

The Effects of Self-Compassion and Self-Esteem Writing Interventions on Women's Valuation of Weight Management Goals, Body Appreciation, and Eating Behaviors

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Abstract

In this study, we examined the effects of body-focused daily self-compassion and self-esteem expressive writing activities on women's valuation of weight management goals, body appreciation, bulimic symptoms, and healthy and unhealthy eating behaviors. One-hundred twenty-six women, recruited from the community and a university participant pool ($M_{age} = 29.3$, $SD = 13.6$), were randomly allocated to one of the three writing conditions: body-focused self-compassion, body-focused self-esteem, or control. Women reflected on a moment within the past 24 hours that made them feel self-conscious about their bodies, eating, or exercise habits (self-compassion and self-esteem conditions) or on a particular situation or feeling that occurred in the past 24 hours (control condition) for 4–7 days. At post-treatment (24 hours after the intervention), women in the self-compassion group demonstrated decreased bulimic symptoms, while women in the self-esteem and control conditions did not. Furthermore, clinically significant changes in bulimic symptoms were associated with being in the self-compassion condition but not in the self-esteem or control conditions. Results suggest that body-focused writing interventions may be more effective in temporarily reducing eating disorder symptoms in women if they focus on harnessing self-compassion. *Additional online materials for this article are available on PWQ's website at <http://journals.sagepub.com/doi/suppl/10.1177/03616843211013465>*

Keywords

self-compassion, self-esteem, intervention, body image, eating behaviors

The prevalence rates of body image concerns among women, including dissatisfaction with one's appearance or body weight or shape, continue to increase (Pruis & Jaworsky, 2010). Body image concerns remain relatively stable across the life span (Tiggemann, 2004). Even among older women, thoughts about weight occur on a daily basis, and many women report that thoughts about weight or body shape can occasionally negatively affect their well-being (Gagne et al., 2012). Body dissatisfaction is positively associated with a myriad of psychological and physiological health consequences such as depression and anxiety (Jacobi et al., 2004; Szymanski & Henning, 2007), restricted and emotional eating (Johnson & Wardle, 2005), and internalization of problematic sociocultural values related to appearance, such as valuing and striving for thinness (Homan, 2010).

Although body image is often conceptualized as a stable, trait-like construct that describes an individual's typical affective valence toward their body, body image is also fluid and subject to daily fluctuations (Melnyk et al., 2004). Research examining fluctuations in women's body image

demonstrate that negative shifts in body satisfaction (i.e., periods of lowered body satisfaction) are associated with maladaptive coping strategies that increase the importance of appearance and eating disorder attitudes and behaviors (Melnyk et al., 2004). Considering that fluctuations in evaluation (i.e., affective evaluation of appearance) and investment (i.e., relative importance of one's appearance in one's life) in body image are likely to occur and have consequences on women's eating behaviors (Carraca et al., 2011), writing interventions aimed to help women adaptively cope with daily body image experiences were used. Our knowledge of how investment in appearance-focused goals is associated with pathological eating behaviors, such as restraint

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(restricting calories) and disinhibition (binge eating; Putterman & Linden, 2004; Thøgersen-Ntoumani et al., 2010), is growing, so interventions aimed to increase positive affective components of body image, such as body satisfaction and appreciation, and lower the saliency of appearance-focused goals are needed.

Current self-guided writing interventions demonstrate promising results, such that they are effective in reducing body dissatisfaction, eating disorder symptoms, and bolstering body acceptance. For instance, expressive writing interventions that increase self-compassion (Leary et al., 2007; Moffitt et al., 2018; Seekis et al., 2017; Stern & Engeln, 2018) or self-esteem (Leary et al., 2007; Seekis et al., 2017) have been shown to increase body appreciation (Seekis et al., 2017) and body satisfaction (Stern & Engeln, 2018) and reduce eating disorder symptoms (Kelly & Carter, 2015). Cumulative evidence suggests that self-compassion interventions are especially useful to help women regulate their emotions after reflecting on aspects of their bodies (Stern & Engeln, 2018), which helps mitigate negative body image and disordered eating (Turk & Waller, 2020). However, limited research exists on comparing different types of multisession writing interventions that target different protective factors (e.g., self-compassion or self-esteem) and examining their ability to reduce investment in appearance goals and bolster positive body image. Limited research also exists on evaluating the efficacy of these interventions on reducing pathological eating behaviors and increasing adaptive healthy eating behaviors (Biber & Ellis, 2019). This is especially important considering that the absence of pathological functioning does not infer optimal or adaptive functioning (Westerhof & Keyes, 2010). Finally, these interventions have largely been evaluated in student samples; therefore, examining their effects in a sample that includes women who are older and have more diverse educational backgrounds in addition to college women is required.

In the current study, we sought to examine the efficacy of a multisession body-focused self-compassion and self-esteem writing interventions compared to a control writing condition on women's valuation of health-oriented (vs. appearance-oriented) weight management goals, body appreciation, bulimic symptoms, and self-reported healthy (vs. unhealthy) eating behaviors. Single session self-compassion and self-esteem writing interventions were effective in reducing state body dissatisfaction when reflecting on a negative body image scenario compared to a control group (Seekis et al., 2017); however, reframing these events in a self-compassionate manner more robustly affected different aspects of women's body image immediately following the session compared to bolstering positive self-evaluations (Moffitt et al., 2018; Seekis et al., 2017). The potential for these trends to hold or become more robust if women received multiple exposures to these interventions and for these changes to extend to other important cognitive, affective, and behavioral indices while controlling for important covariates (i.e., age, body mass index [BMI], number of sessions) remains underexplored (Seekis et al.,

2017). There is evidence to suggest that multisession self-compassion interventions may outperform those employing a single session on improving health behaviors and overall physical health (Phillips & Hine, 2019); therefore, it is imperative to examine whether multisession body-focused self-compassion interventions yield more benefits on body image and eating behavior. This would help inform the optimal duration of body-focused writing prevention or intervention programs. Additionally, comparing body-focused self-compassion and self-esteem writing interventions can derive fruitful information regarding the effects of self-compassion relative to self-esteem when coping with daily negative experiences that may affect body image.

Self-Compassion as a Protective Factor

Self-compassion has been identified as a protective factor in body image and eating disorder literature (Turk & Waller, 2020), as it is a method of compassionately relating to the self that focuses on experiencing and approaching failures openly, with kindness or acceptance, and with a sense of relatedness to others (Neff, 2003b). Individuals who embody self-compassion exhibit capabilities to overcome feelings of failure or inadequacy by relating to the self in the following ways: (a) enacting care toward oneself with unconditional acceptance in order to overcome critical and judgmental evaluations of the self (self-kindness vs. self-judgment), (b) enacting acceptance of personal flaws or difficult life circumstances as part of being human in order to overcome feelings of isolation or helplessness (community humanity vs. isolation), and (c) enacting awareness and perspective taking when evaluating negative experiences in order to prevent avoidance or rumination (Neff, 2003b).

In particular, self-compassion fosters resilience when facing distressing situations involving failure, rejection, embarrassment, or other negative life events (Leary et al., 2007). In response to these situations, individuals high in self-compassion are less likely to ruminate or experience negative affect, more likely to accept undesirable personal traits and behaviors, and more likely to take responsibility for negative events without becoming defensive or feeling badly about themselves (Leary et al., 2007). This type of perspective taking may protect women from experiencing daily fluctuations in physique anxiety, drive for thinness, and body dissatisfaction (Thøgersen-Ntoumani et al., 2017). Furthermore, self-compassion mitigates the negative effects of engaging in social comparisons, particularly those related to eating behavior, on body appreciation (Siegel et al., 2020) and moderates the relationship between weight concerns and eating pathology (Stutts & Blomquist, 2018). Additionally, common humanity, a component of self-compassion that involves acknowledging that imperfections and feelings of inadequacy are shared with others, is especially important for women's body image, most notably their ability to accept and appreciate their bodies despite its imperfections (Seekis et al.,

2020). Taken together, these findings suggest that self-compassion functions as an adaptive coping response to deal with appearance distress, including appearance distress that may arise from engaging in social comparisons (i.e., perceiving a disparity between oneself and others). Additionally, self-compassion offers resilience by reducing both risk factors (i.e., body shame) and experiencing those risk factors as distressing (i.e., weight concerns; Breines et al., 2014).

Taking a self-compassionate perspective is also beneficial when individuals are dealing with setbacks related to their engagement in health behaviors (e.g., ingesting foods that are less nutritious, engaging in suboptimal levels of exercise). A recent meta-analysis that comprised 15 samples (Sirois et al., 2015) suggested that self-compassion replenishes resources for self-regulation by enhancing emotion regulation, such as lowering negative affect and increasing positive affect, which partly explains the positive relationship between self-compassion and health promotion (Sirois et al., 2015). These findings suggest that even when individuals fail to adhere to a specific health behavior plan (e.g., eat less deep-fried foods), being compassionate and understanding can help replenish cognitive resources to self-regulate a particular behavior, leading to higher behavioral engagement and successful execution of the desired behavior. Self-compassion is also positively associated with the satisfaction of key psychological needs, such as autonomy, competence, and relatedness, which are essential for self-regulation and psychological well-being (Gunnell et al., 2017). Daily fluctuations in the satisfaction and frustration of these needs also play a role in binge-eating in women, whereby higher need frustration is associated with more episodes in a given day (Verstuyf et al., 2011). The positive influence self-compassion has on basic psychological needs is another potential mechanism that explains its buffering role on eating disorder symptoms. Furthermore, self-compassion is positively associated with other key motivational constructs that support health behavior engagement. For instance, self-compassion is positively associated with self-improvement motivation (Breines & Chen, 2012), which may explain why self-compassionate individuals are shown to engage in weight-managing behaviors to promote health and are more likely to self-regulate their eating behaviors for more self-determined reasons (i.e., because it is aligned with other important beliefs), which leads to higher engagement in healthy eating behavior (Guertin et al., 2018).

Reviews of the literature demonstrate the robustness of self-compassion interventions on reducing negative body image and eating pathology (Biber & Ellis, 2019; Turk & Waller, 2020) and improving the self-regulation of health behaviors (Biber & Ellis, 2019). The efficacy of self-compassion interventions on these outcomes is mainly due to promoting adaptive affect regulation (Turk & Waller, 2020) by lowering defensiveness via treating oneself with compassion and unconditional acceptance and, in turn, reducing negative emotional states and self-blame, which can interfere with self-regulation and self-care (Terry & Leary,

2011). Brief writing interventions in samples of women increase state positive affect (Stern & Engeln, 2018) and reduce state rumination, state self-criticism (Mosewich et al., 2013), and restrained eating (C. A. Adams & Leary, 2007). In particular, self-compassionate writing that focuses on coping with distressing body-related scenarios reduces drive for thinness (Seekis et al., 2020), increases body appreciation (Seekis et al., 2017, 2020), and reduces disinhibiting eating (e.g., binge eating; Kelly & Carter, 2015). Compared to a wait-list control group, changes in drive for thinness and body appreciation held for up to 3 months in a 2-week Facebook-enhanced mindful self-compassion intervention (Seekis et al., 2020). Additionally, changes in state body appreciation in a single writing session self-compassion intervention held for up to 2 weeks when compared to a control writing group (Seekis et al., 2017). These findings suggest that when women are guided to become more self-compassionate toward themselves, they experience more balanced emotions, are less likely to overidentify with their emotions linked to the event and ruminate (i.e., mindfulness), and are less likely to criticize themselves or their actions (i.e., self-kindness). These adaptive coping strategies improve women's emotion regulation when facing appearance distress and protect them from developing negative appearance perceptions and, in turn, can help reduce eating disorder behavior as a result.

Self-Esteem as a Protective Factor

In women diagnosed with an eating disorder, self-esteem was negatively associated with eating disorder symptoms and eating and body shape concerns (Kelly et al., 2014). Although there is limited evidence that self-esteem and body image are causally related (Wichstrom & Von Soest, 2016), self-esteem is regarded as a protective factor, which is often targeted in eating disorder prevention programs to lower the prevalence of body image concerns and engagement in maladaptive weight-controlling behaviors among young women (O'Dea & Abraham, 2000).

Eating disorders are considered a disorder rooted from longstanding issues with the self, identity, and individuation (Amianto et al., 2016), so interventions focused on self-development and self-evaluation are tailored toward bolstering multiple components of self-esteem, such as self-worth (i.e., personal value), self-perception (i.e., satisfaction with the self), and perceived abilities or competence (O'Dea & Abraham, 2000). Most notably, a multisession educational program called "Everybody's Different" (O'Dea, 1995) delivered to secondary students focused on ways to create a positive sense of self by embracing individuality and learning how to receive positive feedback from others (O'Dea & Abraham, 2000). This intervention was effective in reducing appearance-contingent self-esteem, drive for thinness, and body dissatisfaction among adolescent men and women, which persisted for up to 1 year. Findings from brief writing interventions that increase self-esteem by

encouraging positive self-evaluation (i.e., positive skills or traits) also show favorable results. For example, a single session writing intervention that asked women to reflect on a distressing body image scenario in a controlled setting increased women's body satisfaction immediately after the writing session and at a 2-week follow-up compared to a control writing condition (Seekis et al., 2017).

Although some interventions tailored toward increasing self-esteem demonstrated positive effects on body image (O'Dea & Abraham, 2000; Seekis et al., 2017), others show no benefits when compared to a control condition (Ghaderi et al., 2005; McCabe et al., 2006). One reason for these conflicting results may be due to the pitfalls of trying to maintain high self-esteem, such as engaging in social comparisons and placing contingencies on one's self-worth (Leary & Baumeister, 2000). Self-esteem, by nature, is partly contingent upon daily appraisals of the self in comparison to others, so it is subject to fluctuation (Leary & Baumeister, 2000). Due to these fluctuations, self-esteem may not be consistently associated with positive psychological outcomes (Leary & Baumeister, 2000; Neff, 2009). Those with more contingent forms of self-esteem (i.e., contingent upon positive appraisals from others) may engage in maladaptive behaviors that impede personal growth processes that are essential for coping with painful personal challenges, such as attributing failures to external causes, trivializing failures, or dismissing information about the self (Neff, 2009). Additionally, contingent self-esteem has negative consequences on body image (Grossbard et al., 2009) and self-regulation (Crocker et al., 2006). For example, contingent self-esteem is positively associated with behavioral disengagement (Lane et al., 2002), self-deprecation (Brown & Mankowski, 1993), cognitive rigidity (Taris, 2000), and reduced self-efficacy (Lane et al., 2002), which can undermine motivation to change and successful progression toward important life goals. Furthermore, it has been suggested that employing self-esteem writing interventions that do not bolster contingent self-esteem may be challenging (Leary et al., 2007). Popularly used prompts in writing interventions often focus on affirming participants' self-images rather than helping them take a more objective, balanced perspective about themselves (Leary et al., 2007).

Comparing Self-Compassion and Self-Esteem

Findings demonstrate that self-compassion and self-esteem have similar benefits on mental health, as they both represent positive self-attitudes (Neff, 2011); however, self-compassion offers more emotional resilience because of its stable nature. Self-compassion cultivates a positive self-concept that does not require individuals to ongoingly evaluate their self-worth (Neff, 2003b). Self-esteem, however, is reliant and contingent upon receiving positive affirmation and approval from others, rather than personal insight and self-acceptance. Unlike self-esteem, self-compassion is not associated with

ego-defensive coping, such as engaging in social comparisons or self-enhancement, and offers a compassionate, accepting attitude toward the self that bolsters self-worth without contingencies (Neff, 2011). A series of experiments conducted by Leary and colleagues (2007) that induced self-compassion or self-esteem in young adults demonstrated that the effects of self-compassion surpassed those of self-esteem when coping with personal painful events, which suggests that their influences are distinct despite their high correlation and that self-compassion may provide additional psychological resilience. For this reason, we sought to empirically examine if a body-focused self-compassion intervention would surpass the effects of a body-focused self-esteem intervention when coping with daily situations that elicited appearance-related distress.

Current Study

The literature demonstrates that brief writing interventions, particularly those that are tailored toward promoting protective factors for women's body image, can create meaningful change in women's body image (Seekis et al., 2017, 2020). However, few studies have sought to compare differently tailored writing interventions, such as those rooted in self-compassion or self-esteem (Moffitt et al., 2018; Seekis et al., 2017). Furthermore, our knowledge of the superiority of self-compassion writing interventions over self-esteem writing interventions when coping with body-related distress is limited to single exposure interventions (Moffitt et al., 2018; Seekis et al., 2017). A recent study suggests that this limitation impedes our knowledge on the true robustness of these writing interventions on producing favorable changes in body image and eating behaviors and the number of sessions needed to reach maximum results (Seekis et al., 2017). In the current study, we fill these knowledge gaps by employing multisession interventions and comparing their efficacy on cognitive, affective, and behavioral indices related to body image, while examining the number of writing sessions as one of the covariates. Additionally, our knowledge is currently limited on the efficacy of these interventions on improving eating behaviors more broadly; therefore, we examined their ability to reduce pathological eating behavior, while increasing healthy eating behavior. Finally, those who have employed self-compassion or self-esteem writing interventions have infrequently examined if these interventions yielded clinically significant changes in eating disorder symptoms; therefore, we also examined the ability of body-focused self-compassion and self-esteem writing interventions to promote clinically meaningful change in those who meet clinical criteria on the Eating Disorder Inventory-1 Bulimia subscale (EDI-1-BS).

Considering that self-compassion is positively associated with striving toward health weight management goals and that promoting self-compassion can increase body appreciation (Seekis et al., 2017, 2020), lower eating disorder

symptoms (Turk & Waller, 2020), and increase engagement in health promoting behaviors (Biber & Ellis, 2019), we hypothesized that women in the body-focused self-compassion writing condition would demonstrate increased valuation of health-oriented (vs. appearance-oriented) goals, body appreciation, and healthy eating behaviors and reduced bulimic symptoms from pre- to post-treatment compared to the body-focused self-esteem and control writing conditions. Self-esteem was shown to increase body satisfaction (Seekis et al., 2017) and reduce eating disorder symptoms (O’Dea & Abraham, 2000); therefore, we also hypothesized that women in the body-focused self-esteem writing would demonstrate increased body appreciation and reduced bulimic symptoms compared to the control writing condition, but to a lesser extent than the body-focused self-compassion condition. Finally, it was hypothesized that clinically significant changes in bulimic symptoms would be associated with the type of writing condition. We hypothesized that women allocated to the body-focused self-compassion condition would be more likely to demonstrate clinically meaningful change compared to those in the body-focused self-esteem or control writing conditions due to the robustness of self-compassion interventions on promoting clinically significant change on eating disorder symptoms compared to other interventions (Kelly & Carter, 2015) and wait-list control (Kelly & Carter, 2015; Seekis et al., 2020).

Method

Participants

The sample comprised 126 women who were recruited from a Canadian university’s integrative system of research participation (ISPR) pool and from the community via social media platforms and online classifieds (e.g., <https://www.kijiji.ca>) over a period of 4 years (2016–2019). Women were between the ages of 17 and 69 ($M = 29.3$, $SD = 13.6$), but most were between 17 and 34 years old ($n = 98$, 78%). The majority of women were White ($n = 85$, 67%) and resided in Ontario ($n = 93$, 76%). Most had a baccalaureate college degree or higher as the highest level of education obtained ($n = 57$, 63%), and the majority were considered a healthy weight according to their self-reported BMI ($n = 70$, 56%). According to norms on the EDI-1BS, which was established in women who met clinical criteria for Bulimia Nervosa (Garner et al., 1983), 32 women in our sample had scores in the clinical range (10.8 or >, 25%), 88 had scores lower than the clinical range, but above the non-clinical comparison group (10.7 to 2.1, 70%), and six scored within the range of the non-clinical comparison group (2.0 or <, 5%). The mean scores on the EDI-1BS for the sample indicate that most women scored below the clinical range but exhibited moderate symptoms ($M = 9.3$, $SD = 4.2$, range = 1.00–21.00). Women recruited through the ISPR were given one credit toward a course for completing the pre-treatment survey

($n = 56$, 44%), but women recruited from the community were not compensated ($n = 70$, 56%) for completing the pre-treatment survey. All women who consented to participate in the writing intervention were entered into a draw to win a CAD\$100 money order even if they dropped out of the intervention or did not complete the post-treatment survey. See supplemental material for more demographic information on participants allocated to each writing intervention (Table S1).

Procedure

We obtained ethics approval for our study from our university prior to recruitment. Women were informed that the study was examining the effects of expressive writing on their body image and eating behaviors and consisted of completing an online survey before commencing the writing activities (i.e., pre-treatment), engaging in daily writing reflections for a period of 7 consecutive days (i.e., intervention), and completing a follow-up survey on the 8th day (i.e., post-treatment). Women completed the pre-treatment survey online through the ISPR system or through a link in a social media advertisement and indicated their interest in enrolling in the writing activities at the end of the survey. Interested participants were contacted by the primary author via email and began their writing sessions digitally 3 days after completing the pre-treatment measures to reduce socially desirable responding and priming effects.

Participants from all the recruitment methods were randomly assigned to one of the three writing exercise conditions using a random number generator ($N = 174$; $n = 58$, body-focused self-compassion; $n = 60$, body-focused self-esteem; and $n = 56$, control). Participants were sent digital survey links each day to complete and record their journal entry via email, which required them to reflect on a moment within the past 24 hours that made them feel self-conscious about their bodies, eating, or exercise habits (self-compassion and self-esteem conditions) or on a particular situation or feeling that occurred in the past 24 hours (control condition). The control condition was created to control for the potential effect of expressive writing on body image (East et al., 2010; Seekis et al., 2017).

In addition to reflecting on a particular scenario, participants were asked to use the prompts given to them based on their condition to help structure their reflective responses. The three prompts created for the body-focused self-compassion and body-focused self-esteem writing conditions were derived from Leary and colleagues (2007). The three prompts created for the control condition were derived from other works employing expressive writing programs (East et al., 2010; Pennebaker, 1997). Instructions directed participants to complete each writing exercise between 4 p.m. and midnight. Adherence to this protocol was examined by checking participants’ digital submissions each day. If

submissions were not submitted within the time frame, it was not counted as a valid session.

Upon the completion of the writing exercises, post-test surveys were disseminated 24 hours later (10 days after pre-treatment measures and 1 day after cessation of the intervention). The post-test surveys contained a debriefing form that explained the objectives and hypotheses of the study. Participants were instructed to complete the follow-up survey within 24 hours of receiving it. The primary author examined adherence to this protocol by checking digital submissions. Pre- and post-treatment surveys contained the same measures in the same order to reduce potential order effects (i.e., valuation of weight management goals, self-compassion, body appreciation, self-esteem, bulimic symptoms).

Writing tasks. In the context of reflecting on a self-conscious moment that happened that day related to their body, eating, or exercise habits, women in the body-focused self-compassion condition were encouraged to discuss (a) “how other women might have also had these experiences or have gone through a similar situation,” (b) to “try to express self-acceptance, understanding, kindness, and concern toward yourself in a similar manner as you would to a fellow peer in a similar situation (e.g., try to see yourself as your own peer and what you would say to them to harness self-acceptance, understanding, kindness, and concern),” and (c) to “try to describe your feelings in an objective and unemotional fashion (e.g., acknowledging that your feelings or experiences are temporary, live in the moment, but don’t get too carried away by your emotions).” Each prompt was used to facilitate one of the three components of self-compassion (a = common humanity, b = self-kindness, and c = mindfulness).

In the context of reflecting on a self-conscious moment that happened that day related to their body, eating, or exercise habits, women in the body-focused self-esteem condition were encouraged to discuss (a) “some of your positive characteristics or skills,” (b) the “potential external pressures or factors that could have caused you to feel this way today,” and (c) “how your feelings do not accurately define you as a person (e.g., your value as a person is not defined by your feelings about yourself).”

While reflecting on any particular event or feeling over the past 24 hours, women in the control condition were encouraged to (a) “dig deep into your emotions (e.g., reflecting on how you felt and identifying your emotions),” (b) “be descriptive when reflecting on how you felt during the situation (e.g., ‘I felt so agitated that I could feel myself trembling’),” and (c) “be as honest with yourself as possible (e.g., sharing information that may be embarrassing).”

Inter-rater reliability. Two authors blindly assessed two entries from 10 participants from each condition and were asked (a) to rate each participant’s entry on a scale of 1 (*strongly disagree*) to 6 (*strongly agree*) on the extent that they believe that the participant followed each set of writing prompts from the three conditions and (b) to indicate which

condition they thought the participants were randomized to. This was conducted to ensure that participants were following the prompts and that effects could be attributed to the intervention. Agreement between the raters for the first assessment was scored as a percentage out of the total amount of entries evaluated (i.e., 60). Agreement between the raters for the second assessment was scored as a percentage out of the total participants evaluated for each condition (i.e., 10).

Manipulation efficacy. Participants completed measures of self-compassion and self-esteem pre- and post-treatment. Pre-post measures of these outcomes were used to determine whether the writing prompts for each respective condition targeted these psychological outcomes.

Number of journal entries completed. The primary author determined completion rates by examining qualitatively each participant’s entries. Participants had the option to write “completed, but preferred not to disclose” if they did not want to disclose the contents of their entry, and entries were not released to the researchers in such cases. Those non-disclosed entries and blank entries were counted as incomplete entries. We recorded and summed the number of completed journal entries throughout the entirety of the intervention. We inspected written responses to determine the number of journal entries completed but we did not use length and quality of written responses as a criterion for compliance. See supplemental material for examples of written responses by participants in each writing condition.

Measures

Body mass index. BMI (kg/m^2) was calculated from self-reported height and weight.

Self-compassion. The 26-item Self-Compassion Scale (SCS; Neff, 2003a) was used to measure women’s degree of self-compassion (e.g., I try to be loving toward myself when I am in emotional pain). Women indicated on a scale from 1 (*almost never*) to 7 (*almost always*) the extent to which they typically engaged in compassionate coping at pre- and post-test. As in a previous study (e.g., Guertin et al., 2018), in the current study, we used a revised scaling of the self-compassion items (i.e., 1–7) to be more comparable with measures of self-esteem, as both measures were used to control for the effects of the other when examining their ability to increase self-compassion or self-esteem. A global score of self-compassion was created by averaging all six subscale scores after reverse-scoring negatively worded subscales (i.e., self-judgment, isolation, over-identification). Structural validity of the SCS was supported via exploratory and confirmatory factor analyses in a sample of men and women (Neff, 2003a). In addition, the SCS demonstrated discriminant validity from other self-related attitudes, such as self-esteem, when predicting mental health outcomes (Neff, 2003a). Reported internal consistency of the scores on the

SCS was .92, and the test–retest reliability over a period of 3 weeks was .93 in samples of college students (Neff, 2003a). The SCS was used to measure short-term changes in self-compassion in previous studies employing a brief body-focused self-compassion intervention (Seekis et al., 2017, 2020). α for the current sample was .93.

Self-esteem. The Rosenberg Self-Esteem Scale (RSES; Rosenberg, 1965) was used to assess women’s perceived self-worth. Four of the 10 items were used to assess global self-esteem because the RSES is known to have redundant items, which may conflate self-esteem scores and socially desirable responding (Robins et al., 2001). Women were asked on a scale from 1 (*not very much like me*) to 7 (*very much like me*) how they perceived themselves at pre- and post-test. The four items included “On the whole, I feel satisfied with myself,” “At times, I think I am no good at all,” “I take a positive view toward myself, and “I feel that I do not have much to be proud of.” Mean scores were derived by averaging the four items after reverse-scoring. Structural validity of the RSES was supported via exploratory and confirmatory factor analyses in a sample of college students (Gray-Little et al., 1997). Reported internal consistency of scores on the RSES was .88 in a college sample, and the test–retest reliability over a 2-week period was .85 in college students (Robinson & Shaver, 1973). The RSES was used to measure short-term changes in self-esteem in studies employing a brief body-focused self-esteem intervention (Seekis et al., 2017). α for the current sample was .88.

Relative health-oriented goals. A modified version of the Aspiration Index (AI; Guertin et al., 2018) was used to assess the degree to which women placed importance on appearance and/or health-oriented weight management goals. On a scale from 1 (*not at all important*) to 7 (*very important*), women rated the extent to which eight appearance goals (e.g., to be beautiful) and six health-oriented goals (e.g., to be physically healthy) were important to them in general at pre- and post-test. Subscale items were averaged to create mean subscale scores. Next, the mean subscale scores of appearance-oriented goals were subtracted from the mean score of health-oriented goals in order to assess the centrality of health-oriented goals in women’s lives, which created a relative health-oriented goal score (Sheldon et al., 2004). The original AI was structurally validated in samples of college students across 15 different cultures via confirmatory factor analysis (Grouzet et al., 2005). The mean internal consistency across the 15 cultures of scores on the AI in college samples was between .72 and .84 (Grouzet et al., 2005). The modified version of the AI was used in many studies and demonstrated consistent internal reliability and associations with health-related outcomes in the expected direction (Guertin et al., 2017a, 2017b, 2018). Individuals’ personal aspiration strivings are stable over a period of 1 year (Sheldon et al., 2004). α s in the current sample were .88 for appearance-oriented goals and .85 for health-oriented goals.

Body appreciation. The Body Appreciation Scale (BAS; Avalos et al., 2005) was used to measure women’s degree of positivity, acceptance, and respect toward their bodies. On 13 items, women indicated on a scale from 1 (*never*) to 5 (*always*) the extent to which they felt positivity, acceptance, and/or respect toward their bodies (e.g., Despite its flaws, I accept my body for what it is) at pre- and post-test. A mean score of body appreciation was derived by averaging all items. Structural validity of the BAS was established via exploratory and confirmatory factor analyses in college women (Avalos et al., 2005). Discriminant validity of the BAS was supported, as scores predicted psychological well-being measures above and beyond other body image measures (Avalos et al., 2005). The BAS was used to measure short-term changes in body appreciation after administering a 2-week body-focused mindful self-compassion intervention (Seekis et al., 2020). Reported internal consistency and test–retest reliability for scores on the BAS in college women were .93 and .90, respectively. α for the current sample was .96.

Healthy eating behaviors. The Healthy and Unhealthy Eating Behavior Scale (HUEBS; Guertin et al., 2020) was used to assess women’s engagement in healthy and unhealthy eating behaviors. On this 22-item scale, 11 items measured healthy eating behaviors (e.g., I eat vegetables) and 11 items measured unhealthy eating behaviors (e.g., I eat foods that are deep-fried). On a scale from 1 (*never*) to 7 (*always*), women indicated the extent to which they typically eat certain food items. For the post-test, women were asked the extent to which they ate these food items over the 7 days. Subscale mean scores for healthy and unhealthy eating were created by averaging the items. To create the relative healthy eating mean score, the unhealthy eating mean score was subtracted from the healthy eating mean score. Similar to the calculation of other diet quality index scores, composite scores reflect the ingestion of healthy foods relative to unhealthy foods (de Souza Fernandes et al., 2018). Structural validity of the HUEBS was demonstrated by principal component analysis in two separate samples of college students (Guertin et al., 2020). The reported internal consistencies of the Healthy and Unhealthy Eating subscales scores were .81 and .82 in college samples, respectively. Items that represent healthy eating on the HUEBS have been used to measure changes in eating behaviors over a period of 6 months (Guertin et al., 2017b). α s in the current sample for the Healthy and Unhealthy Eating subscales were .80 and .84, respectively.

Bulimic symptoms. To assess women’s engagement in bulimic behaviors, the Bulimic Symptoms subscale from the Eating Disorder Inventory (EDI-1-BS; Garner et al., 1983) was used. This subscale comprised seven items in which participants self-reported the extent to which they typically engage in bingeing (e.g., I have gone on binges where I felt I could not stop) and purging (e.g., I have thought of trying to use laxatives or vomiting to lose weight) activities on a

Likert-type scale, ranging from 1 (*never*) to 6 (*always*). All items were summed after recoding each score from 3 to 0 to create an overall score. For the post-test, women were asked how often they engaged in these behaviors over the past 7 days and a total score was created by summing all seven items. Validity of the EDI-1-BS was established by cross-validating the scale scores in clinical and non-clinical samples of women (Garner et al., 1983). Discriminant validity was supported by comparing the predictive power of the EDI-1-BS to other eating disorder related diagnostic measures on body image-related constructs (Garner et al., 1983). Short-term changes in tendencies to engage in purging and bingeing activities were demonstrated when employing a brief eating- and body-focused intervention (Kelly & Carter, 2015). Reported internal consistency for scores on the EDI-B in clinical and non-clinical patients was .90 and .83, respectively (Garner et al., 1983; Verstuyf et al., 2011). α in the current sample was .89.

Analytical Plan

For the main analysis, a series of 3 (group: body-focused self-compassion, body-focused self-esteem, and control expressive) \times 2 (time: pre-treatment, post-treatment) repeated measures of analyses of covariance (ANCOVAs) were conducted to examine between-group differences on women's valuation of weight management goals, body appreciation, bulimic symptoms, and healthy eating behaviors, while controlling for covariates. To reduce Type 1 error from conducting multiple comparisons, a Bonferroni adjustment was applied to each set of univariate comparisons ($0.05/4 = 0.0125$). Additionally, Bonferroni-adjusted post hoc comparisons were examined (i.e., simple effects). To examine whether a clinically significant change in bulimic symptoms from pre-treatment to post-treatment was associated with the type of writing intervention, a Fisher–Freeman–Halton exact probability test (two groups: clinically significant change or no change; and three conditions: body-focused self-compassion, body-focused self-esteem, and control) was conducted in women who met the clinical cut-off score on the EDI-1-BS at pre-treatment (10.8 or >; Garner et al., 1983). Bonferroni corrections were applied to post hoc comparisons ($0.05/6 = 0.008$). Clinically significant change was based on the Jacobson and Truax (1991) formula. The change score represents that (a) a given EDI score decreases and surpasses the probabilistic boundary between functional and dysfunctional norms and (b) the change must be at least 1.96 times larger than the standard error of measurement of the difference scores (i.e., pre–post; Jacobson & Truax, 1991). The probability that a score would change this much by chance is less than 5% (Thiel et al., 1998). This formula was used to assess clinically significant changes in EDI scores in female inpatients with anorexia and bulimia nervosa after psychodynamic treatment (Thiel et al., 1998).

For repeated measures ANCOVA, an a priori power analysis using G*Power (Faul et al., 2007) recommended a sample size of 158 participants for detecting a medium effect size with power of .80 and an α of .05, thus our goal was to reach this sample size. A medium effect size was informed by results of a previous self-compassionate training program in those with binge eating disorder (Kelly & Carter, 2015), which demonstrated a small to medium effect on different indices of eating disorder symptoms. For a two-tailed 2×3 Fisher–Freeman–Halton exact test, an a priori power analysis using G*Power (Faul et al., 2007) recommended a sample size of 23 participants for detecting a large effect size with a power of .80 and an α of .008. Exact effect size was calculated using a power analysis formula by (McDonald, 2014). A large effect size was anticipated based on previous findings that demonstrated that women allocated to a self-compassion training program on average exhibited more clinically significant change compared to the behavioral training or waitlist control group (Kelly & Carter, 2015).

Age, BMI, number of journals completed, pre-treatment self-esteem scores, and pre-treatment self-compassion scores were selected to determine whether they were suitable as covariates for the series of ANCOVAs a priori. Age was selected because women who are older possess unique protective and risk factors, such as holding appearance as less important (Tiggemann, 2004) and exhibiting more self-compassion (Neff & Vonk, 2009) but also having higher BMI than younger women (Wells et al., 2009). BMI was selected because research demonstrates a strong relationship between having higher BMI and increased body dissatisfaction (Weinberger et al., 2017) and higher engagement in bulimic behaviors (Aferdita & Gordana, 2016). The number of journals completed was of interest in order to determine the effects of higher exposure to treatment on change over time. As self-esteem and self-compassion are highly correlated (Leary et al., 2007), they were controlled for when examining changes in either construct to reduce confounding effects.

Results

Preliminary Analyses

The research coordinator recorded dropouts and non-compliance after making inferences by examining contents, not quality, of participants' digital entries. Those who consented and engaged in at least one writing session, but abruptly stopped completing entries, or did not adhere to the minimum requirement of sessions as mentioned in the consent form (i.e., at least half of the sessions) were considered non-compliant and dropouts. Our initial sample comprised 174 participants; however, 48 women (28%) dropped out of the study and were not included in the analyses or sample characteristics. Due to dropout and non-compliance rates, the repeated measure ANCOVAs were slightly underpowered

Table 1. Means and Standard Deviations for Each Group at Pre- and Post-Treatment After Controlling for Covariates.

Outcome	Self-Compassion		Self-Esteem		Control	
	Pre M (SD)	Post M (SD)	Pre M (SD)	Post M (SD)	Pre M (SD)	Post M (SD)
Age	25.8 (6.9)		27.4 (12.7)		34.9 (17.7)	
BMI	23.4 (5.7)		25.1 (6.5)		27.7 (9.4)	
Entries		5.9 (1.1)		5.6 (1.1)		5.6 (1.1)
SCS	3.7 (0.8)	4.0 (0.9)	3.7 (0.8)	3.7 (0.9)	3.8 (0.8)	4.0 (0.9)
RSE	5.0 (1.1)	5.3 (1.1)	4.8 (1.1)	5.4 (1.9)	4.5 (1.1)	4.7 (1.1)
AI	2.2 (1.5)	2.6 (1.6)	2.1 (1.5)	2.0 (1.5)	1.8 (1.6)	2.0 (1.7)
BAS	4.7 (1.5)	4.9 (1.5)	4.6 (1.5)	5.0 (1.5)	4.1 (1.5)	4.3 (1.5)
HUEBS	1.4 (1.5)	1.7 (1.3)	1.5 (1.3)	1.5 (1.4)	2.0 (1.4)	1.7 (1.3)
EDI-1-BS	9.2 (4.3)	5.7 (4.7)	9.7 (4.5)	10.5 (5.4)	8.9 (3.8)	8.9 (4.8)

Note. BMI = body mass index; entries = number of completed writing entries; SCS = Self-Compassion Scale; RSE = Rosenberg Self-Esteem Scale; AI = Aspiration Index; BAS = Body Appreciation Scale; HUEBS = Healthy and Unhealthy Eating Behavior Scale; EDI-1-BS = Eating Disorder Inventory I-Bulimia subscale.

compared to our estimated sample size for achieving 80% power; however, G*Power estimates that the analyses did reach 70% power with our sample size of 126 participants (Faul et al., 2007). A one-way multivariate analysis of variance (MANOVA) determined that there were no differences between women who dropped out or completed the intervention across all pre-treatment measures, $F(7, 157) = 0.84$, $p = .557$, $\eta_p^2 = .036$. A χ^2 test of independence also revealed no association between dropout rate and meeting clinical criteria on the EDI-1-BS, $\chi^2(1) = .34$, $p = .561$, or dropout rate and condition, $\chi^2(2) = .20$, $p = .904$.

Less than 1% of data were missing on items for each variable for pre-treatment measures and no data were missing on post-treatment measures. Missing data in pre-treatment outcomes were considered missing completely at random. The Expectation-Maximization method was used to replace missing values. All outcome variables were considered normally distributed, and there were no multivariate outliers. Table 1 contains means and standard deviations for pre-treatment and post-treatment scores for each outcome while controlling for covariates.

Assumptions for the 3 (condition) \times 2 (time) repeated measures ANCOVAs for the main analyses for linearity and homogeneity of variance were met and examined via scatterplots and tests of homogeneity of variance. For covariates, three assumptions (i.e., linearity, homogeneity of regression slopes, and independence from treatment effect) had to be met for a variable to qualify as a covariate (Field, 2013). Age, BMI, and the number of journal entries completed met the three assumptions and were used as covariates in the ANCOVAs. Pre-treatment self-esteem scores also met the three assumptions and were used when examining group differences in self-compassion, whereas pre-treatment self-compassion scores met the three assumptions and were used when examining group differences in self-esteem. Adjusting for covariates in randomized controlled trials can

influence results (Kraemer, 2015), so covariates were chosen a priori based on existing literature to reduce this risk.

A one-way MANOVA was conducted to determine pre-treatment differences in outcome measures across conditions. Baseline differences were found, $F(16, 218) = 1.74$, $p = .042$, $\eta_p^2 = .113$, but only in variables used as covariates, such as BMI and age. Women in the control writing condition were older than women in the body-focused self-compassion (mean difference = 9.74, $p = .009$) and body-focused self-esteem (mean difference = 8.83, $p = .019$) conditions and had higher BMI than those in the body-focused self-compassion condition (mean difference = 5.27, $p = .014$). A χ^2 test of independence determined that there was no association between meeting clinical criteria on the EDI-1-BS and allocation to writing condition, $\chi^2(2) = .92$, $p = .631$.

Table 2 contains bivariate correlations between pre-treatment outcomes. Age was significantly positively associated with BMI, self-compassion, and lower valuation of appearance goals. No significant relationship was found between age and body appreciation and bulimic symptoms. Additionally, self-compassion and self-esteem were significantly associated with body appreciation and bulimic symptoms in the anticipated directions, such that they were both positively associated with body appreciation and negatively associated with bulimic symptoms. However, BMI was not significantly associated with bulimic symptoms, although the direction of the relationship is congruent with previous literature. Finally, self-esteem and self-compassion were significantly positively associated with each other.

Manipulation efficacy. Two 3 (condition) \times 2 (time) ANCOVAs were conducted to determine mean differences in self-compassion and self-esteem at each time point between participants across the three conditions. For pre-post differences in self-compassion, there was a non-significant main effect of condition, $F(2, 120) = 0.47$, $p = .629$, $\eta_p^2 = .008$, a

Table 2. Bivariate Correlations of Outcomes at Pre-Treatment.

Outcome	2	3	4	5	6	7	8
1. Age	.31**	.17*	.14	.20*	.01	.22*	.04
2. BMI	—	.04	.01	-.05	-.18*	-.02	.12
3. SCS		—	.67**	.38**	.59**	.15	-.24**
4. RSE			—	.34**	.64**	.22**	-.34**
5. AI				—	.48**	.21*	-.23**
6. BAS					—	.19*	-.31**
7. HUEBS						—	-.06
8. EDI-1-BS							—

Note. BMI = body mass index; SCS = Self-Compassion Scale; RSE = Rosenberg Self-Esteem Scale; AI = Aspiration Index; BAS = Body Appreciation Scale; HUEBS = Healthy and Unhealthy Eating Behavior Scale; EDI-1-BS = Eating Disorder Inventory 1-Bulimia subscale. * $p < .05$. ** $p < .001$.

significant main effect of time, $F(1, 120) = 4.86, p = .029, \eta_p^2 = .038$, and a significant interaction between time and condition, $F(2, 120) = 4.62, p = .012, \eta_p^2 = .071$. Simple effects demonstrated that women in the body-focused self-compassion writing condition increased in self-compassion over time ($p < .001, \eta_p^2 = .129$), whereas women in the body-focused self-esteem ($p = .942, \eta_p^2 = .000$) and control ($p = .116, \eta_p^2 = .020$) conditions did not. For pre–post differences in self-esteem, there was a significant main effect of condition, $F(2, 120) = 4.02, p = .021, \eta_p^2 = .063$, a significant main effect of time, $F(1, 120) = 4.46, p = .037, \eta_p^2 = .036$, and a significant time by condition interaction, $F(2, 120) = 3.37, p = .038, \eta_p^2 = .053$. Simple effect analyses demonstrated that women in the body-focused self-compassion ($p = .006, \eta_p^2 = .060$) and body-focused self-esteem ($p < .001, \eta_p^2 = .193$) conditions increased in self-esteem over time, whereas women in the control condition did not ($p = .150, \eta_p^2 = .017$). Based on the effect sizes, the body-focused self-esteem condition increased the most in self-esteem. Overall, the writing interventions were considered successful based on these findings.

Inter-rater reliability. There was strong agreement between both raters when rating how much each participant's entry exhibited resemblance to the prompts used in each condition ($k = .89, p < .001$). Raters also had high accuracy when asked to indicate which condition each participant had been randomized to (self-compassion = 80%, self-esteem = 90%, and control = 90%). When discrepancies occurred, raters came to a consensus by reviewing the prompts for each condition.

Main Analyses

Group differences in health-oriented weight management goals. A 3 (condition) \times 2 (time) ANCOVA was conducted to determine mean differences in importance of health-oriented versus appearance-oriented weight management goals from pre- to post-treatment between participants in the

body-focused self-compassion, body-focused self-esteem, and control conditions. There were non-significant main effects of group, $F(2, 114) = 1.05, p = .352, \eta_p^2 = .018$, and time, $F(1, 114) = 0.00, p = .962, \eta_p^2 = .000$, and a non-significant time by condition interaction, $F(2, 114) = 3.55, p = .032, \eta_p^2 = .059$. As there were no significant main or interaction effects, post hoc analyses were not conducted.

Group differences in body appreciation. A 3 (condition) \times 2 (time) ANCOVA was conducted to determine mean differences in body appreciation at each time point between participants in the body-focused self-compassion, body-focused self-esteem, and control conditions. There were non-significant main effects of condition, $F(2, 121) = 2.25, p = .110, \eta_p^2 = .036$, and time, $F(1, 121) = 0.01, p = .918, \eta_p^2 = .000$, and a non-significant time by condition interaction, $F(2, 121) = 0.50, p = .606, \eta_p^2 = .008$. As there were no significant main or interaction effects, post hoc analyses were not conducted.

Group differences in healthy eating behaviors. A 3 (condition) \times 2 (time) ANCOVA was conducted to determine mean differences in healthy eating behaviors at each time point between participants in the self-compassion, self-esteem, and control conditions. There were non-significant main effects of condition, $F(2, 113) = 0.61, p = .547, \eta_p^2 = .011$, and time, $F(1, 113) = 0.83, p = .365, \eta_p^2 = .007$, and a non-significant time by condition interaction, $F(2, 113) = 4.13, p = .019, \eta_p^2 = .068$. As there were no significant main or interaction effects, post hoc analyses were not conducted.

Group differences in bulimic symptoms. A 3 (condition) \times 2 (time) ANCOVA was conducted to determine mean differences in bulimic symptoms at each time point between participants in the body-focused self-compassion, body-focused self-esteem, and control conditions. Figure 1 shows women's bulimic symptoms from pre- to post-treatment. Figure 1 shows that there were non-significant main effects of condition, $F(2, 119) = 3.68, p = .028, \eta_p^2 = .058$, and time, $F(1, 119) = 4.96, p = .028, \eta_p^2 = .040$, and a significant time by condition interaction, $F(2, 119) = 24.43, p < .001, \eta_p^2 = .291$. Simple effect analyses demonstrated that women in the body-focused self-compassion condition significantly decreased in bulimic symptoms over time ($p < .001, \eta_p^2 = .331$), but women in the body-focused self-esteem condition ($p = .093, \eta_p^2 = .024$) and control condition showed no changes ($p = .876, \eta_p^2 = .000$).

Significant clinical changes. Of the 32 women who met clinical cut-offs on the EDI-1-BS at pre-treatment, 16 (50%) demonstrated a clinically significant change from pre- to post-treatment. A Fisher–Freeman–Halton exact test revealed that clinically meaningful change was associated with writing condition, $p = .019$, Cramer's $V = .520$. Post hoc analyses revealed that clinically meaningful change was associated with being in the body-focused self-compassion condition ($p = .003, n = 10$; 83% changed), but not the body-focused

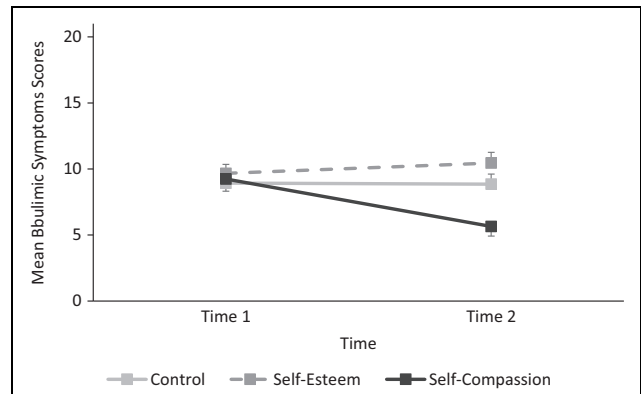
self-esteem ($p = .144$, $n = 4$; 33% changed) or control conditions ($p = .100$, $n = 2$; 25% changed). See the number of participants who did and did not exhibit a clinically significant change in bulimic symptoms at post-test for each condition in Figure 2.

Discussion

In the current study, we examined the efficacy of a brief body-focused self-compassion intervention compared to a body-focused self-esteem and control writing interventions on adult women's body appreciation, valuation of health-oriented (vs. appearance) weight management goals, healthy (vs. unhealthy) eating behaviors, and bulimic symptoms. Our findings suggest that brief daily writing exercises tailored toward increasing self-compassion can be useful in reducing bulimic symptoms and increasing self-esteem and self-compassion in women in the short term. In particular, reductions in bulimic symptoms were found to be clinically significant, suggesting that increasing self-compassion may be more beneficial than increasing self-esteem because it reduces bulimic symptoms. Finally, this study demonstrated that for all outcomes of interest, the number of journal entries completed had no effects on observed changes over time or on the efficacy of conditions. This suggests that completing at least four exercises over a period of 7 days may be sufficient to provide favorable results for body-focused self-compassion writing interventions.

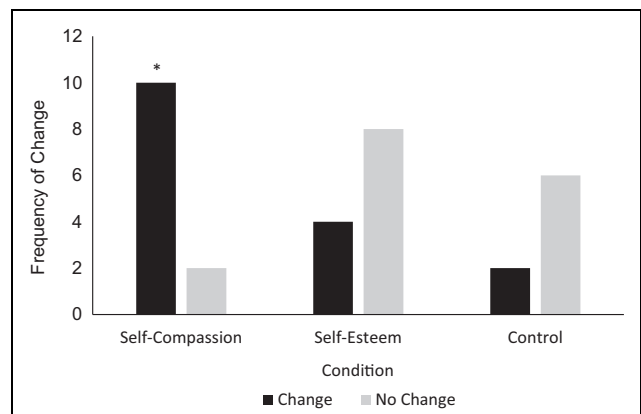
Congruent with hypotheses, women in the body-focused self-compassion condition increased in self-compassion (large effect) and decreased in bulimic symptoms over time (large effect) compared to the body-focused self-esteem and control conditions. Reductions in bulimic symptoms were clinically meaningful with the majority of women meeting clinical criteria allocated to this condition improving from pre- to post-treatment (83%; large association). Our findings are in line with other studies that show that brief self-compassion interventions can increase levels of self-compassion (Leary et al., 2007; Mosewich et al., 2013; Seekis et al., 2017) and help reduce eating disorder symptoms (Biber & Ellis, 2019; Turk & Waller, 2020), including weekly binge eating (Kelly & Carter, 2015). Clinically meaningful changes in other eating disorder indices, such as global symptom scores (Kelly & Carter, 2015), body dissatisfaction, and drive for thinness (Seekis et al., 2020), have also been demonstrated in other self-compassion interventions. Results from the manipulation check suggest that women in the body-focused self-compassion condition also increased in self-esteem (small effect) in addition to self-compassion; however, women in the body-focused self-esteem condition did not increase in self-compassion. Although this finding is exploratory and was not of primary interest to the study, these findings may demonstrate that being self-compassionate toward oneself when coping with momentary bouts of self-consciousness regarding one's body, eating, or exercise behaviors may protect feelings

Figure 1. Pre-Post Changes in Bulimic Symptoms Over Time by Condition.



Note. Control ($n = 39$), self-esteem ($n = 44$), and self-compassion ($n = 42$) expressive writing conditions from Time 1 to Time 2. Error bars represent the standard error of the mean.

Figure 2. Clinically Significant Changes in Bulimic Symptoms by Condition.



Note. Self-compassion ($n = 12$), self-esteem ($n = 12$), and control ($n = 8$). Asterisk represents observed larger than expected at $p < .008$.

of self-worth and competence (Albertson et al., 2014) in addition to helping women regulate their emotions. Affect-regulation theories of bingeing and purging suggest that symptoms are used to suppress or distract from negative emotions (Haynos & Fruzzetti, 2011). It is plausible that body-focused self-compassion interventions may reduce eating disorder symptoms by facilitating adaptive affect regulation (Turk & Waller, 2020). Being self-compassionate may reduce the likelihood of perceiving negative experiences as overwhelming (i.e., mindfulness), in turn, reducing the use of symptoms (i.e., binge or purging) as coping behaviors to nullify or avoid unwanted feelings while bolstering a sense of competence to overcome and control unwanted behaviors.

Contrary to hypotheses, women in the body-focused self-compassion condition did not demonstrate changes in body appreciation, valuation of weight management goals, and healthy eating behaviors. Studies that have found

moderate effects of self-compassion interventions on state body appreciation were longer in duration, compared the intervention to a waitlist control condition, and had a mindfulness component (Albertson et al., 2014) or reflected on a hypothetical scenario (Seekis et al., 2017). Self-compassion interventions that have integrated a mindfulness component affect body appreciation more robustly than waitlist (Albertson et al., 2014) and active control groups (Seekis et al., 2020). Furthermore, reflecting on a real compared to a hypothetical scenario may arouse more negative affect and body consciousness; therefore, a mindfulness component that focuses on mind-body connection may be essential to facilitate emotion regulation and positive body image. Women exposed to mindfulness audiotapes while undergoing a potential body self-conscious experience (i.e., trying on a bathing suit) demonstrated less negative affect and body dissatisfaction (C. E. Adams et al., 2013). Taken together, our null findings could be due to these methodological differences and low statistical power (i.e., 70%). Furthermore, the magnitude of the relationship between self-compassion and health-promoting behaviors is small (Sirois et al., 2015); therefore, higher statistical power may be required to detect significant changes in health-related outcomes as a result of engaging in self-compassionate writing.

Regarding the body-focused self-esteem writing condition, our hypotheses were partially supported. Congruent with hypotheses, women in the body-focused self-esteem condition increased in self-esteem, which is consistent with other studies employing similar writing interventions (Leary et al., 2007; Seekis et al., 2017); however, this is the first study, to our knowledge, to explore the effects of a body-focused self-esteem intervention on self-compassion. Another study employing a self-esteem writing intervention demonstrated that individuals in this condition exhibited fewer characteristics that are essential for self-compassion (Leary et al., 2007), which may explain why increasing women's self-esteem did not lead to increased self-compassion. For example, Leary and colleagues (2007) found that those in the self-esteem condition were less likely to attribute failure as caused by their own actions, were more likely to believe that their experiences were unique, and were more likely to experience negative affect as a result of self-reflection. Our findings may suggest that high self-esteem is not a prerequisite for engagement in body-focused self-compassion and that the moderate correlation between these concepts may exist because self-compassion increases feelings of self-worth by treating oneself with kindness and acceptance when experiencing bouts of self-consciousness.

Contrary to our hypotheses, women in the body-focused self-esteem condition did not increase in body appreciation. It is plausible that self-esteem interventions may be more effective in improving affective components of body image that are more specific to appearance satisfaction. Self-esteem writing may encourage positive self-evaluations, which lead

to more favorable social comparisons, reducing the discrepancy between actual and ideal body shape or size, thereby increasing appearance satisfaction (Seekis et al., 2017). Body appreciation, however, is a form of positive body image that moves beyond one's physical appearance and focuses on the acceptance of one's imperfections in addition to caring and respecting one's body (Avalos et al., 2005).

Contrary to our hypotheses, women in the body-focused self-esteem condition also did not decrease in bulimic symptoms over time. Although previous studies found that self-esteem interventions are effective in reducing dieting behaviors and attitudes (McVey & Davis, 2002; O'Dea & Abraham, 2000), these changes may be limited to specific weight-controlling methods (e.g., dieting) rather than eating disorder behavior specifically (McVey & Davis, 2002). Additionally, considering that women in the body-focused self-esteem condition did not increase in self-compassion, it is plausible that self-compassionate coping is essential to reduce bingeing and purging behaviors because self-compassion promotes better emotion regulation and, in turn, fosters self-regulatory resources (Sirois et al., 2015).

Strengths, Limitations, and Future Directions

The current study has several strengths. This is the only study to our knowledge to examine the effectiveness of body-focused self-compassion and body-focused self-esteem writing interventions on multiple affective (e.g., self-compassion, self-esteem, body appreciation), cognitive (e.g., weight management goals), and behavioral (e.g., bulimic symptoms, healthy and unhealthy eating behaviors) outcomes that affect women's body image, while controlling for important covariates identified in the literature (Turk & Waller, 2020). There are also several methodological strengths. The recruitment strategy (i.e., community members as well as undergraduates) and diversity of the sample in terms of education and age enhances the generalizability of the findings, provides insight on the usefulness and suitability (i.e., interest, practicality, comprehensibility) of such interventions in the community, and examines the influence of such interventions in currently underrepresented samples (i.e., Canadian women of all ages). Additionally, the current study asked participants to reflect on real life situations that occurred earlier in the day, which is more ecologically valid than asking participants to reflect on a hypothetical scenario. Manipulation checks and evaluation of written responses to assess the validity of the interventions are additional methodological strengths. Other strengths include randomization, an active control, and examining clinically significant change.

Although our study has many strengths, it also has limitations. The sample was ethnically homogenous, such that the sample mostly comprised White women. Future studies should examine the effects of these interventions in a more diverse sample because body dissatisfaction varies by ethnic

background (Grabe & Hyde, 2006), and research examining the efficacy of self-compassion interventions in samples of ethnic minorities is lacking (Turk & Waller, 2020). Furthermore, future research should examine the efficacy of these interventions in men because body dissatisfaction among men is prevalent (Mellor et al., 2010). Additionally, the buffering effects of self-compassion have been shown to be gender dependent with research suggesting that self-compassion may have a larger effect on men's mental health compared to women's (Bluth et al., 2017). Also, we used self-report measures, which may have resulted in socially desirable responding; however, research has found that some of the measures used in the current study are uncorrelated with social desirability scores (Avalos et al., 2005; Garner et al., 1983; Neff, 2003a). Additionally, more objective measures of dietary intake should be used (e.g., Food Frequency Questionnaire; Shim et al., 2014) as they are more accurate and appropriate to examine short-term change. Although participants could not presume our hypotheses from the description of the study, it is possible that participants interested in the study were women who frequently engage in self-reflective activities; therefore, it is plausible that women were using other techniques in addition to the prompts, leading to potential treatment contamination. Even though this study used an active control, women in this condition were not required to reflect on their bodies, eating, or physical activity habits, which is inconsistent with the body-focused self-compassion and body-focused self-esteem conditions, thereby functioning as a less effective control. Also, because the post-treatment survey was conducted 24 hours after the intervention, our findings must be interpreted with a degree of caution and better represent changes observed while women were engaging in tailored self-reflections rather than their true long-standing influences. Other limitations include low statistical power (i.e., ANCOVAs, 70%), that the non-disclosed entries were counted as incomplete, which introduces additional error into the data, and controlling for BMI and age. Controlling for BMI and age may have led to some scores, most notably healthy eating scores, to regress toward the mean.

Future research is required to examine the long-term effects of self-compassion interventions and the mechanisms by which these interventions promote positive body image and reduce eating disorder symptoms, including which components of self-compassion are most useful to promote these positive changes. For instance, a brief mindful self-compassion intervention with online Facebook discussions yielded changes in women's body appreciation, drive for thinness, upward social comparisons, and social appearance anxiety for up to 3 months. Seekis and colleagues (2020) speculated that some of these results could be due to the nature of their intervention, such that engaging in self-compassionate discussions about one's appearance online with other women could have fostered higher levels of common humanity. This may have lowered their

propensity to engage in social comparisons and reduced fear of negative evaluation, which facilitated unconditional acceptance and appreciation toward their own bodies (Seekis et al., 2020). Future studies should strive to further examine which components of self-compassion are related to changes in specific outcomes to establish consistency and which modality of intervention is best suited to help facilitate improvements in each aspect. Furthermore, future research should strive to examine whether favorable changes in weight management goals and healthy eating behavior can be obtained by self-compassionate writing. The low statistical power in the current study may have affected our ability to detect significant changes in some outcome measures. Further research is required to determine whether, with sufficient power, changes in other outcome measures would be found.

Practice Implications

Our study suggests that body-focused self-compassion writing interventions can be useful in increasing protective factors for adult women's body image and disordered eating, while reducing risk factors in the short term. As a preventive measure, children and youth should learn how to engage in self-compassion at an early age to develop a more stable positive self-attitude that is not contingent upon achievement, appearance, or social status. Policy makers, teachers, and parents can play a formative role in ensuring children and youth focus on harnessing self-compassion, which will protect them from fluctuations in their self-worth as they face many developmental (e.g., pubertal weight changes) and social (e.g., emphasis on popularity) changes. Our results also demonstrate that individuals have the capacity to follow self-guided writing activities to improve their own resilience when facing difficult or negative situations related to their bodies, eating behaviors, or physical activity. As these resources are widely accessible, cost effective, and can generate clinically meaningful change in eating disorder symptoms, clinicians and health care providers are encouraged to disseminate or facilitate these activities to improve well-being, psychological adjustment, and self-regulatory capacity in their clients. In addition, clinicians can provide brief psychoeducation on the components and utility of self-compassion and alter the focus of the writing activities to bolster self-compassion in different areas of their clients' lives.


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