.61	2.24
Self-compassion	37.48	8.25
Time 2		
Negative affect	27.91	9.16
Self-esteem	19.94	4.84
Impulsivity	7.97	2.35
Self-compassion	38.41	8.68

(F(3115) = 8.65 $p < .05$ partial η2 = .18. Univariate Analyses revealed a significant change across time from self-esteem (F(1117) = 14.37 $p < .05$ partial η2 = .11), negative affect (F(1117) = 10.42 p < .05 partial η2 = .08), and impulsivity (F(1117) = 7.43 p < .05 partial η2 = .06). Sidak post hoc analyses revealed a significant reduction in self-esteem p < .05. post hoc analyses, as well, found a significant increase in post-test negative affect p < .05, and impulsivity p < .05.

After the initial MANOVA, the analysis was repeated with the inclusion of self-compassion as a covariate. Multivariate repeat measures analyses revealed a significant change in the dependent variables across time (F(3114) = 3.74 p < .05 partial η2 = .09). Likewise, the covariate self-compassion showed a significant interaction across time. (F(3114) = 2.96 p < .05 partial η2 = .07). Univariate analyses found that self-esteem displayed a significant change across time (F(1116) = 10.44 p < .05 partial η2 = .08) and an interaction with time and self-compassion (F(1116) = 34.2 p < .05 partial η2 = .05). Unlike the first analysis, negative affect and impulsivity were not significant.

Discussion

This study sought to investigate the impact of self-compassion on impulsivity following a negative event. The key to this investigation was to capture a negative experience. Accordingly, this study found a significant increase in negative affect and a significant decrease in self-esteem following the negative event. Moreover, the magnitude of the correlation between exam satisfaction and negative experience was almost −1 ($r = -.9$), which indicates that exam satisfaction was almost synonymous with the negative experience variable. Exam satisfaction was correlated with post-test negative affect and a negative change in self-esteem. These findings suggest that the exam was a negative experience that resulted in self-esteem loss for a significant number of students.

Self-compassion, on the other hand, was not correlated with either exam satisfaction or negative experience. Self-compassion displayed a negative association with pre-test negative affect, post-test negative affect, and impulsivity. In contrast, self-compassion displayed a positive relationship with pre-test and post-test self-esteem. When self-compassion was included as a covariate, the only dependent variable that displayed a significant change was self-esteem. These results suggest that people with higher self-compassion still suffered from a self-esteem loss, but that loss did not lead to an increase in negative affect or an increased propensity for impulsive behavior.

Finally, taking these findings, along with the loss of statistical significance resulting from the inclusion of self-compassion as a covariate, and the statistical interaction of self-compassion and time, these results indicate that self-compassion is involved in the lack of change among the dependent variables. This may imply that self-compassion mediates the impact of self-esteem loss on the inflation of negative affect and impulsivity. Since

Table 2 Correlation coefficients among psychological variables, negative experience, and exam satisfaction

	SC1	SC2	SCT	SE1	SE2	NA1	NA2	I1	I2	ES	NE
SC1	1										
SC2	.85**	1									
SCT	.97**	.97**	1	.							
SE1	.37**	.43**	.39**	1							
SE2	.57**	.57**	.56**	.72**	1						
NA1	−.37**	−.38**	−.38**	−.43**	−.49**	1					
NA2	−.49**	−.46**	−.51**	−.40**	−.38**	−.67**	1				
I1	−.26**	−.29**	−.29**	−.23**	−.29**	.21**	.24*	1			
I2	−.15*	−.22**	−.19*	−.25**	−.25**	.20**	.17*	.81**	1		
ES	−.12	−.05	−.08	−.01	.08	.02	−.23*	.06	−.03	1	
NE	.05	−.01	.05	−.04	−.15*	.02	.21**	−.11	−.01	−.9**	1

*$p < .05$ **$p < .01$

self-compassion displays a negative relationship with impulsiveness, it would be reasonable to conclude that participants with high self-compassion are less likely to experience an increase in impulsivity following a negative event. Given that self-esteem did decrease, negative affect did not change, and self-compassion displayed a negative relationship with post-test negative affect, these results suggest that self-compassion mediates the impact of self-esteem on negative affect and impulsivity.

These findings have the following possible explanations. One possible explanation is that self-compassion protects against the adverse effect of self-esteem loss. This implication has much empirical support (Adams and Leary 2007; Kelly et al. 2010; Murphy et al. 2005; Web and Forman 2013). Given the relevance of this implication, Self-Awareness Theory provides a mechanism for the impact of self-compassion on impulsivity following a negative event (Heatherton and Baumeister 1991; Heatherton and Wagner 2011; Wagner and Heatherton 2015). Self-Awareness Theory states that impulsivity can result from the unpleasantness of self-awareness (Heatherton and Baumeister 1991). Specifically, Self-Awareness Theory describes two states of self-awareness including high objective self-awareness and low subjective self-awareness. In a condition of high self-awareness, people are aware of their personal failure. This awareness can lead to an unpleasant feeling of deflated self-worth. To mitigate these unpleasant emotions, the individual has a tendency to shift into a state of low self-awareness. In this state the person is unburdened by their failure at the cost of their ability to self-regulate. Research findings suggest that self-compassion reduces the unpleasant feelings of objective self-awareness by minimize the negative affect associated with a reduction in self-esteem (Adams and Leary 2007; Kelly et al. 2010; Murphy et al. 2005; Web and Forman 2013). As indicated by these findings, self-compassion accounts for the lack of changes in negative affect and impulsivity following an unpleasant event. Future studies will have to clarify if Self-Awareness Theory is the causal mechanism.

Another potential explanation could be that the change in significance was due to conceptual overlap among the covariate and the dependent variables. Specifically, self-compassion consists of two subscales that carry significant conceptual overlap with negative affect and impulsivity. The mindfulness component of self-compassion relates to a state of self-awareness in the present moment. Impulsive people by nature are not as aware of their impulsive actions until after they have been enacted, and therefore they are not as mindful. The self-kindness aspect of self-compassion has an affective component which overlaps conceptually with negative affect. Given the theoretical link between these variables, significant collinearity could lead to a lack of significance. This possibility is unlikely since self-esteem displays a stronger correlation than the other variables.

Another possible explanation for the findings in this study relates to the relationship between self-compassion and self-esteem. Previous research explored the conceptual distinctions between self-esteem and self-compassion (Neff and Vonk 2009). Despite the similarities and strong correlation with these two variables, the current study has validated that these concepts are not the same. Since self-esteem displayed a significant change after controlling for self-compassion, this study provides further support for their distinction. Previous research has suggested that self-compassion displays several benefits compared to self-esteem as an indicator of emotional wellbeing (Neff and Vonk 2009). These findings from the current study provide further evidence of the enhanced utility of self-compassion compared to self-esteem. Specifically, the contribution of self-esteem loss to negative affect and impulsivity was mitigated when self-compassion was included as a covariate.

These findings indicate that a decrease in self-esteem may accompany an increase in negative affect and an increased propensity towards impulsive behavior. Further, self-compassion accounts for the lack of increase in negative affect and less propensity for impulsive behavior following a decrease in self-worth following a negative event. Future studies should explore this link in more depth.

Limitations

This study has some relevant limitations that need to be addressed, including the use of self-report scales and the inability to directly identify a causal link between the variables involved in this study. All of the variables in this study were measured by self-report. Although there were not any obvious reasons to suspect false participant reporting, these risks are still present. Another limitation of this study is that it relies on correlation information. More specifically, this study design does not determine if variables display any causal influence on each other. Another potential flaw in this design relates to external threats in validity. This study design does not rule out the potential for factors outside the study changing self-esteem, negative affect, or impulsivity. While this threat would not discredit the relationship among the variables in the study, outside variables could be responsible for the real change in variables.

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Compliance with Ethical Standards All data collection had prior approval from the University Institutional Review Board.

Conflict of Interest The author declares that there is no conflict of interest.

Ethical Approval All procedures performed in studies involving human participants were in accordance with the ethical standards of the institutional and/or national research committee and with the 1964 Helsinki declaration and its later amendments or comparable ethical standards.

Informed Consent Informed consent was obtained from all individual participants included in the study.

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