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The effectiveness of self-compassion and self-esteem writing tasks in reducing body image concerns

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ABSTRACT

This study investigated whether single-session self-compassion and self-esteem writing tasks ameliorate the body image concerns evoked by a negative body image induction. Ninety-six female university students aged 17–25 years (M_{age} = 19.45, SD = 1.84) were randomly assigned to one of three writing treatment groups: self-compassion, self-esteem, or control. After reading a negative body image scenario, participants completed scales measuring state body appreciation, body satisfaction, and appearance anxiety. They then undertook the assigned writing task, and completed the three measures again, both immediately post-treatment and at 2-week follow-up. The self-compassion writing group showed higher post-treatment body appreciation than the self-esteem and control groups, and higher body appreciation than the control group at follow-up. At post-treatment and follow-up, self-compassion and self-esteem writing showed higher body satisfaction than the control. The groups did not differ on appearance anxiety. Writing-based interventions, especially those that enhance self-compassion, may help alleviate certain body image concerns.

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1. Introduction

Within industrialised Western societies, the thin physique has become such a prevalent and pervasive ideal beauty standard that the term "normative discontent" (Rodin, Silberstein, & Striegel-Moore, 1985) was coined to describe the negative affect women experience when they feel they have not achieved this ideal. Body image concerns appear to be common among female undergraduates as they negotiate the challenges of new social demands in a competitive environment (Lowery et al., 2005). Research shows that 87% of female undergraduates within normal BMI range desire to weigh less (Neighbors & Sobal, 2007), and that almost all female undergraduates speak negatively about the size and shape of their bodies, with about 30% doing so frequently (Salk & Engeln-Maddox, 2011).

In contemporary society, young women are frequently exposed to live, vicarious, and virtual images that might represent threats to their body image (Cash, 2002; Tiggemann, 2001). These appearance-related threats have the potential to evoke body image concerns including increases in negative body image and/or decreases in positive body image. One aspect of negative body image that may be evoked during an appearance-related threat is a reduction in one's state body satisfaction, or a momentary decrease in the evaluative/affective attitude toward one's body or parts thereof (Cash, Fleming, Alindogan, Steadman, & Whitehead, 2002). Another aspect that may be exacerbated is state appearance anxiety, defined as a state of uneasiness or apprehension about one's body parts falling short of culturally-defined beauty standards (Reed, Thompson, Branick, & Sacco, 1991).

Positive body image is not simply low levels of negative body image. It is a multifaceted construct that is flexible, holistic, and protective, and moves beyond simple appearance evaluation and satisfaction to include respecting, honouring, loving, and accepting the body, including its unique characteristics that differ from societal appearance ideals (Tylka & Wood-Barcalow, 2015; Wood-Barcalow, Tylka, & Augustus-Horvath, 2010). However, qualitative research suggests that in the short-term, positive body image may not always protect against body image-related threats (Wood-Barcalow et al., 2010). One facet of positive body image that may decrease during an appearance-related threat is state body appreciation (Halliwell, 2015), defined as momentary acceptance of, respect for, and gratitude toward one's body (Homan, 2016; Tylka & Wood-Barcalow, 2015).

Body image concerns are known risk factors for disordered eating behaviours, clinical eating disorders, and mood disorders (Peat & Muehlenkamp, 2011; Stice, Marri, & Durant, 2011). Given the seriousness of these outcomes for young women, strategies aimed

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at ameliorating body image concerns are needed. This study set out to examine the effects of two such strategies, both of which involved writing exercises intended to reduce negative body image and enhance positive body image following a negative body image induction. Both writing tasks targeted beliefs/attitudes regarding the self, on the basis of evidence showing that body image and self-concept are closely, and likely reciprocally, related, especially in young females (Harter, 1999; Wichstrøm & Von Soest, 2016).

1.1. Self-compassion

The first of the two strategies aims to promote the adoption of a self-compassionate perspective. Research suggests that self-compassion is related to many aspects of psychological well-being (Neff & Vonk, 2009) via its negative associations with anxiety and depression (Johnson & O'Brien, 2013; Neff, Kirkpatrick, & Rude, 2007) and its positive associations with happiness and optimism (Neff et al., 2007; Smeets et al., 2014). Neff (2003) defines self-compassion as a way of relating to oneself, entailing three interacting components: (a) self-kindness, which refers to a caring perspective towards oneself through unconditional self-acceptance in an attempt to overcome harsh self-criticism; (b) common humanity, which refers to an acceptance of personal flaws or difficult life circumstances as part of a shared human condition; and (c) mindfulness, which offers awareness and acceptance of a negative experience in a balanced manner that helps prevent rumination.

The acceptance and kindness towards one's imperfections that are inherent within a self-compassionate perspective highlight the role that this perspective can play in addressing the challenges posed by appearance-related threats (see Albertson, Neff, & Dill-Shackleford, 2015; Toole & Craighead, 2016; Wasylkiw, MacKinnon, & MacLellan, 2012). Previous correlational studies have shown that self-compassion and body satisfaction covary in female undergraduates (Kelly & Stephen, 2016), and that university female athletes who are high in self-compassion report fewer instances of distress associated with the perception of how others evaluate one's physique (Koç & Ermiş, 2016). Experimental studies have examined the effects of self-compassion meditation on body dissatisfaction in adult women (Albertson et al., 2015) and body image distress in female undergraduates (Toole & Craighead, 2016). Albertson et al. (2015) found that, compared to a wait-list control group, a group trained in self-compassion meditation showed reduced body dissatisfaction and increased body appreciation, and these effects were maintained at a 3-month follow-up. Toole and Craighead (2016) also found self-compassion intervention participants to show higher body appreciation than wait-list controls, although they observed no significant differences in body dissatisfaction (possibly due to low statistical power).

Authors of both studies indicated that engagement in self-compassion meditation was effortful for many participants, suggesting that alternative means of inducing a self-compassionate mindset are needed. Evidence shows that writing tasks are also efficacious at producing positive psychological effects (e.g., Leary, Tate, Adams, Allen, & Hancock, 2007; Shapira & Mongrain, 2010) including positive body image (Alleva, Martijn, Van Breukelen, Jansen, & Karos, 2015). Therefore, the current study assessed the efficacy of a writing-based task aimed at inducing a self-compassionate perspective as a means of dealing with challenges faced after exposure to appearance-related threats.

1.2. Self-esteem

The second strategy currently under investigation sought to promote participants' self-esteem or overall evaluation of self-worth (Harter, 2000). Although the direction of any causal associations between self-esteem and body image has yet to be established (Wichstrøm & Von Soest, 2016), the existence of a robust link between these variables has provided the basis for the development of self-esteem based interventions for the prevention of body image concerns (O'Dea, 2004). For example, in O'Dea's (1995) Everybody's Different program, students focus on developing their sense of self-worth by embracing multiple aspects of the self to help decrease the importance of appearance. The program showed significant improvements in body image for female students.

Self-esteem enhancement interventions, however, have shown mixed findings. Some studies show improvements in body dissatisfaction, dietary restraint, and shape and weight attitudes (McVey et al., 2003; Norwood, Murray, Nolan, & Bowker, 2011; O'Dea & Abraham, 2000), while others show no differences between intervention and control groups on such body image variables (Ghaderi, Mårtensson, & Schwan, 2005; McCabe, Ricciardelli, Salmon, 2006; McVey & Davis, 2002). Indeed, researchers have argued that self-esteem based on physical appearance—where it requires constant validation or favourable comparison with others—may be continually threatened (Harter, 2000; Lowery et al., 2005; Neff, 2011). In particular, individuals with appearance contingent self-esteem may ruminate on negative body image incidents, thus becoming more vulnerable to negative body image (Neff, 2011). The mixed findings suggest that continued consideration of self-esteem interventions is warranted, with a particularly important goal being to ensure that its effects are assessed independently of self-compassion.

1.3. Self-compassion and self-esteem compared

Self-esteem based programs usually incorporate self-acceptance themed activities—a core component of self-compassion—and this makes it difficult to establish whether successful outcomes are due to self-esteem alone. For example, Leary et al. (2007, in Study 2) compared self-esteem and self-compassion as strategies in imagined stressful scenarios, and found that self-compassion uniquely predicted behavioural calmness in all three scenarios, whereas self-esteem did not predict calmness in any of the scenarios. Although previous research showed that self-compassion and self-esteem were moderately correlated (Neff, 2003), Leary et al. (2007) suggested that self-compassion reflected not only positive self-evaluations, but also a kinder and more balanced approach to difficult situations. Leary et al. (2007) also noted that, had they only measured self-esteem, they would have attributed the effects to self-esteem, unaware that self-compassion may have been the underlying factor at play.

A follow-up study (Study 5) by Leary et al. (2007) compared the effects of writing tasks aimed at inducing state self-compassion or state self-esteem on recall of personal painful events. Wording of the prompts used in the writing tasks was based on (a) the three facets that comprise self-compassion, and (b) the tactics people use when protecting their self-esteem, such as self-affirmations and defensiveness. Results indicated that self-compassion, but not self-esteem, was uniquely related to lower negative affect.

1.4. The current study

Past research has documented the therapeutic benefits of planned writing exercises (Alleva et al., 2015; Leary et al., 2007), yet no prior study has investigated, or sought to compare, the impact on body image concerns of writing exercises aimed at promoting self-compassion and self-esteem. The current study makes important contributions in these respects. Central to the design of this study was the notion that exposure to image-related threats may evoke body image concerns (i.e., reduced state body appreciation and state body satisfaction, and heightened state appearance anx-

iety), which subsequently need to be ameliorated. Following Leary et al.'s (2007) methodology, the study thus exposed participants to an imagined distressing body image scenario and tested the impact of self-compassion and self-esteem writing tasks on measures of state positive and negative body image. We expected that a writing task that induced self-compassion would be more efficacious, both immediately and at two-week follow-up, in reducing body image concerns than would one aimed at self-esteem enhancement, and that both these treatments would be more efficacious than a control writing task. Thus, we hypothesised that at post-treatment and 2-week follow-up: (H1) Self-compassion writing would produce (a) higher state body appreciation, (b) higher state body satisfaction, and (c) lower state appearance anxiety than self-esteem and control writing; and (H2) Self-esteem writing would produce (a) higher state body appreciation, (b) higher state body satisfaction, and (c) lower state appearance anxiety than control writing.

2. Method

2.1. Participants

The sample comprised 96 first-year female psychology students, aged 17–25 years (M_{age} = 19.45, SD = 1.84), at an urban Australian university. Most participants were born in Australia (67.7%), with the remainder born in New Zealand (7.3%), Europe (8.3%), Asia (6.3), North America (5.2%), and Africa (4.2%), and 85% of participants reported English as their first language. More than half (55.2%) were single. Students participated to gain partial course credit. University ethics approval was granted prior to commencement.

2.2. Procedure

Data collection occurred in face-to-face lab sessions run by the same female researcher over a 6-week period. Between five and 15 participants attended each session. Instructions were given to groups as a whole, but privacy was ensured with ample space allowed for each participant while they responded on their own questionnaire booklet. No interaction between participants was permitted.

To ensure random assignment, participants were issued a paper dot printed in one of three colours (purple, yellow, pink), and asked to choose a seat where a booklet with a corresponding coloured dot was placed. Each colour represented one condition (e.g., all purple dots were for the self-esteem condition). Participants were informed that the study was about attitudes to body image incidents. After providing consent, all participants created a personal code to enable matching of data across time points, and to ensure anonymity. All participants read the same hypothetical scenario, and were asked to imagine themselves as the female protagonist who was described as having viewed unflattering photographs of herself that had been posted on social media by a friend. Participants completed three pre-treatment state body image measures and then undertook one of three writing tasks (self-compassion, self-esteem, or control), each of which had three components. Each of these three components involved writing for five minutes in accord with a set of prompts that differed between experimental conditions (15 min in total). The prompts were based on those used by Leary et al. (2007) and (except in the control condition) were adapted to fit the negative body image scenario. The researcher timed participants' writing and ensured all participants wrote for the full five minutes.

Following the writing tasks, all participants completed questionnaire items assessing manipulation efficacy and believability of the scenario. Questionnaire booklets were then collected, and participants completed the same three body image scales as at pre-treatment. After post-treatment measures had been taken, participants were issued sealed envelopes with follow-up paper questionnaires that contained the same three body image measures, and were requested to await further instructions via email. Two weeks later, on the day it was due, participants were emailed instructions to open the sealed envelope and complete the questionnaire. Participants were given up to three days to return these questionnaires in person to an administrative office. Most were returned within one day.

2.2.1. Writing tasks

Each prompt in the self-compassion condition was designed to induce one of the three positive elements of self-compassion. For common humanity, participants were asked to (a) "List as many ways as you can think of in which other girls also judge their image, or feel inadequate in some way about how they look." To promote mindfulness, participants were asked to (b) "Re-write the scenario from a more balanced perspective *without* engaging in any negative self-judgement." To encourage self-kindness, participants were asked to (c) "Write a letter to yourself expressing understanding, kindness and concern. Write in a way you might express concern to a close friend who experienced a similar event."

The three prompts in the self-esteem condition were: (a) "List your positive characteristics – indications that you are competent and valuable"; (b) "Write a paragraph interpreting the event in a way that makes you feel better about yourself. What would you avoid to prevent this sort of thing happening again?"; and (c) "Describe why an unflattering photo of yourself does not really indicate anything about the kind of person you are."

To control for the possibility that writing by itself could affect body image, participants in the control condition responded to the following three prompts relating to academic topics: (a) "List the subjects you did in your final year of high school. Which did you like or dislike and why?"; (b) "Discuss which psychology classes you have enjoyed so far and why? Is psychology something you would like to pursue as a career?"; and (c) "Describe the last assignment you did, whether it was at university or high school. What was the aim, how did you research it, and what did you discover?"

2.2.2. Inter-rater reliability of writing tasks

To assess whether the written responses aligned with the given prompts, two raters were provided with general descriptions of the prompts for each group (without the condition being specified) and were asked to assess, in two different ways, the same set of 10 randomly selected written responses from each of the three groups. First, raters indicated on a 6-point *strongly disagree* to *strongly agree* scale whether each written piece reflected the prompt the participant had received. A count was then made of the percentage of written pieces (out of 30) that were scored correctly and identically by the two raters. Second, raters indicated to which of the three conditions they thought the author of each of the 30 written pieces had been assigned. Raters' correct responses were summed and converted to a percentage of all their responses.

2.2.3. Attention check items

To screen out respondents who were not paying attention to the questions, two items directed respondents to give a specified answer on a provided response scale. A sample item is "Please circle 1 for this question." These items were embedded into pre-treatment, post-treatment, and follow-up questionnaires.

2.2.4. Manipulation efficacy

The efficacy of the self-compassion manipulation was assessed by three items based on the three positive facets of self-compassion: common humanity, self-kindness, and mindfulness (Neff, 2003). A sample item is, "If I felt bad about my appearance, I

would try to remind myself that these sorts of feelings are shared by most people." Internal consistency was adequate ($\alpha = .79$). The efficacy of the self-esteem manipulation was assessed by three items based on Rosenberg's Self-Esteem Scale (Rosenberg, 1965). A sample item is, "I feel I have many positive characteristics, regardless of how I look." Internal consistency was adequate ($\alpha = .71$). Responses within each manipulation check scale were averaged, with high scores indicating high levels of appearance-related self-compassion and appearance-related self-esteem, respectively.

2.2.5. Believability check

Based on Wilson and McNamara (1982), a three-item measure assessed the perceived realism of the scenario (e.g., "I think there are situations like this in real life where a female dislikes unflattering photos of herself"), the adequacy of the portrayal (e.g., "As a portrayal of what a female could experience when comparing herself to peers in group photos, the scenario was believable"), and the participants' capacity to assume the role of the female (e.g., "I was able to adopt the role of the female portrayed in this scenario"). Responses were averaged, with high scores indicating high levels of scenario believability.

2.3. Measures

2.3.1. State Body Appreciation Scale-2 (SBAS-2; Homan, 2016)

The SBAS-2 is a 10-item scale used to assess the extent to which women momentarily: (a) hold favourable opinions of their bodies; (b) accept their bodies in spite of their imperfections; (c) respect their bodies by attending to their body's needs and engaging in healthy behaviours; and (d) protect their body image by rejecting unrealistic thin-ideal media images. A sample item is "Right now. . . I feel like I am beautiful even if I am different from media images of attractive people (e.g., models, actresses/actors)". Responses range from 1 (*Strongly Disagree*) to 5 (*Strongly Agree*). Scores are summed with high scores reflecting high state body appreciation. Convergent validity for the SBAS-2 is shown through positive associations between state body appreciation and transient feelings about the body and its appearance, as well as a positive association with state body satisfaction (Homan, 2016). Homan also found this scale to be sensitive to imagined situational contexts, and reported excellent internal consistency ($\alpha = .97$). Internal consistency for the current study was high at pre-treatment ($\alpha = .94$), post-treatment ($\alpha = .94$), and at follow-up ($\alpha = .94$).

2.3.2. Body Image States Scale (BISS; Cash et al., 2002)

This is a six-item measure of individuals' evaluation of, and affect about, their physical appearance at a particular moment in time. The authors found the scale to be sensitive to positive versus negative events, by having participants respond to the BISS following imagined scenarios. The six items refer to dissatisfaction–satisfaction with (a) overall physical appearance, (b) body size and shape, (c) weight, (d) physical attractiveness–unattractiveness, (e) looks relative to how one usually feels, and (f) evaluation of appearance relative to how the average person looks. Responses range from 1 (*Extremely Dissatisfied*) to 9 (*Extremely Satisfied*). Responses are averaged to form a composite score, with high scores reflecting high body satisfaction. Support for validity comes from finding the BISS correlates positively with appearance evaluation and trait body image (Cash et al., 2002). The authors reported high internal consistency ($\alpha = .89$), and adequate test-retest reliability over three weeks ($r = .69$). In the current study, internal consistency was high at pre-treatment ($\alpha = .90$), post-treatment ($\alpha = .90$), and at follow-up ($\alpha = .91$).

2.3.3. The Physical Appearance State and Trait Anxiety Scale – state version (PASTAS; Reed et al., 1991)

This is a 16-item scale used to rate levels of anxiety about one's body or specific body parts "right now." The scale pertains to both weight-related body parts such as thighs, and non-weight-related body parts such as ears. A sample item is "Right now, I feel *anxious, tense,* or *nervous* about: My thighs." The response format ranges from 0 (*Not at all*) to 4 (*Exceptionally so*). Scores are summed, with high scores indicating high state appearance anxiety. Correlations with measures of eating disturbance, body dissatisfaction, physical appearance evaluation, and trait anxiety provide evidence of convergent validity (Reed et al., 1991). The authors reported excellent internal consistency for the state measure ($\alpha = .92$), and test-retest reliability over 2 weeks ($\alpha = .87$). In the current study, internal consistency was high at pre-treatment ($\alpha = .90$), post-treatment ($\alpha = .90$), and at follow-up ($\alpha = .88$).

2.4. Overview of analyses

A series of 3 (group: self-compassion, self-esteem, control) × 2 (time: post-treatment, follow-up) mixed analyses of covariance (ANCOVAs) was conducted to investigate between-group differences in each of state body appreciation, state body satisfaction, and state appearance anxiety, while controlling for pre-treatment levels of the corresponding dependent variable. A priori pairwise comparisons were then conducted to examine whether there were differences between the groups at each time point.

3. Results

3.1. Preliminary analyses

There were no missing data at pre-treatment or post-treatment. Of the 96 pre-treatment and post-treatment participants, 88 returned questionnaires at follow-up. To enable analyses to be performed using data from the full sample, multiple imputation procedures based on 15 randomly generated samples were used to impute values for the dependent variable data that were missing at follow-up.

A one-way multivariate analysis of variance (MANOVA) conducted to assess between-condition variations in state body appreciation, state body satisfaction, and state appearance anxiety at pre-treatment, indicated no significant multivariate effect on the combined dependent variables, $F(6, 182) = 0.57$, $p = .762$, $\eta_p^2 = .02$. Hence, there were no pre-existing differences between the groups suggesting that the randomization procedure was successful at creating equal groups.

3.1.1. Believability of scenario

A one-way ANOVA, with experimental group the only independent variable, assessed possible differences in the believability of the scenario. No significant effect was found, $F(2, 93) = 0.69$, $p = .512$, with all group means >4.74 out of a possible 5, suggesting that all groups found the scenarios equally believable.

3.1.2. Manipulation efficacy

Two separate analyses of variance (ANOVAs) were conducted to examine the efficacy of the writing task manipulations. The independent variable was Group (self-compassion, self-esteem, and control), and the dependent variable was appearance-related self-compassion in the first analysis, and appearance-related self-esteem in the second analysis. There was a significant main effect of Group on self-compassion, $F(2, 93) = 17.81$, $p < .001$, $\eta_p^2 = .28$, with the mean for the self-compassion group ($M = 11.63$, $SD = 2.27$) higher than for the self-esteem group ($M = 8.75$, $SD = 2.65$), $t(62) = 4.80$, $p < .001$, and the control group ($M = 8.34$, $SD = 2.25$),

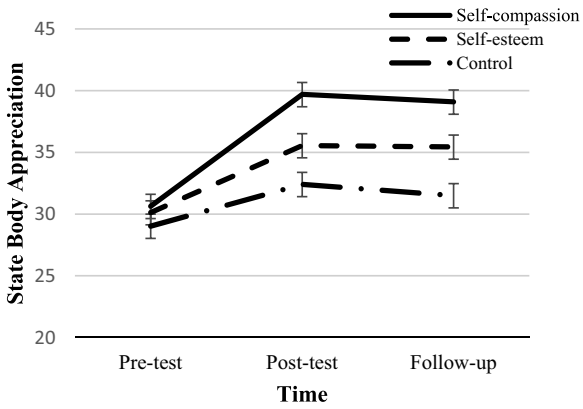


Fig. 1. State body appreciation scores across time for the self-compassion, self-esteem, and control groups. Error bars represent ±1 standard error.

$t(62) = 5.48$, $p < .001$. There was a significant main effect of Group on self-esteem, $F(2, 93) = 12.00$, $p < .001$, $\eta_p^2 = .21$, with the mean for the self-esteem group ($M = 11.50$, $SD = 1.67$) higher than for the self-compassion group ($M = 10.28$, $SD = 2.10$), $t(62) = 2.27$, $p = .021$, and control group ($M = 8.88$, $SD = 2.57$), $t(62) = 2.62$, $p = .013$. Thus, the writing task manipulations were judged successful.

3.1.3. Inter-rater reliability

Two independent raters used a 6-point scale to assess the extent to which each of 30 written pieces reflected the given prompts. Raters gave correct and identical scores for 100% for the control group written responses (academic topics), 97% for the self-esteem responses, and 93% for the self-compassion responses. Overall, there was strong agreement between the two raters, $\kappa = .80$, $p < .001$. Additionally, the raters achieved 100% accuracy when asked to select the group (i.e., self-compassion, self-esteem or control) to which the responses belonged.

3.1.4. Assumptions

Before conducting repeated measures analyses of covariance (ANCOVA), assumptions were examined. Outliers and influential scores were identified via box-plots and assessing Mahalanobis distance values at the $p < .001$ level. Removal of three identified scores did not influence the outcome. Assumptions of linearity as indicated by scatterplots, homogeneity of variance-covariance as indicated by Box's test ($ps > .05$), and equality of error variance as indicated by Levene's test ($ps > .05$), were all met.

3.2. Main analysis

Data were analysed using 3 (group: self-compassion, self-esteem, control) × 2 (time: post-treatment, follow-up) mixed ANCOVAs. Separate analyses were conducted for each dependent variable, with the pre-treatment level of the corresponding variable included as the covariate in each analysis. A priori application of the statistical program G*Power 3.1 (Faul, Erdfelder, Buchner, & Lang, 2009) determined the minimum number of participants, assuming power of .80, and a moderate effect size to be $N = 82$. To reduce the risk of Type I error, a Bonferroni adjustment was applied for all comparisons.

With regard to state body appreciation, the analysis revealed a significant main effect of Group, $F(2, 92) = 13.76$, $p < .001$, $\eta_p^2 = .25$ (see Fig. 1). A priori pairwise comparisons (*M*s and *SD*s can be seen in Table 1) showed that the self-compassion group had higher state body appreciation than the self-esteem group at post-treatment, $t(63) = 2.91$, $p = .014$, $d = 0.65$; however, no significant difference between the groups was found at follow-up, $t(63) = 2.36$, $p = .063$, $d = 0.57$. The self-compassion group also had

Table 1
Means and standard deviations for each group at pre-treatment, post-treatment, and follow-up.

Outcome	Self-compassion ($n = 32$)			Self-esteem ($n = 32$)			Control ($n = 32$)			F^a	η_p^2
	Pre *M* (*SD*)	Post *M* (*SD*)	Follow-up *M* (*SD*)	Pre *M* (*SD*)	Post *M* (*SD*)	Follow-up *M* (*SD*)	Pre *M* (*SD*)	Post *M* (*SD*)	Follow-up *M* (*SD*)	Post-treatment vs. follow-up	
SBAS-2	30.63 (8.45)	39.69 (6.42)	39.09 (5.68)	30.13 (8.99)	35.56 (6.29)	35.45 (6.99)	29.03 (6.50)	32.41 (7.69)	31.50 (7.45)	13.76***	.25
BISS	4.18 (1.59)	5.71 (1.42)	5.90 (1.17)	4.37 (1.28)	5.63 (1.48)	5.84 (1.24)	3.94 (1.49)	4.53 (1.67)	4.70 (1.49)	10.10***	.20
PASTAS	24.69 (12.57)	16.38 (11.66)	13.55 (9.27)	24.66 (11.47)	15.56 (9.60)	14.26 (9.36)	23.81 (10.16)	17.94 (10.11)	18.78 (11.13)	3.15	.06

Note: SBAS-2 = State Body Appreciation Scale-2; BISS = Body Image State Scale; PASTAS = Physical Appearance State Anxiety Scale.
*** $p < .001$.
[a] Mixed between(group)-within(time) ANCOVAs, controlling for pre-treatment levels of the dependent variable. *F* statistic and partial eta^2 for the main effect of group are shown.

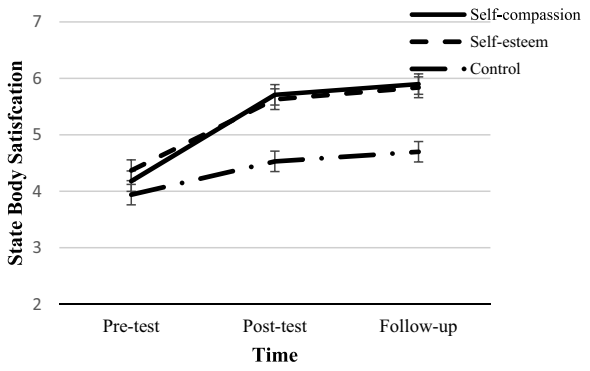


Fig. 2. State body satisfaction across time for the self-compassion, self-esteem, and control groups. Error bars represent ±1 standard error.

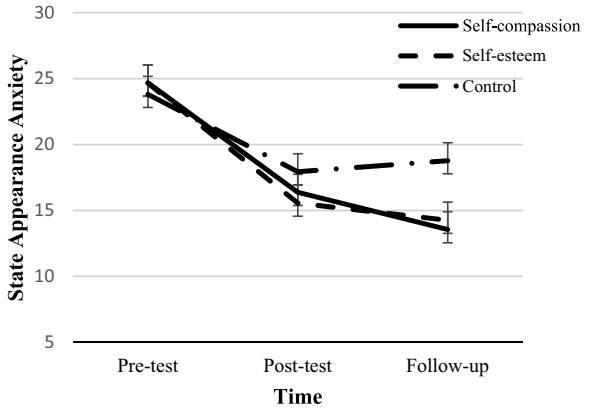


Fig. 3. State appearance anxiety scores across time for the self-compassion, self-esteem, and control groups. Error bars represent ±1 standard error.

significantly higher state body appreciation than the control group at post-treatment, $t(63) = 4.83$, $p < .001$, $d = 1.03$, and at follow-up, $t(63) = 4.75$, $p < .001$, $d = 1.15$. In contrast, the self-esteem group did not have significantly higher state body appreciation than the control group at post-treatment, $t(63) = 1.93$, $p = .169$, $d = 0.49$, or at follow-up, $t(63) = 2.39$, $p = .061$, $d = 0.55$. There was no main effect of Time, $F(1, 92) = 1.97$, $p = .191$, $\eta_p^2 = .02$, nor was there a significant Group × Time interaction, $F(2, 92) = 0.38$, $p = .690$, $\eta_p^2 = .008$.

With regard to state body satisfaction, results showed a significant main effect of Group, $F(2, 92) = 10.10$, $p < .001$, $\eta_p^2 = .20$ (see Fig. 2). A priori pairwise comparisons (see Table 1 for *M*s and *SD*s) indicated that both the self-compassion and self-esteem groups had higher state body satisfaction than the control group at post-treatment, $t(63) = 3.51$, $p = .002$, $d = 0.76$, and $t(63) = 2.76$, $p = .021$, $d = 0.70$, respectively. Similar results were found at follow-up where both the self-compassion and self-esteem groups showed higher state body satisfaction than the control group, $t(63) = 3.74$, $p = .002$, $d = 0.90$, and $t(63) = 3.55$, $p = .002$, $d = 0.83$, respectively. There was no significant difference between the self-compassion and self-esteem groups at post-treatment, $t(63) = .74$, $p = 1.00$, $d = 0.06$, or at follow-up, $t(63) = .08$, $p = 1.00$, $d = 0.05$. There was a significant main effect of Time, $F(1, 92) = 15.22$, $p < .001$, $\eta_p^2 = .14$, with higher scores on body satisfaction at follow-up than post-treatment. However there was no significant Group × Time interaction, $F(2, 92) = 0.46$, $p = .631$, $\eta_p^2 = .01$.

For appearance anxiety (see Table 1 for *M*s and *SD*s), there was no main effect of Group, $F(2, 92) = 3.15$, $p = .053$, $\eta_p^2 = .064$ (see Fig. 3), or Time, $F(1, 92) = 0.52$, $p = .526$, $\eta_p^2 = .006$, nor was there a significant Group × Time interaction, $F(2, 92) = 1.74$, $p = .215$, $\eta_p^2 = .04$. Thus, no further analyses for this variable were conducted.

4. Discussion

Threats to body image are common in the mass and social media of many contemporary societies. To mitigate the adverse psychological impacts of these threats, brief, inexpensive, and effective intervention strategies are needed. The current study investigated the efficacy of two 15-min writing tasks in enhancing state body appreciation and body satisfaction, and in reducing state appearance anxiety, following a threatening appearance-related incident. Relative to a control writing task, both these single-session interventions produced some promising results. Further, a task that focused on enhancing self-compassion showed superiority over one that focused on enhancing self-esteem in relation to one body image criterion (body appreciation), but only in the short-term. These and other findings are discussed in detail below.

Findings provide partial support for H1a in that the self-compassion writing group showed higher state body appreciation than both the self-esteem and control groups, with moderate-to-large effect sizes at post-treatment. However, at follow-up, the self-compassion group was superior on body appreciation to the control group only. Post-treatment and follow-up results are in line with past studies showing self-compassion to be superior to a wait-list control on body appreciation (Albertson et al., 2015; Toole & Craighead, 2016). The current study extends past findings by showing that self-compassion writing resulted in higher scores than self-esteem writing at post-treatment. This difference is consistent with arguments advanced by Leary et al. (2007) that self-compassion induces not only positive self-regard, similar to that commonly associated with self-esteem, but also a more kind and balanced approach to the negative body image incident (Leary et al., 2007). The effect of self-compassion writing on body appreciation was not, however, different from that of self-esteem writing at follow-up, perhaps because the one-off session provided insufficient treatment exposure for a sustained effect.

Contrary to H2a, the self-esteem group did not show higher state body appreciation than the control group at either post-treatment or follow-up, although differences were in the expected direction and effect sizes were medium, rather than small (Cohen's *d*s = 0.49 and 0.55, respectively). Taken together, the findings suggest that enhancement of self-esteem is not sufficient to recover appreciation of one's body after a negative appearance-related incident; rather, self-kindness and unconditional acceptance (i.e., aspects of self-compassion) are also required to embrace and maintain body appreciation under such circumstances.

State body satisfaction was favourably impacted by both self-compassion and self-esteem writing tasks relative to the control group at both post-treatment and follow-up with moderate-to-large effect sizes, indicating partial support for H1b and full support for H2b. Current findings are consistent with previous intervention research that shows the positive effects of self-compassion (Albertson et al., 2015; Toole & Craighead, 2016), and self-esteem enhancement (Norwood et al., 2011; O'Dea & Abraham, 2000), on body satisfaction. The current study is, however, unique in its use of writing tasks to produce these positive effects, providing support for the use of such tasks as an alternative to other enhancement exercises. The self-compassion group, however, did not differ significantly from the self-esteem group in state body satisfaction. Quite possibly, the two interventions yielded similar effects on body satisfaction via different mechanisms. While the self-compassion manipulation sought to promote unconditional self-acceptance, a balanced perspective on negative events, and a connectedness with other individuals (indeed with all humanity), self-esteem writing aimed to encourage positive self-evaluation by making more salient favourable comparisons with other individuals. Thus, enhancing perceptions of similarities through self-acceptance, or of differences through self-evaluation,

may represent alternative routes by which to reduce actual/ideal body image discrepancies, and thereby increase body satisfaction.

With regards to appearance anxiety, neither H1c nor H2c was supported. Indeed, although the main effect for group approached significance, and a medium effect size was observed, the self-compassion and self-esteem writing tasks were not more efficacious than the control writing task. One explanation could be that appearance anxiety includes both individuals' self-evaluations (i.e., I am anxious because I'm not meeting societal standards) as well as their perceptions of evaluations by others (i.e., I am anxious because I'm not meeting others' expectations of societal standards). Indeed, previous research has shown that while appearance anxiety involves the perception of one's own physical attractiveness, this type of anxiety also correlates highly with public self-consciousness and audience anxiety (Dion, Dion, & Keelan, 1990). In at least one study, appearance-anxious individuals reported they perceived themselves as unattractive and believed that others would also rate them as unattractive (Garcia, 1998). While perception of others' evaluations was not directly assessed in the current study, it could contribute to participants' appearance anxiety in response to the imagined scenario about an unflattering photo of themselves on social media. Since the writing interventions were primarily self-focused, it might be that perceptions of evaluations by others went unchanged, and thus the interventions were not effective in reducing appearance anxiety overall.

4.1. Strengths, limitations, and future research

The current research has several strengths. It is the first study to investigate the effects of self-compassion and self-esteem writing on indices of body image. Measures of state body image were employed to assess their temporal variations as a function of the writing interventions. The three measures had previously been validated on female undergraduate samples, and this may have contributed to their high reliability in the current sample. The study used a randomised controlled design and follow-up measures. Participant retention from post-treatment to follow-up was high. The homogenous sample (undergraduate females between 17 and 25 years) provided some control over extraneous variables. Face-to-face lab sessions conducted by the same researcher ensured consistency of data collection procedures. Checks on participant attention, the validity of the manipulations, and the fidelity of the written responses were additional design strengths.

Future research could investigate the impact of more sustained and more frequent writing sessions. Given our findings, there is a need to determine whether the benefits currently observed can be extended by the repeated use of writing tasks. Unanswered questions include: does participation in multiple writing sessions yield increasingly favourable effects? If not, at what point do benefits peak, and when, if ever, do they begin to wane? Longitudinal and cross-cultural studies are needed to determine the robustness of the obtained effects, and, in particular, to assess whether any advantages associated with self-compassion over self-esteem writing are sustained over time and place.

The study also has limitations. The homogeneous sample limits its external validity. Future research could investigate whether the findings generalise to community samples, adolescents, or males, as well as to clinical samples. Whilst participants were issued sealed envelopes containing the follow-up questionnaires, and asked to await further instructions via email, there is no guarantee that the questionnaires were completed on the due date. An electronic version of the questionnaire could determine date completion in future research. Trait self-compassion and self-esteem were not assessed and, therefore, the impact of the interventions on these characteristics remains unknown. Similarly, trait levels of body appreciation, body satisfaction, and appearance anxiety were not assessed, so it is not possible to determine the extent to which the writing tasks merely "undid" the adverse effect of reading the negative body image scenario, rather than providing a genuine improvement upon baseline levels. However, with the multiple appearance-related threats women encounter in real life (e.g., magazines, social media, films), an intervention that simply ameliorates the negative impacts of these incidents is worthwhile. Nevertheless, future research should include trait measures to assess within-subject improvements, and/or to screen for particular target groups (e.g., those with high trait body dissatisfaction).

Hypothetical scenarios do not always generate the same responses as real-life situations. However, believability check items indicated that participants viewed the scenario as plausible. Future research should examine the effects of self-compassion and self-esteem writing on real-life appearance-related events that may be more serious or relevant to participants. Also, research could seek to learn more about the processes by which self-compassion and self-esteem interventions have their effect. Further, as self-compassion consists of three components, each of these components could be experimentally manipulated to determine their relative contributions to body image outcomes.

4.2. Implications

The present study has shown that writing tasks can be used to assist in increasing positive body image (in the form of body appreciation) and reducing negative body image (by raising levels of body satisfaction) in young adult women faced with threatening appearance-related incidents. The results suggest that a writing exercise that promotes the adoption of a self-compassionate perspective may be particularly beneficial, at least in the short-term. These writing interventions are brief and inexpensive, they can be self-initiated and self-managed, and they carry no known adverse side-effects. Hence, subject to replication, self-referent writing tasks, especially those that promote self-compassion, appear to represent a feasible and efficacious means of assisting psychological recovery from threatening body image incidents.

4.3. Conclusion

This study suggests that while both self-compassion and self-esteem writing favourably affect state body satisfaction, self-compassion writing is the more efficacious of the two, in the short-term, for improving state body appreciation. When female undergraduates feel they are falling short of cultural ideals, a self-compassionate perspective can help them relate to themselves with kindness and concern, while increasing appreciation for, and satisfaction with, their body. Given the unrelenting societal standards of beauty to which they are exposed, negative body image incidents may be a regular occurrence for many young women. Use of self-compassion writing holds considerable promise as a means of helping these individuals dissipate consequential body image concerns.

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