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ORIGINAL ARTICLE

Cultivating Self-Compassion Promotes Disclosure of Experiences that Threaten Self-Esteem

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Abstract

The present study investigated whether cultivating self-compassion facilitates disclosure of self-esteem threatening experiences to others, and whether it does so indirectly by reducing shame. Eighty-five female undergraduates recalled an event that threatened their self-esteem and were randomly assigned to write about it in a self-compassionate ($n = 29$), self-esteem enhancing ($n = 30$), or non-directive (free writing; $n = 26$) way. Participants then learned that self-disclosure can decrease distress and were invited to share their event in writing to a stranger. Contrary to the central hypothesis, there was no main effect of condition on self-disclosure; however, post hoc analyses demonstrated that condition interacted with self-esteem threat to predict length and depth of disclosure. For participants whose events were more self-esteem threatening, cultivating either self-compassion or self-esteem promoted deeper disclosures than free writing, and self-compassionate writing alone fostered longer disclosures. For less self-esteem threatening events, free writing promoted deeper and longer disclosures than cultivating self-compassion or self-esteem. Shame was not a significant mediator. Results highlight the potential utility of self-compassion or self-esteem enhancing interventions for facilitating the disclosure of distressing events that threaten self-worth.

Keywords Self-compassion · Self-esteem · Threat · Distress disclosure · Shame

Introduction

When negative events (e.g., personal disappointments, failures, rejections) are perceived as being meaningful and pose a strong threat to our feelings of self-worth or self-esteem, they can activate or reinforce negative self-schemas that contribute to the development of psychopathology (Seeds and Dozois 2010). Threats to self-esteem are closely tied to feelings of shame, which are thought to be central to many psychological problems (Cândea and Szentagotai 2013; Leary et al. 2009; Velotti et al. 2017). Although it is possible to recuperate from threats to self-esteem using intrapersonal coping strategies, some experiences may be difficult to recover from alone. For experiences in which we are overcome with emotional distress and self-regulation fails, we may need to draw on others' resources to help us cope (Zaki and Williams 2013). For example, others can facilitate recovery from distressing experiences by providing a new perspective, offering suggestions for how to cope, or simply lending a compassionate ear. Eliciting this social support from others requires *distress disclosure*, the process through which one provides the other with information about one's negative emotional state (Kahn and Hessling 2001).

Revealing difficulties to others may help buffer the negative effects of self-esteem threat (vanDellen et al. 2011). Indeed, distress disclosure predicts increased subjective well-being and social support, as well as decreased depressive symptoms and perceived stress (Kahn et al. 2001; Saxena and Mehrotra 2010; Ward et al. 2007). Unfortunately, the shame provoked by self-esteem threatening events may promote a desire to conceal experiences from others, making it difficult to obtain support, prolonging distress, and jeopardizing emotional well-being (DeLong and Kahn 2014; Macdonald and Morley 2001; Moscovitch 2009). What,

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then, can facilitate distress disclosure in the face of threats to self-esteem?

One obvious approach that might facilitate disclosure would be restoring self-esteem. Research has demonstrated the short-term benefits of self-esteem enhancing interventions for restoring positive feelings towards the self after self-esteem threat (Greenberg et al. 1992; Leary et al. 2009; vanDellen et al. 2011). However, the effects of such strategies can be temporary and may actually prevent rather than promote distress disclosure by increasing sensitivity to future threats to self-worth (Crocker 2002). That is, self-esteem boosting strategies may activate the goal to maintain self-worth rather than to seek care, encouraging an avoidant style of coping and resistance to recalling or sharing perceived failures with others for fear that this may trigger feelings of shame. Such processes would prevent rather than promote distress disclosure.

A promising alternative strategy may be to practice self-compassion. Self-compassion (Neff 2003) involves responding to present-moment thoughts and feelings in a non-judgmental way, recognizing how people are connected by universal experiences of failure and suffering, and treating oneself with caring and warmth in the face of distress. As self-compassion interventions have been shown to reduce negative emotions and feelings of shame in relation to highly shame-provoking experiences (Arimitsu and Hofmann 2016; Johnson and O'Brien 2013; Kelly et al. 2009), adopting a more self-compassionate stance may reduce the desire to conceal the self from others and thereby promote distress disclosure. Furthermore, since self-compassion is thought to promote engagement with one's suffering and decrease avoidant coping that might thwart disclosure (Gilbert et al. 2017), it may promote more active care-seeking strategies in the face of threats to self-worth. Indeed, self-compassion has been linked to the activation of interpersonal schemas of care-giving and care-receiving. In a recent set of correlational studies, Hermanto and colleagues found that greater self-compassion was related to an increased tendency toward care-seeking and greater received social support from others (Hermanto and Zuroff 2016; Hermanto et al. 2017). Unlike attempts to boost self-esteem, efforts at cultivating self-compassion are aimed at alleviating one's own suffering and the aversive feelings (e.g., shame) caused by threats to the self, shifting the emphasis from maintaining feelings of personal adequacy to self-care and support-seeking.

A small number of previous studies have linked self-compassion to distress disclosure specifically. Schellekens et al. (2016) studied patients with lung cancer and their romantic partners and found that for each individual in the couple, their own dispositional level of self-compassion predicted the degree to which they disclosed their emotional experience of the cancer with their partner. In a separate study, trait self-compassion was found to buffer the negative relationship between emotional control and perceived risks of distress disclosure, suggesting that self-compassion may help those who normally have difficulty expressing their emotions be less fearful of negative consequences of emotional disclosure (Heath et al. 2017). While the findings of these studies are promising, they were correlational in nature, relied solely on self-report measures of disclosure, and did not assess the extent to which participants' distressing experiences threatened participants' self-esteem. Therefore, the impact of self-compassion on actual disclosure of self-esteem threatening events remains unknown.

Present Research

Using experimental methods and behavioral measures of disclosure, we sought to test the theory that practicing self-compassion promotes the disclosure of highly self-esteem threatening events, and that the effects of self-compassion on disclosure can be explained by changes in feelings of shame. We hypothesized, first, that participants randomly assigned to a writing exercise aimed at increasing their self-compassion would make longer and more revealing disclosures about a self-esteem threatening event than those assigned to two comparison conditions: a self-esteem enhancing writing exercise and a free writing exercise. The free writing condition was included to control for benefits of elaborated writing or thinking about the experience in general (see Pennebaker 1997). Second, we hypothesized that the effects of self-compassion on enhancing disclosure would be mediated by reductions in shame.[1]

Method

Participants

All participants were undergraduate students recruited from the psychology subject pool of a large Canadian university. As remuneration, they received bonus credits towards a psychology course in addition to five Canadian dollars. Given that previous research has demonstrated the impact of gender (both of the discloser and the listener) on self-disclosure (Dindia 2002), the present study included only female participants so that all participants were aware that they would be disclosing to a same-sex conversation partner.

[1] A previously published article on this sample investigated the role of self-compassion in reducing the link between fears of compassion and perceived risks of disclosure (Dupasquier et al. 2018). In contrast, the present study examined the impact of self-compassion on actual disclosure for self-esteem threatening events and the role of a potential mediator (shame).

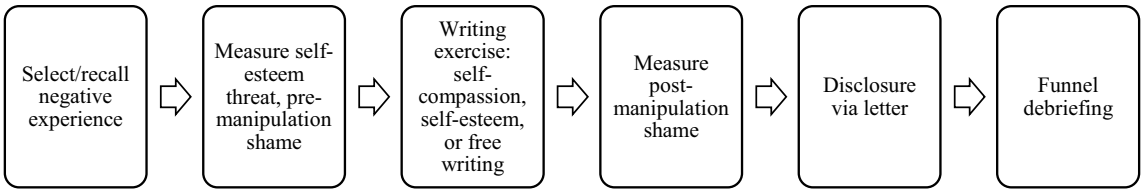

Fig. 1 Flow of experimental procedures

A power analysis using G*Power (version 3.1; Faul, Erdfelder, Buchner, and Lang 2009) indicated that detecting a medium-sized effect of condition (Cohen's $f^2 = 0.15$) with adequate power ($\beta = 0.80$) would require a minimum sample size of 68. Previous research has demonstrated that to achieve adequate power in mediational analyses using bias-corrected bootstrap methods where coefficients for the paths that contribute to the indirect effect are medium-sized, the estimated sample size required is 71 (Fritz and MacKinnon 2007). To account for dropout and possible exclusions, we recruited 111 participants, and 90 completed the study. Of these, five participants were excluded from analyses due either to suspicion of deception (see "Procedure" section for details) or an inability to select a negative experience meeting study criteria. The final sample consisted of 85 participants ($M_{age} = 20.14$, $SD = 2.28$), 35 (41.2%) of whom identified as Caucasian, 16 (18.8%) as East Asian, 14 (16.5%) as South Asian, five (5.9%) as Southeast Asian, two (2.4%) as West Indian/Caribbean, two (2.4%) as Middle Eastern, two (2.4%) as Black/African, one (1.2%) as Hispanic, and four (4.7%) did not identify their ethnicity. Twenty-nine participants were in their first year of undergraduate studies (34.1%), 13 were in their second year (15.3%), 20 were in their third year (23.5%), 15 were in their fourth year (17.6%), and seven were in their fifth year or above (8.2%). Data were missing for one participant's level of education.

Procedure

See Fig. 1 for a visual representation of the flow of experimental procedures. Informed consent was obtained from all individual participants included in the study. Participants were asked to select a negative experience that (a) occurred during the past 5 years (b) presently made them feel badly about themselves (i.e., posed a threat to their self-esteem) (c) involved failure, humiliation, and/or rejection, and (d) they had not previously disclosed in detail. For ethical purposes, participants were instructed not to select any experiences that involved criminal activity, neglect, abuse (physical or sexual), or trauma. Next, participants were asked a number of open-ended questions about their selected experience to ensure vivid recall. They were also asked to rate the degree to which the event currently threatened their feelings of self-worth and current feelings of shame.

Subsequently, participants were randomly assigned to complete one of three experimental writing manipulations: (a) a self-compassion exercise (b) a self-esteem boosting exercise, or (c) a free writing exercise. These manipulations were modeled after the writing exercises developed by Leary et al. (2007, study 5). Previous studies have demonstrated that with similar manipulations, the self-compassion condition resulted in increased state self-compassion as compared to the two other conditions (Breines and Chen 2012; Seekis et al. 2017) and the self-esteem condition uniquely resulted in increased self-esteem (Seekis et al. 2017). Participants were informed that the exercise was meant to relieve negative feelings stemming from their selected experience. Although they could write for as long as they chose, we attempted to standardize the approximate time participants wrote by asking them not to exceed 10 min on the exercise.

After the writing exercise, state shame was measured once more. Participants were then provided with a cover story that allowed us to assess the impact of our manipulations on distress disclosure. They were informed of the potential benefits of distress disclosure and told that they would have the opportunity to engage in a supportive conversation with another female participant as an additional method of coping, beginning with writing a letter describing their negative experience to this conversation partner, who would also be sharing a personal letter with them. Researchers emphasized that participants should share only what they wished with their partner, which included the option to disclose nothing at all. Participants would then exchange letters, and subsequently meet to discuss. They were told this procedure was necessary to ensure that the act of meeting in-person would not result in coerced disclosure. Although no strict time limits were imposed, participants were again advised that writing their letter should take no longer than 10 min.

After participants completed their letters, the study was terminated. Their letters were not actually read by other participants, and no interaction took place. Researchers conducted a funnel debriefing procedure to probe for suspicion regarding deception. This debriefing progressed from open-ended questions (e.g., "Did anything seem strange or

odd to you?") to more specific, closed-ended questions (e.g., "How much did you believe you would actually be meeting another participant to share your experience on a scale from 0 to 100?"). Participants who fully doubted the existence of their conversation partner were excluded from analyses ($n=4$). Finally, participants were fully debriefed and given the chance to raise questions or concerns.

The procedures outlined in the present paper were reviewed and approved by the university's institutional review board and met the ethical standards of the Canadian Tri-Council policies on ethical conduct for research involving humans.

Experimental Conditions

Prompts for the self-compassion condition were designed to target the three components of self-compassion as defined by Neff (2003): (a) self-kindness ("…write a paragraph expressing kindness, understanding, and concern toward yourself"), (b) mindfulness ("…write about the event in a detached, objective fashion"), and (c) common humanity ("…write down ways in which other people also experience events that are similar to the one you described").

The prompts for the self-esteem condition aimed to enhance or preserve the participant's self-esteem by encouraging: (a) a focus on personal strengths ("…write down your positive characteristics and indications that you are competent and valuable"), (b) defensive attributions ("…write a paragraph about the experience, explaining how what happened was not your fault"), and (c) the recall of past successes ("…write a paragraph about a time when you were in a similar situation and you did something that made things turn out better").

In the free writing condition, prompts directed participants to "…really let go" and explore their deepest (a) thoughts, (b) feelings, and (c) beliefs about the experience.

Additional methodological and data analytic details are available in Online Resource 1.

Measures

All questionnaires were administered via Qualtrics™, an online survey tool based in the US. See Supplementary Materials (Online Resource 1) for information about adherence, engagement, credibility checks, and negative affect experienced in relation to event recall, as well as participants' trait levels of self-compassion and self-esteem, none of which differed significantly between conditions.

Self-Esteem Threat

To assess how self-esteem threatening participants' recalled event was, they responded to the single item, "Right at this moment, how badly does this experience make you feel about yourself?" on a visual analogue scale ranging from 0 ("Not at all") to 100 ("Very badly").

State Shame

The State Shame and Guilt Scale (SSGS; Marschall et al. 1994) assesses present-moment feelings of shame, guilt, and pride. The current study was only concerned with the shame subscale consisting of five items (e.g., "I want to sink into the floor and disappear") rated on a 5-point Likert type scale. Cronbach's alphas were 0.82 and 0.88 at pre- and post-manipulation, respectively, indicating good internal consistency.

Distress Disclosure

Disclosure Depth

Two independent research assistants, blind to condition, rated the level of disclosure in participants' letters on four items. These were created for the purposes of the present study based on rating scales from previous disclosure research (Barak and Gluck-Ofri 2007; Houghton and Joinson 2012) and on Omarzu's theory of self-disclosure (2000), and assessed: (a) detail [i.e., descriptions of what happened (e.g., who, what, when, where)]; (b) intimacy (i.e., revealing something about themselves or their personal/subjective experience); (c) expression of negative emotions (i.e., revealing negative feelings they had/have about the experience); and (d) expression of negative thoughts (i.e., revealing negative interpretations of or attitudes towards the experience). Ratings were made on a scale from 1 ("Reveals very little/not at all") to 5 ("Reveals a great deal"). The raters were trained for reliability using a set of example letters. A two-way mixed model for average-measure intraclass correlation coefficients (ICC) indicated good interrater reliability ($ICC=0.84–0.91$); therefore, an average rating was created for each item collapsing across the two coders. Furthermore, as all four items were highly intercorrelated ($r=0.45–0.87$) and had good internal reliability ($\alpha=0.87$), a composite score of overall disclosure depth was created by taking the mean of the four items.

Disclosure Length

As a second objective measure of distress disclosure, we examined how well-elaborated participants' written letters were by calculating total letter word count using the *Linguistic Inquiry and Word Count: 2015* (LIWC2015; Pennebaker et al. 2015) software.

Table 1 Means and standard deviations of study variables across conditions

	Self-compassion ($n=29$)		Self-esteem ($n=30$)		Free writing ($n=26$)	
	Mean	SD	Mean	SD	Mean	SD
Age	20.07	1.78	20.34	2.91	19.96	1.97
Self-esteem threat	61.52	24.01	61.50	17.87	55.92	22.04
Pre-manipulation shame	2.52	1.05	2.25	0.79	2.28	0.94
Post-manipulation shame	1.67	0.92	1.59	0.66	1.94	1.07
Disclosure depth (ratings)	3.16	0.97	3.23	0.87	3.24	0.90
Disclosure length (word count)	163.52	84.65	167.17	72.70	176.88	86.22

Data Analyses

Main analyses were conducted in IBM SPSS Statistics 20 (2011). Multiple regression was used to examine the main effect of condition on disclosure depth, disclosure length, and shame in separate regression analyses. In each analysis, the criterion variable was regressed on two dummy-coded variables, together representing the main effect of condition, where the reference condition (coded as 0 within each dummy variable) was self-compassion. To examine changes in shame in our analyses, residual change scores were computed by saving the unstandardized residuals from regressing post-manipulation shame on pre-manipulation shame.

Results

Data Integrity

The current dataset contained no missing data. No univariate (> 3 *SD*s above or below the mean) or multivariate outliers (Mahalanobis' distance $p<0.001$) were found. Residuals of all analyses appeared normally distributed.

Equivalence of Groups

Descriptive statistics of all variables by condition and zero-order correlations are provided in Tables 1, 2. No significant differences emerged between conditions in mean age ($F(2, 78)=0.20$, $p=0.82$), ethnic background ($\chi^2(20)=24.35$, $p=0.23$), the degree of self-esteem threat posed by participants' negative experiences ($F(2, 82)=0.62$, $p=0.54$), or state shame prior to the writing exercise ($F(2, 82)=0.76$, $p=0.47$).

Main Effects

No significant main effect of writing condition was found for either disclosure depth or length (see Table 3, Model 1). However, there was a significant main effect of writing condition on residual change scores for shame ($\Delta R^2=0.08$, $F(2, 82)=3.62$, $p=0.03$). *T*-tests of the two dummy-variables revealed that the self-compassion condition resulted in significantly larger decreases in shame scores than the free writing condition ($B=0.43$, $SE=0.17$, $p=0.01$), but not the self-esteem condition ($B=0.11$, $SE=0.16$, $p=0.48$). An identical analysis using a third dummy code to replace D2 (D3: self-compassion = 1, self-esteem = 0, free writing = 0) revealed a non-significant difference between the self-esteem and free writing conditions such that the self-esteem condition resulted in larger decreases in shame ($B=-0.32$, $SE=0.16$, $p=0.06$). Since no effect of condition on disclosure was found, a mediation analysis was not conducted.

Post Hoc Analyses

As we were specifically interested in whether cultivating self-compassion would promote the disclosure of highly self-esteem threatening events, we examined participants' reports of how badly they felt about themselves due to the event. Although participants were asked to recall an event that currently made them feel badly about themselves, there was a wide range of ratings on the 0–100 scale of self-esteem (SE) threat ($M=59.80$, $SD=21.30$, range = 97). We therefore used moderated linear regression to investigate SE threat as a moderator variable in our analyses to explore the impact of condition on outcomes at different levels of SE threat. This approach enabled us to examine whether the self-compassion condition would

Table 2 Zero-order correlations between study variables

	1	2	3	4
1. Self-esteem threat				
2. Pre-manipulation shame	.48*			
3. Post-manipulation shame	.19[a]	.71*		
4. Disclosure depth (ratings)	.11	.07	−.01	
5. Disclosure length (word count)	.09	.01	−.12	.84*

*$p<.001$

[a]$p<.10$,

Table 3 Linear regressions for the main and interaction effects of condition and self-esteem (SE) threat on disclosure

	Disclosure depth					Disclosure length				
	B	*SE*	95% CI	ΔR^2	ΔF	*B*	*SE*	95% CI	ΔR^2	ΔF
Model 1				.001	0.06				.005	0.20
D1	0.07	0.24	[−0.40, 0.54]			3.65	0.02	[−38.38, 45.68]		
D2	0.07	0.25	[−0.42, 0.56]			13.37	0.08	[−30.22, 56.96]		
Model 2, step 1				.01	1.06				.01	0.72
SE threat	0.005	0.005	[−0.005, 0.010]			0.36	0.42	[−0.48, 1.19]		
D1	0.07	0.24	[−0.40, 0.54]			3.66	21.16	[−38.45, 45.77]		
D2	0.10	0.25	[−0.39, 0.59]			15.36	22.08	[−28.56, 59.28]		
Model 2, step 2				.15	7.01**				.12	5.53**
SE threat	0.02	0.01	[0.01, 0.03]**			1.56	0.61	[0.35, 2.77]*		
D1	0.09	0.22	[−0.36, 0.53]			5.18	20.14	[−34.91, 45.28]		
D2	0.03	0.23	[−0.43, 0.50]			10.28	21.02	[−31.55, 52.11]		
D1 × SE threat	−0.01	0.01	[−0.03, 0.01]			−0.89	1.00	[−2.89, 1.11]		
D2 × SE threat	−0.04	0.01	[−0.06, −0.02]**			−3.05	0.93	[−4.89, −1.21]**		

D1: self-compassion = 0, self-esteem = 1, free writing = 0;

D2: self-compassion = 0, self-esteem = 0, free writing = 1

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

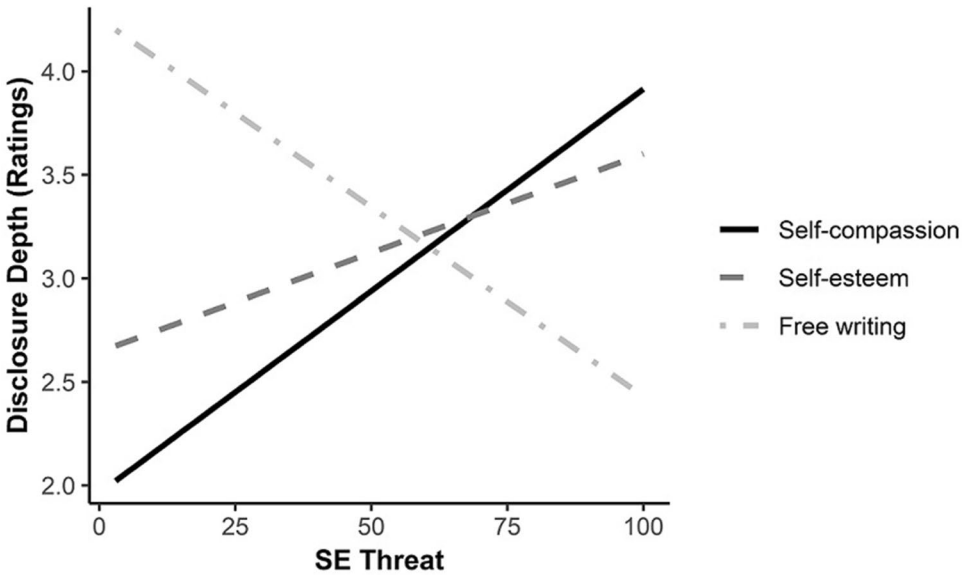

Fig. 2 Estimated disclosure depth as a function of condition and self-esteem threat

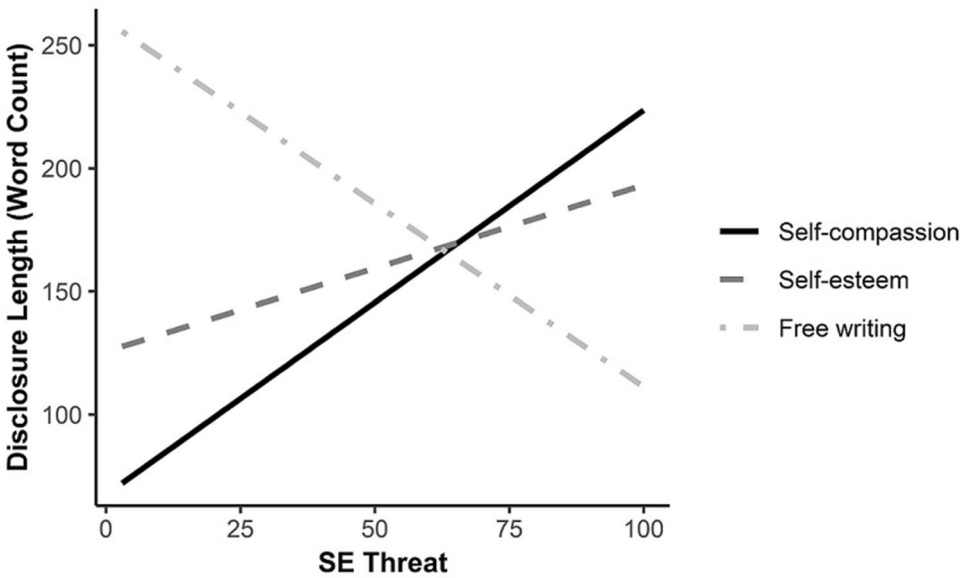

Fig. 3 Estimated disclosure length as a function of condition and self-esteem threat

result in greater self-disclosure of events that were *highly* threatening to participants' self-esteem.

In the first step of the regression, SE threat (grand mean centered) and the two dummy-coded variables were entered to represent the main effects of condition and SE threat. Finally, two interaction terms were entered, together representing the condition by SE threat interaction. To probe this interaction, we used the Johnson-Neyman technique (Bauer and Curran 2005) for identifying regions of significance for the effect of condition at various levels of SE threat with the PROCESS (Hayes 2013) macro. Finally, we tested mediated moderation by conducting a path analysis with IBM AMOS 22 (Arbuckle 2013) to examine the indirect effects of each interaction term through shame (a direct effect and first stage mediated moderation model; see Edwards and Lambert 2007).

Moderated Linear Regression and Follow-Up Analyses

Results of the moderated regression analyses revealed that condition interacted with SE threat to predict both disclosure depth and length (see Table 3, Model 2, Step 2; Figs. 2, 3). *T*-tests of the two interaction terms entered in step 3 revealed that the slopes for SE threat predicting disclosure depth and length in the self-compassion condition were significantly different from the slopes in the free writing condition, but not the self-esteem condition. An identical analysis using a third dummy code to replace D2 (D3: self-compassion = 1,

Table 4 Results of Johnson-Neyman analyses for self-compassion (SC) versus free writing (FW)

SE threat	Point estimate difference (FW − SC)	SE	*t*	*p*	95% CI	
					Lower	Upper
Disclosure depth (coder ratings)						
38.50	0.84	0.31	2.73	.01	0.23	1.45
47.09	0.51	0.26	1.99	.05	0.00	1.03
59.80	0.03	0.23	0.15	.88	−0.43	0.50
76.30	−0.59	0.30	−1.99	.05	−1.18	0.00
81.10	−0.77	0.33	−2.34	.02	−1.42	−0.12
Disclosure length (word count)						
38.50	75.25	27.87	2.70	.01	19.78	130.72
48.17	45.75	22.98	1.99	.05	0.00	91.49
59.80	10.28	21.02	0.49	.63	−31.55	52.11
81.10	−54.69	29.74	−1.84	.07	−113.89	4.50
83.74	−62.73	31.51	−1.99	.05	−125.46	0.00

Estimates are provided for levels of SE Threat corresponding to cutoffs for Johnson-Neyman regions of significance, the sample mean, as well as ± 1SD from the mean

self-esteem = 0, free writing = 0) revealed that the relationship between SE threat and disclosure depth and length also differed significantly between the self-esteem and free writing conditions [depth: $B = 0.03$, $SE = 0.01$, 95% CI (0.004, 0.05); length: $B = 2.16$, $SE = 1.06$, 95% CI (0.05, 4.28)]. See Online Resource 1 for simple slope analyses.

We were next interested in determining at what levels of SE threat the self-compassion and self-esteem conditions would differ significantly from the free writing condition. Accordingly, we used the Johnson-Neyman technique, which derives the values along the continuum of the moderator where the effect of a categorical independent variable is just statistically significant ($p = 0.05$), identifying the regions of significance for the effect. The PROCESS macro allows researchers to use the Johnson-Neyman method in a pairwise fashion to determine the region(s) of significance for each desired contrast [i.e., self-compassion versus free writing, self-esteem versus free writing; for details on this approach, see Hayes and Montoya (2017)].

Results of the Johnson-Neyman analyses demonstrated that participants in the self-compassion condition would be predicted to disclose more than participants in the free writing condition at SE threat scores greater than 76.30 (20.00% of our total data) for disclosure depth, and scores greater than 83.74 (15.29% of our data) for disclosure length. In contrast, participants in the self-compassion condition would be predicted to disclose less than participants in the free writing condition at SE threat scores less than 47.09 (23.53% of our data) for disclosure depth, and scores less than 48.17 (23.53% of our data) for disclosure length. Participants in the self-esteem condition would be predicted to disclose more than those in the free writing condition at SE threat scores greater than 85.76 (10.59% of our data) for disclosure depth, but would not be predicted to provide lengthier disclosures than participants in the free writing condition at any level of SE threat. Conversely, participants in the self-esteem condition would be predicted to disclose less than those in the free writing conditions at SE threat scores less than 24.43 (7.06% of our data) for disclosure depth, as well as scores less than 14.51 (2.35% of our data) for disclosure length. See Tables 4, 5 for additional results of the Johnson-Neyman analyses, including effect sizes.

Mediated Moderation

Next, we examined whether the significant interaction terms—self-compassion versus free writing (D3) and self-esteem versus free writing (D1) by SE threat—would have a significant indirect effect on disclosure outcomes through reduced shame (Edwards and Lambert 2007). Indirect effects were tested using bootstrapping with 10,000 samples and the bias-corrected percentile method for calculating confidence limits of the indirect effect (Shrout and Bolger 2002; Mackinnon et al. 2004). The unstandardized residuals from post-manipulation shame regressed on pre-manipulation shame served as the mediator. No significant indirect effects emerged for either disclosure depth [D3 by SE threat: $B = 0.0002$, $SE = 0.002$, 95% CI (−0.003, 0.006); D1 by SE threat: $B = 0.0003$, $SE = 0.002$, 95% CI (−0.004, 0.006)], or length [D3 by SE threat: $B = 0.18$, $SE = 0.23$, 95% CI (−0.07, 0.94); D1 by SE threat: $B = 0.23$, $SE = 0.27$, 95% CI (−0.07, 1.04)]. See Supplementary Figs. 1 and 2 (Online Resource 1) for path diagrams of the mediated moderation model.

Table 5 Results of Johnson-Neyman analyses for self-esteem (SE) versus free writing (FW)

SE threat	Point estimate difference (FW − SE)	SE	*t*	*p*	95% CI	
					Lower	Upper
Depth ratings						
24.43	0.93	0.47	1.99	.05	0.00	1.86
38.50	0.54	0.33	1.62	.11	−0.12	1.20
59.80	−0.05	0.23	−0.23	.82	−0.51	0.41
81.10	−0.64	0.35	−1.86	.07	−1.33	0.05
85.76	−0.77	0.39	−1.99	.05	−1.55	0.00
Word count						
14.51	103.08	51.79	1.99	.05	0.00	206.16
38.50	51.18	30.24	1.69	.09	−9.01	111.37
59.80	5.10	20.87	0.24	.81	−36.45	46.64
81.10	−40.99	31.35	−1.31	.19	−103.39	21.42
–	–	–	–	–	–	–

Estimates are provided for levels of SE Threat corresponding to cutoffs for Johnson-Neyman regions of significance, the sample mean, as well as ± 1SD from the mean. In the case of Word Count, no cutoff could be identified in which the self-esteem condition would result in significantly greater disclosure than the free writing condition

Discussion

Results of the present study advance our understanding of the strategies that may promote or inhibit disclosure of SE-threatening events. Although the hypothesized main effect of condition on self-disclosure was not supported in our primary analyses, a set of post hoc analyses showed that the impact of self-compassion on distress disclosure depended on the degree to which participants' self-worth was threatened by their recalled negative experience. For participants whose selected events were highly threatening to their self-esteem (scoring above the mid-70s on a 100-point scale), writing about the experience self-compassionately encouraged deeper and lengthier disclosures to a stranger than did writing about it in a nondirective way. Furthermore, participants who wrote about their experience in a self-esteem boosting way did not differ in disclosure depth or length from those who practiced self-compassion regardless of how SE-threatening their negative experience was, and both writing exercises resulted in similar reductions in shame. However, whereas participants in the self-compassion condition disclosed high SE threat experiences in greater depth and length than those in the free writing condition, participants in the self-esteem condition tended to disclose high SE threat events (rated above the mid-80s) in more depth—and not length—than those in the free writing condition. Thus, self-compassionate writing appeared to promote deeper *and* longer disclosures for highly self-esteem threatening events and exerted significant effects at a lower threshold of SE threat as compared to the self-esteem enhancing exercise.

Our results suggest that adopting a self-compassionate mindset or repairing self-esteem may facilitate openness regarding events that pose a strong threat to self-worth. Given that these experiences are also likely to be most distressing (Barlow et al. 2017; Tangney and Tracy 2012), they may be the very events for which distress disclosure is needed most. If an individual is overwhelmed by the threat to such an extent that self-regulation does not suffice, practicing self-compassion or repairing self-esteem could allow people to garner the support they need to prevent such events from having a lasting impact on psychological health.

Interestingly, when SE threat was low, those who engaged either in the self-compassion exercise or the self-esteem boosting exercise tended to disclose in less depth and length than participants in the free writing condition. One possible explanation of these results is that for low SE threat events, participants who received either self-compassion or self-esteem boosting instructions were able to cope adequately through their writing exercise and therefore felt less need to disclose than those in the free writing condition. Any future studies aiming to replicate the present findings should investigate this and other possible explanations.

Post-manipulation changes in shame did not mediate the moderated effects of condition on distress disclosure. It is possible that participants' recall of their selected events elicited different self-conscious emotions, such as embarrassment, that may have been affected by the writing exercises and linked more closely to their disclosure behaviors. Methodological issues may have also contributed to these null findings. The present sample size was determined based on the planned main-effect and mediational analyses, and thus the more complicated post hoc moderation and mediated moderation analyses may have been underpowered. In addition, participants were asked to rate their *general feelings*

of shame following the writing exercise, rather than their state shame in relation to their selected negative experience. These instructions could have resulted in shame ratings that were loosely linked to participants' feelings about the event and the prospect of disclosing it to another person. Replications of the present research should correct for these issues before ruling out reductions in shame as a possible mechanism.

The present study had a number of additional limitations. First, the moderation findings were the result of post hoc analyses. As it was not originally intended to serve as a moderator, the SE threat variable consisted of a single item assessing the impact of participants' selected experience on their negative self-related feelings. While face-valid, the present findings require replication using an established measure validated through prior research. Second, our relatively small sample was limited to female undergraduates. Future research should aim to replicate these findings with larger and more diverse samples whose self-esteem threatening experiences may be more variable. Third, the present study used a brief writing exercise without assessing longer-term effects, leaving open the question of whether such exercises would have a lasting impact on future disclosures after newly experienced distressing events. Fourth, despite its merits, our experimental study placed participants in a relatively contrived disclosure situation, thus limiting the external validity of our results. Although our debriefing procedure indicated that participants believed they would be disclosing to a peer, whether the present results would translate to face-to-face disclosures with close others or mental health professionals in the context of participants' daily lives remains to be tested. Fifth, the finding that the self-esteem enhancing exercise did not result in longer disclosures as compared to the free writing condition could be the result of type II error rather than a true difference in the effect of this intervention versus the self-compassion intervention. Adequately powered replications of the present findings could help lend additional insight into this possibility.

In addition to the limitations presented above, it is unclear whether the self-compassion and self-esteem enhancing conditions uniquely targeted their respective constructs as intended. One possible interpretation of the results is that there were spillover effects of the manipulation, where inducing self-compassion may have enhanced self-esteem or vice versa. However, similar writing manipulations have been found to differentially target self-compassion and self-esteem (Breines and Chen 2012; Seekis et al. 2017), suggesting an alternative possibility that self-compassion and self-esteem represent two distinct pathways to regulating self-esteem threat and disclosure. Furthermore, given the three-pronged nature of the writing exercise, it would be interesting to determine which components of self-compassion (i.e., self-kindness, mindfulness, or common humanity) might account for the effects of the self-compassion condition. Additional studies are necessary to replicate these findings, further investigate the mechanistic underpinnings of the writing interventions, and compare and contrast the self-compassion and self-esteem enhancing approaches.

Conclusions

To our knowledge, the present study is the first to suggest that both cultivating self-compassion and repairing self-esteem can increase the actual depth and amount of information shared during the act of distress disclosure for self-esteem threatening experiences. Further research is needed to improve upon our methods, continue to investigate causal mechanisms, and work toward clarifying whether and how the effects of self-compassion on self-disclosure may or may not differ from those of self-esteem enhancement.

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Data Availability The datasets generated during and/or analysed during the current study are available from the corresponding author upon request.

Compliance with Ethical Standards

Conflict of Interest Jessica R. Dupasquier, Allison C. Kelly, David A. Moscovitch, and Vanja Vidovic declare that they have no conflict of interest.

Informed Consent All procedures performed in studies involving human participants were in accordance with the ethical standards of the institutional and/or national research committee (the University of Waterloo Human Research Ethics Committee, reference #20934) and with the 1964 Helsinki declaration and its later amendments or comparable ethical standards.

Animals Rights No animal studies were carried out by the authors for this article.

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