

Self-Compassionate Writing Exercises Increase College Women's Body Satisfaction

Psychology of Women Quarterly
1-16
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sagepub.com/journalsPermissions.nav
DOI: 10.1177/0361684318773356
journals.sagepub.com/home/pwq



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Abstract

In three studies, we tested the effect of self-compassionate, body-compassionate, and body-functionality-focused writing exercises on college women's body satisfaction. In Study 1, two hundred fifty-one undergraduate women completed one of the four letter writing conditions: a general self-compassionate letter, a body-compassionate letter, a letter about body functionality, or a neutral writing task. In Study 2, two hundred forty undergraduate women completed one of the two compassion-focused conditions from Study 1, or one of the two new writing tasks that instructed participants to write either about their bodies or general selves, without any specific compassion cues. In both studies, participants in the compassion conditions reported significantly greater body satisfaction and positive affect relative to the neutral writing conditions. In Study 1, participants in the body-functionality condition also reported increased body satisfaction and positive affect relative to those in the neutral writing condition. Results for negative affect were inconclusive. In Study 3, the writing exercises were modified; we used an online format with 1,158 sorority women in the United States. Again, results indicated that both self-compassion-focused and body-functionality-focused writing led to higher body satisfaction and higher positive affect (relative to a control condition focused on writing about a recent, positive event); however, no effect on negative affect emerged. Clinicians, educators, and activists may consider using these types of compassionate or body-functionality-focused writing exercises as brief interventions for increasing body satisfaction in young women. *Additional online materials for this article are available at <https://osf.io/fvgcp>*

Keywords

body image, self-compassion, body functionality

Body dissatisfaction is defined as “negative subjective evaluations of one’s physical body, such as figure, weight, stomach, and hips” (Stice & Shaw, 2002, p. 985). Women’s dissatisfaction with their bodies is so prevalent that it has been described as normative (Rodin, Silberstein, & Striegel-Moore, 1984). Feeling bad about one’s body size or shape is often viewed as a typical part of being a woman (Bearman, Presnell, Martinez, & Stice, 2006; Tantleff-Dunn, Barnes, & Larose, 2011).

Objectification theory (Fredrickson & Roberts, 1997) provides a powerful framework for understanding women’s struggles with body image. According to this theory, frequent objectification by others may lead women to view their own bodies from an outsider’s perspective—a phenomenon referred to as self-objectification. Self-objectification is associated with negative body image outcomes including increased body surveillance, body shame, body dissatisfaction, and disordered eating (e.g., Engeln-Maddox, Miller, & Doyle, 2011; Frederick, Forbes, Grigorian, & Jarcho, 2007; Tiggemann & Kuring, 2004; Tylka & Hill, 2004). In addition, trait-level self-objectification is associated with higher levels of negative affect (Miner-Rubino, Twenge, & Fredrickson, 2002).

Body dissatisfaction plays a central role in the development of eating pathology (Mora-Giral, Raich-Escursell, Segues, Torras-Claraso, & Huon, 2004; Stice & Shaw, 2002). In addition to restricted eating, body dissatisfaction predicts emotional eating, abnormal attitudes toward eating and weight, and bulimic symptomatology (Johnson & Wardle, 2005). Among women, body dissatisfaction is also associated with depression (Paxton, Neumark-Sztainer, Hannan, & Eisenberg, 2006; Van den Berg et al., 2007) and anxiety (Kostanski & Gullone, 1998). Given these links, many eating disorder prevention programs target body dissatisfaction (Stice & Shaw, 2004).

Although a number of body image interventions have shown some success, that success often requires multisession interventions (Stice & Shaw, 2004; Yager & O’Dea, 2008). Effective and efficient interventions to address both

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momentary and long-term feelings of body dissatisfaction are still needed. In the current research, we conducted three studies (two in-person and one administered online) to explore the potential for brief writing interventions to reduce body dissatisfaction in college women. Two types of writing tasks were considered: self-compassion focused and body-functionality focused. Both approaches offer an alternative to an objectified view of one's body.

Self-Compassion and Body Image

The three core principles of self-compassion are self-kindness, common humanity, and mindfulness (Neff, 2003). Self-kindness entails treating oneself with warmth and understanding, often from the perspective of an unconditionally loving friend. Common humanity refers to the idea that all humans suffer and experience inadequacies and imperfections, which serves to remind one of the shared human experience. Mindfulness is often defined as a non-judgmental awareness of the present moment (Brown & Ryan, 2003) or "the awareness that emerges through paying attention on purpose, in the present moment, and nonjudgmentally to the unfolding of experience moment by moment" (Kabat-Zinn, 2003, p. 145).

Self-compassion has been found to both mitigate negative emotions and increase positive emotions (Neff, Rude, & Kirkpatrick, 2007). A recent meta-analysis of correlational studies indicated a large effect size for the negative association between self-compassion and psychopathology in general (MacBeth & Gumley, 2012). Self-compassion is also associated with increased happiness and overall well-being (Hollis-Walker & Colosimo, 2011).

From the perspective of objectification theory, chronic body monitoring often involves making comparisons between one's own body and culturally reinforced body ideals (Fredrickson & Roberts, 1997; Tylka & Sabik, 2010). Because these ideals are so out of reach for most women, these comparisons frequently lead to body shame (e.g., Myers & Crowther, 2009; Tiggemann & Slater, 2001). When women experience body shame, they are often hypercritical of their bodies, noting all the ways in which they fall short of the ideal. Because it focuses on a kind and accepting approach to oneself, self-compassion could provide an alternative to shameful, critical thoughts and feelings about one's body. Multiple correlational studies have found that self-compassion is associated with reduced body image disturbance (Mosewich, Kowalski, Sabiston, Sedgwick, & Tracy, 2011; Przedziecki et al., 2013). Self-compassion is negatively associated with body shame, drive for thinness, and body dissatisfaction in women and may reflect a way to enhance body acceptance and appreciation (Ferreira, Pinto-Gouveia, & Duarte, 2013). Higher levels of self-compassion predict fewer body and weight concerns and less preoccupation with body shape and size among college women (Wasylikiw, MacKinnon, & MacLellan, 2012). There

are several possible mechanisms through which self-compassion might reduce body dissatisfaction.

Appearance-based social comparisons (both with media images of women and with peers) are an important contributor to body dissatisfaction among women (Engeln-Maddox, 2005; Tiggemann, Slater, Bury, Hawkins, & Firth, 2013). In Western cultures, the body ideal is very thin, leaving many women to feel as though they are falling short of the cultural standard exemplified by media images (Groesz, Levine, & Murnen, 2002; Thompson & Stice, 2001). Self-compassion involves viewing one's experiences and perceived shortcomings as a part of the common human experience (Neff, 2003). By viewing self-perceived flaws as a part of the shared human experience, women may be less likely to shame their own bodies or compete with others regarding appearance. This could limit the upward appearance comparisons (i.e., comparisons with those perceived to be more attractive than oneself) that often promote body dissatisfaction among women (Wasylikiw et al., 2012).

Self-compassion could also serve as an alternative to self-esteem in reducing body dissatisfaction. For girls and women in particular, body-esteem is strongly related to overall self-esteem (Furnham, Badmin, & Sneade, 2002; Grilo, Wilfley, Brownell, & Rodin, 1994). Leary, Tambor, Terdal, and Downs (1995) proposed the sociometer hypothesis; they suggested that self-esteem functions as a monitor of an individual's level of inclusion or exclusion in a social group. Thus, self-esteem can fluctuate because of its contingency on the evaluations of others (Leary, 1999). In other words, according to the sociometer hypothesis (and consistent with a central premise of objectification theory), self-esteem relies on individuals' perceptions of how they are viewed and valued by others. In contrast, self-compassion is more independent of others' standards. In this way, self-compassion may be a more stable predictor of well-being than self-esteem (Neff & Vonk, 2009). Wasylikiw et al. (2012) found that self-compassion predicted women's body image even when controlling for self-esteem, suggesting that self-compassion may account for variance in body satisfaction above and beyond self-esteem.

Mindfulness is theoretically (Neff, 2003) a component of self-compassion with the potential to reduce body dissatisfaction. Self-compassion-based mindfulness practices may help women with body dissatisfaction create a more accepting, positive view of their bodies. Mindfulness involves being aware of one's suffering in a balanced way (e.g., acknowledging painful emotions without excessive rumination). Thus, women who are able to experience mindfulness may fixate less on perceived physical flaws (Albertson, Neff, & Dill-Shackleford, 2014). Indeed, mindfulness and body satisfaction are positively correlated (Dekeyser, Raes, Leijssen, Leyson, & Dewulf, 2008).

Although correlational research has shown a consistent association between self-compassion and positive body image, only a small number of experimental studies have

documented such effects. For example, Albertson and colleagues (2014) demonstrated that listening to self-compassionate meditation audio recordings increased self-compassion and improved body satisfaction among women during a 3-week intervention. Participants in the intervention condition listened to a 20-minute self-compassion meditation podcast once a day. Compared to the wait-list control group, women in the intervention condition reported less body dissatisfaction and less body shame at the end of the 3-week period. However, this study lacked an active control group, leaving it unclear whether any type of meditation might have had a similar effect. In addition, the 3-week time commitment would make this intervention difficult to implement in many settings.

Expressive writing is a brief, minimal-effort intervention that has been used to reduce depression and improve gratitude, happiness, life-satisfaction, well-being, and physical health (Burton & King, 2008; Seligman, Steen, Park, & Peterson, 2005; Toepfer & Walker, 2009; Toepfer, Cichy, & Peters, 2012). Self-compassionate letters may reduce depression and increase happiness, especially in individuals with self-critical traits (Shapira & Mongrain, 2010). Inducing self-compassion via writing prompts based on self-kindness, common humanity, and mindful acceptance has also been shown to decrease negative affect (Leary, Tate, Adams, Batts Allen, & Hancock, 2007).

In a recent experimental study, Murn (2013) explored the effects of an expressive writing task on self-compassion and body satisfaction using the Best Possible Self (BPS) approach (Markus & Nurius, 1986). This approach instructs individuals to write about their ideal future self. Although a few studies have found a positive association between writing about one's BPS and well-being (Harrist, Carlozzi, McGovern, & Harrist, 2007; King, 2001), the Murn (2013) study was the first to explore the relation between BPS writing tasks and body satisfaction. However, results indicated no significant differences in body satisfaction between the control and BPS intervention groups. Writing about one's BPS could be problematic for women facing body image concerns, as the BPS writing tasks may lead these individuals to dwell upon the ways in which their bodies are not ideal. Writing tasks may be promising tools to reduce body dissatisfaction, but successful writing tasks may require a specific focus on the elements of self-compassion.

Body Functionality and Body Image

Body functionality is an "internal body orientation" (Homan & Tylka, 2014, p. 101) that emphasizes focusing on what the body can do including physical capacities, health and internal processes, self-care, creative activities, and communication (Alleva, Martijn, Van Breukelen, Jansen, & Karos, 2015). An appreciation of the functions of one's body has been described as a key component of body image for young women (Wood-Barcalow, Tylka, & Augustus-Horvath,

2010). A focus on the functions of one's body can also be viewed as an alternative to self-objectification, given that self-objectification is defined by viewing one's body in terms of how it appears to others. A commonly employed measure of self-objectification, the Self-Objectification Questionnaire (Noll, 1996), asks respondents to rank how important 12 different attributes are for their physical self-concept. The notion behind the measure is that women whose physical self-concepts are more influenced by attributes such as health and stamina may self-objectify less than those whose physical self-concepts are more influenced by attributes such as weight and attractiveness.

A focus on body functionality may also prompt gratitude, as it can increase awareness of how essential the body is to everyday life (Alleva, Martijn, Jansen, & Nederkoorn, 2014). In this way, a body-functionality focus is also consistent with the mindfulness component of self-compassion, which is linked with increased gratitude (Watkins, 2014). Some initial evidence suggests that writing tasks focused on one's bodily functions (as opposed to physical appearance) can help mitigate negative body image (Alleva et al., 2014).

The Current Research

We examined whether brief and practical writing interventions based on principles of self-compassion or body functionality could lead to increased body satisfaction and positive affect and decreased negative affect among college-aged women. College women are a population of interest, given that adolescents and young women are particularly at risk of developing both sub-clinical and clinical eating disorder symptomology (Eisenberg, Nicklett, Roeder, & Kirz, 2011). In addition, the transition to college is often associated with the onset of eating disorders (American Psychiatric Association, 2013).

In both Studies 1 and 2, college women completed one of the several in-person letter-writing tasks followed by self-report measures of state-level body satisfaction and mood. In Study 3, college women (all members of sororities) from across the United States completed an online sentence-writing task designed to mimic the letter-writing exercises in Studies 1 and 2. All studies were approved by a university institutional review board. In studies in which participants were obtained from an introductory psychology participant pool, participants were assigned to the study by a participant pool coordinator and did not choose the study based on the research topic.

To facilitate comparison of effect sizes across these three studies, all effect sizes are reported as Cohen's *d*, and confidence intervals are reported for each effect size in Figure 1. Confidence intervals were calculated using the R package "compute.es" (Del Re, 2013). Superscripts after effect sizes reported below indicate where to find the relevant confidence interval in Figure 1.

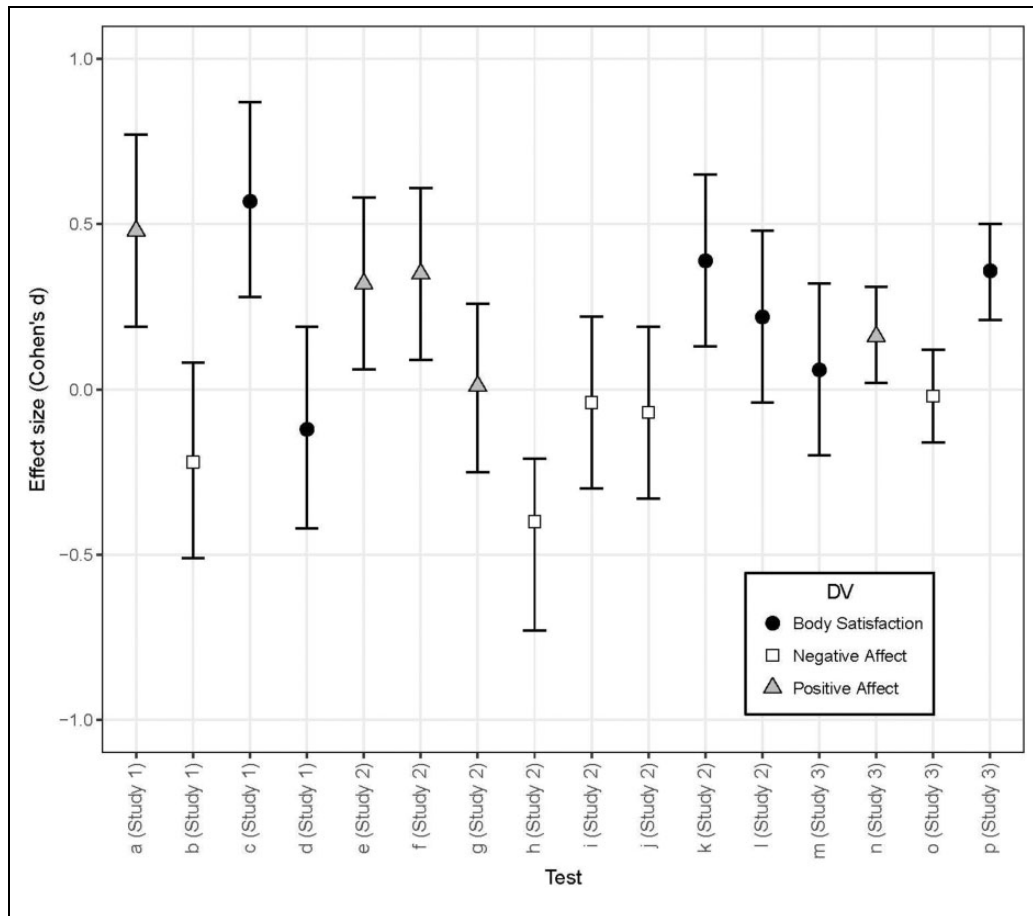


Figure 1. See superscripts in article to match lettered tests with effect sizes. ^aPositive affect: contrast comparing general self-compassion, body compassion, and functionality conditions to control condition (Study 1). ^bNegative affect: contrast comparing general self-compassion, body compassion, and functionality conditions to control condition (Study 1). ^cBody satisfaction: contrast comparing general self-compassion, body compassion, and functionality conditions to control condition (Study 1). ^dBody satisfaction: contrast comparing general self-compassion condition to body functionality and body compassion conditions (Study 1). ^ePositive affect: main effect of compassion cues (Study 2). ^fPositive affect: main effect of focus (body vs. general; Study 2). ^gPositive affect: interaction between compassion cues and focus (Study 2). ^hNegative affect: main effect of compassion cues (Study 2). ⁱNegative affect: main effect of focus (body vs. general; Study 2). ^jNegative affect: interaction between compassion cues and focus (Study 2). ^kBody satisfaction: main effect of compassion cues (Study 2). ^lBody satisfaction: main effect of focus (body vs. general; Study 2). ^mBody satisfaction: interaction between compassion cues and focus (Study 2). ⁿPositive affect: contrast comparing general self-compassion, body compassion, and functionality conditions to control condition (Study 3). ^oPositive affect: contrast comparing general self-compassion, body compassion, and functionality conditions to control condition (Study 3). ^pBody satisfaction: contrast comparing general self-compassion, body compassion, and functionality conditions to control condition (Study 3). DV = dependent variable.

Study 1

In Study 1, we randomly assigned college women to one of the four letter writing prompts: a non-specific self-compassionate letter, a self-compassionate letter directed toward the body, a letter about body functionality (as opposed to form and appearance), or a neutral prompt for the control group (see <https://osf.io/fvgcp/>). The first two prompts were both designed to induce self-compassion. However, the general self-compassion condition focused on personal strengths, weaknesses, and imperfections, whereas the body-compassion condition was directed specifically toward the body's strengths, weaknesses, and

imperfections. The body-functionality prompt encouraged participants to reflect on all that their body does to get them through each day.

First, we hypothesized that compared to the control condition, the general self-compassion condition, the body-compassion condition, and the body-functionality condition would lead to greater body satisfaction, greater positive affect, and less negative affect. This prediction is consistent with research reviewed above showing that self-compassion is associated with increased happiness and body satisfaction as well as decreased negative affect. Further, as illustrated above, recent studies have shown that taking on a functional perspective toward the body can also help women appreciate

and feel gratitude toward their bodies, leading to increased body satisfaction. Second, we hypothesized that the body-compassion and body-functionality prompts would lead to greater body satisfaction relative to the general self-compassion prompt because of their specific, positive focus on the body. An a priori power analysis using G*Power (Faul, Erdfelder, Lang, & Buchner, 2007) recommended a sample size of 180 participants for detecting a medium effect size with power of .80 and an α of .05. In order to be more conservative and account for the removal of any participants who might fail an attention check, we set a goal of a minimum of 250 participants.

Method

Participants

Participants were included in Study 1 if they were enrolled in a university at the time of the study, were above the age of 18, and identified as a woman. Two hundred and fifty-one undergraduate women ($M_{\text{age}} = 19.44$, $SD = 1.22$) from a Midwestern university participated (155 paid participants and 96 participants from an introductory psychology participant pool). Paid participants were compensated USD\$10; those from the participant pool received course credit. The recruitment flyer and social media posts for paid participants stated that the study was an investigation of the effects of letter writing on emotions. Upon completion of the writing tasks and dependent measures, participants were asked to report age, height, weight, and race/ethnicity. We used self-reported height and weight to calculate participants' body mass index (BMI), which ranged from 15.31 to 41.94 ($M = 22.42$, $SD = 3.68$). Three participants declined to report height and weight. Among those who reported height and weight, 5% ($n = 13$) of participants had a BMI less than 18.5, 80% ($n = 193$) had a BMI between 18.5 and 25, and 15% ($n = 36$) had a BMI greater than 25. Participants identified as White/Caucasian ($n = 106$, 43%), East Asian ($n = 63$, 26%), Black/African American ($n = 23$, 9%), Latina/Hispanic ($n = 18$, 7%), Multiracial ($n = 16$, 7%), South Asian ($n = 15$, 6%), Middle Eastern ($n = 2$, 1%), or Other ($n = 1$, <1%).

Procedure

Study participants were invited to come to a lab in a university building for 25 minutes and were randomly assigned to one of the four letter writing conditions: general self-compassion, body compassion, body functionality, or control. Based on the assigned condition, the research assistant administered the appropriate letter writing instructions. In a private room, participants typed a letter for 10 minutes. Following the 10-minute letter-writing period, the research assistant instructed participants to spend 5 minutes re-reading, editing, and reflecting upon their letters. This 5-minute period was included to encourage mindful

reflection. Finally, participants completed state-level measures of body satisfaction and mood.

Writing Prompts

See link (<https://osf.io/fvfgcp/>) for all Study 1 instructions. Participants in the general self-compassion condition received instructions based on Neff's self-compassion exercises (available online at <http://selfcompassion.org/>) that emphasized writing a letter to oneself from the perspective of an unconditionally loving friend. We also created two new writing prompts: one new condition mirrored Neff's general self-compassion writing exercise but specifically asked participants to address their bodies (the body-compassion condition), while an additional condition focused on body functionality by directing participants to write about their body's capabilities and functions (the body-functionality condition). The control group writing instructions asked participants to write about their previous day. Prior expressive writing studies have used similar control conditions so as not to elicit strong emotional reactions in participants (e.g., Murn, 2013; Romero, 2008).

Measures

Mood was measured using the brief version of the Positive and Negative Affect Schedule (PANAS; Watson, Clark, & Tellegen, 1988). The PANAS includes 20 emotion words such as *inspired*, *guilty*, and *proud*. Participants rated the extent to which they were experiencing each emotion "right now" (1 = *very slightly or not at all*, 5 = *extremely*). The scale includes a 10-word positive affect subscale and a 10-word negative affect subscale. Subscale scores are created by taking the mean of the relevant 10 items. Higher scores indicate higher levels of negative or positive affect, respectively. Scores on this scale are highly correlated with other short-term measures of affect and are sensitive to expected within-subject fluctuations in response to stress, social activity, and exercise (Watson, 1988). Using the "right now" instructions with a sample of college students, Cronbach's measure of internal consistency reliability has been reported at .85 to .88 (Watson et al., 1988). In the current sample, Cronbach's α was .92 for the positive affect sub-scale and .82 for the negative affect sub-scale.

State-level body satisfaction was measured using the 6-item Body Image States Scale (BISS; Cash, Fleming, Alindogan, Steadman, & Whitehead, 2002), which assesses how the participant feels in the present moment regarding physical appearance, body shape and size, weight, and physical attractiveness. Participants respond using 9-point fully anchored response scales. For example, in 1 item, "Right now I feel..." is followed by nine options ranging from *a great deal worse about my looks than I usually feel* to *a great deal better about my looks than I usually feel*. The scale is scored by taking the average of the 6 items (after reverse scoring

Table 1. Means, Standard Deviations, and 95% Confidence Intervals (CIs) for Each Condition (Study 1).

Dependent Variables	Condition							
	General Self-Compassion Condition (n = 62)	95% CI	Body-Compassion Condition (n = 61)	95% CI	Body-Functionality Condition (n = 60)	95% CI	Control Condition (n = 61)	95% CI
Positive affect ^a	2.76 (0.92)	[2.52, 2.99]	2.69 (1.02)	[2.40, 2.91]	2.87 (0.90)	[2.36, 3.10]	2.33 (0.82)	[2.12, 2.54]
Negative affect ^b	1.38 (0.44)	[1.27, 1.49]	1.43 (0.51)	[1.29, 1.56]	1.35 (0.43)	[1.24, 1.47]	1.49 (0.53)	[1.35, 1.62]
Body satisfaction ^c	5.92 (1.34)	[5.58, 6.26]	5.97 (1.42)	[5.58, 6.32]	6.19 (1.27)	[5.86, 6.51]	5.27 (1.27)	[4.49, 5.59]

^aScores indicate participants' mean positive affect scores on the short form of the Positive and Negative Affect Schedule (PANAS). Possible scores range from 1 (low levels of positive affect) to 5 (high levels of positive affect). ^bScores indicate participants' mean negative affect scores on the short form of the PANAS. Possible scores range from 1 (low levels of negative affect) to 5 (high levels of negative affect). ^cScores indicate participants' mean score on the Body Image States Scale. Possible scores range from 1 (low body satisfaction) to 9 (high body satisfaction).

where necessary); higher scores indicate higher levels of body satisfaction. BISS scores are sensitive to context (e.g., higher when the respondent imagines being their ideal weight and lower when the respondent imagines looking through fashion magazines), show moderate correlations with trait-like measures of body image disturbance, and show gender differences consistent with the literature on body image (Cash et al., 2002). In samples of college women, Cronbach's internal consistency reliabilities were reported as .77 (Cash et al., 2002) and .85 (Van den berg & Thompson, 2007). In the current sample, Cronbach's α was .79.

Results

Data Cleaning

To check attention, we added a seventh item to the BISS (with the stem "Right now I feel" and response options similar to the other BISS items) and asked participants to select the "much worse" option as the answer; this item was not included in calculations. Participants' data were excluded from all analyses if they failed this attention check. Seven participants failed the check, leaving 244 participants for the analyses below. BMIs of women recruited from the course participant pool did not differ from those of paid participants, $t(239) = 0.76, p = .45$. Analysis of patterns of missing data revealed that less than .3% of all items for all cases were missing, and 81% of items were not missing data for any case. Eighty-nine percent of participants had no missing data. Finally, no item had 3% or more of missing values. Given the low levels of missing data and consistent with recommendations by Parent (2013), available item analysis (i.e., pairwise deletion) was used for the analyses below. In other words, we excluded missing data points only for analyses in which those missing points would be directly involved. Using Levene's test, none of the dependent variables violated the assumption of homogeneity of variance (all $ps > .25$). To test for a possible influence of recruitment method (i.e., paid participants vs. participants from the introductory

psychology course) on the effects of the manipulation, we conducted a Multivariate Analysis of Variance (MANOVA) with all three dependent variables (DV), entering condition as one independent variable (IV) and recruitment method as the second IV. The interaction between recruitment method was not significant, Wilks's $\Lambda = .97, F(9, 567.21) = 0.82, p = .60$, suggesting that the effect of condition did not vary by recruitment method. See Table 1 for descriptive statistics for all conditions, and Figure 1 for effect sizes for all primary analyses (with confidence intervals).

Positive and Negative Affect and Body Satisfaction

As predicted, a contrast comparing the three experimental conditions to the control condition showed greater positive affect in the experimental groups relative to the control group, $t(240) = 3.25, p = .001, d = .48^a$. Exploratory analyses (using Tukey's correction) indicated no significant differences between the three experimental conditions (all $ps > .72$). For negative affect, the contrast comparing the three experimental conditions to the control condition was not significant, $t(239) = -1.46, p = .15, d = -.22^b$. Exploratory analyses (using Tukey's correction) indicated no significant differences between any of the three experimental conditions (all $ps > .85$).

Consistent with findings for positive affect, the planned contrast comparing participants in the three experimental letter writing conditions to those in the control condition indicated significantly greater body satisfaction for experimental conditions, $t(240) = 3.87, p < .001, d = .57^c$. However, a second contrast comparing the body-compassion and body-functionality conditions to the general self-compassion condition indicated no significant difference in body satisfaction, $t(240) = -0.74, p = .46, d = -.12^d$, despite the fact that the former conditions were specifically focused on the body. Once again, exploratory analyses (using Tukey's correction) indicated no significant differences between any of the three experimental conditions (all $ps > .69$).

Discussion

All three letter-writing interventions resulted in a moderate increase in body satisfaction and positive affect relative to the control group, with effect sizes around half a standard deviation. Although we predicted that the writing interventions specifically focused on the body (body compassion and body functionality) would have a greater effect on body satisfaction, these two conditions did not stand out relative to the general self-compassion condition. Negative affect scores for the control group did not differ from any of the letter-writing conditions.

Overall, the results of Study 1 were promising, demonstrating the potential for brief writing tasks incorporating self-compassion or body functionality to result in positive, short-term psychological outcomes. However, because there were no significant differences between the body-compassion condition, the general self-compassion condition, and the body-functionality condition in terms of increasing body satisfaction or positive affect, it is possible that the letter writing interventions were effective simply because they were all positive and self-focused. Consequently, it is difficult to say what specific element of the writing tasks might account for the desired effect on body satisfaction. In Study 2, we modified the design of Study 1 to address this question directly.

Study 2

We developed Study 2 with several goals in mind. First, we aimed to replicate the findings of Study 1 regarding the effectiveness of the two self-compassion conditions (general self-compassion and body-compassion) in increasing body satisfaction and positive affect. Second, we hoped to tease out the relative effects of a specific focus on the body versus a more general self-focus. In other words, we wanted to clarify whether a self-compassion manipulation has positive effects beyond a self-focused manipulation without specific compassion cues and whether directing participants to focus on the body (vs. the general self) makes a difference. We also hoped to rule out the possibility that the results for positive affect seen in Study 1 were simply due to completing a highly self-reflective writing task. The control condition in Study 1 was designed to be neutral (participants wrote about their previous day), but, as a result, it was less focused on attributes of the self than the three experimental conditions.

To explore these questions and maintain adequate statistical power without requiring a larger number of participants, we dropped the functionality condition for Study 2 and created two new control conditions. In one control condition, we asked participants to describe their body; in the second control condition, we asked participants to describe themselves (with no specific reference to the body in the instructions). This allowed us to systematically vary both body focus and self-compassion via a 2 (Focus [Body, General]) \times 2

(Compassion Cues [Present, Absent]) design. In other words, we were able to test whether self-compassion, rather than simply the act of self-reflective writing, was associated with increased body satisfaction.

We predicted a main effect of self-compassion cues, such that participants in the two self-compassion conditions would report significantly greater body satisfaction and positive affect than individuals in the neutral writing conditions regardless of body focus. Second, we predicted an interaction, such that writing about the body would increase body satisfaction and positive affect only when accompanied by self-compassion cues. Although we did not find significant results for negative affect in Study 1, we retained this variable for Study 2 (conducting the same analyses with negative affect as with positive affect). We used the effect size for positive affect from Study 1 (given that it was the smaller of the two key effects) to run an a priori power analysis using G*Power (Faul et al., 2007). For the two main hypotheses (one main effect and one interaction), G*Power recommended a minimum sample size of 232 participants for a power level of .80 and an α of .05.

Method

Participants

Inclusion criteria for Study 2 were identical to those of Study 1. Two hundred and forty undergraduate women ($M_{\text{age}} = 19.31$, $SD = 1.30$) from a Midwestern university participated (110 paid participants and 130 participants from an introductory psychology participant pool who received course credit). Paid participants were compensated \$10 and were recruited with the same materials used in Study 1. Participants' BMI values ranged from 15.94 to 44.09 ($M = 22.03$, $SD = 3.89$). In Study 2, 10% ($n = 24$) of participants reported BMIs less than 18.5, 76% ($n = 177$) between 18.5 and 25, and 14% ($n = 33$) above 25. Participants identified as White/Caucasian ($n = 108$, 46%), East Asian ($n = 54$, 23%), Black/African American ($n = 14$, 6%), Latina/Hispanic ($n = 27$, 12%), Multiracial ($n = 19$, 8%), South Asian ($n = 8$, 3%), Middle Eastern ($n = 3$, 1%), or Other ($n = 1$, <1%).

Procedure and Measures

The general procedure for Study 2 was identical to that of Study 1. The body-compassion letter writing task and the general self-compassion letter writing task were identical to the prompts used in Study 1, but two new control conditions were developed: a neutral self-prompt and a neutral body-prompt (see <https://osf.io/fvgep/>). The two new prompts instructed participants to write about themselves or their bodies from the perspective of someone who knows them (but no compassion cues such as "from the perspective of an unconditionally loving imaginary friend" were included).

Table 2. Means, Standard Deviations, and 95% Confidence Intervals (CIs) for Each Condition (Study 2).

Dependent Variables	Condition							
	Neutral Self Condition (n = 60)		General Self-Compassion Condition (n = 57)		Neutral Body Condition (n = 56)		Body-Compassion Condition (n = 59)	
	Mean (SD)	95% CI	Mean (SD)	95% CI	Mean (SD)	95% CI	Mean (SD)	95% CI
Positive affect ^a	2.66 (0.82)	[2.45, 2.87]	2.94 (0.89)	[2.70, 3.18]	2.37 (0.86)	[2.14, 2.60]	2.64 (0.84)	[2.42, 2.86]
Negative affect ^b	1.55 (0.60)	[1.40, 1.71]	1.35 (0.32)	[1.27, 1.44]	1.57 (0.62)	[1.41, 1.75]	1.31 (0.35)	[1.22, 1.40]
Body satisfaction ^c	5.55 (1.30)	[5.22, 5.89]	5.98 (1.11)	[5.69, 6.28]	5.76 (1.40)	[5.38, 6.13]	6.34 (1.33)	[5.99, 6.69]

^aScores indicate participants' mean positive affect scores on the short form of the Positive and Negative Affect Schedule (PANAS). Possible scores range from 1 (low levels of positive affect) to 5 (high levels of positive affect). ^bScores indicate participants' mean negative affect scores on the short form of the PANAS. Possible scores range from 1 (low levels of negative affect) to 5 (high levels of negative affect). ^cScores indicate participants' mean score on the Body Image States Scale. Possible scores range from 1 (low body satisfaction) to 9 (high body satisfaction).

Participants received the same state-level measures of body satisfaction and mood as those used in Study 1. In Study 2, Cronbach's α reliability coefficient was .76 for the BISS, .90 for the positive affect subscale of the PANAS, and .84 for the negative affect subscale of the PANAS.

Results

Data Cleaning

We used the same attention check from Study 1. Six participants failed the check, leaving 234 participants for analyses below. Once again, BMIs for paid participants did not differ from BMIs of participants recruited from the course participant pool, $t(232) = -1.18, p = .24$. Evaluation of missing data revealed that less than .5% of all items for all cases were missing, and 73% of items were not missing data for any case. Ninety-two percent of participants had no missing data. No items had 2% or more missing values. Once again, given overall low levels of missing data, available item analysis was used.

Using Levene's test, body satisfaction and positive affect did not violate the assumption of homogeneity of variance ($ps > .27$), but negative affect did ($p < .001$). Thus, analyses for negative affect were conducted using a modified analytic approach (see below). As noted, confidence intervals for effect sizes are contained in Figure 1 (and keyed to the superscripts below). See Table 2 for descriptive statistics for all conditions.

As in Study 1, we tested for a possible interaction between recruitment method (i.e., paid participants vs. participants from the introductory psychology course) and the experimental conditions. We conducted a MANOVA with all three DVs, entering compassion cues as one IV, focus as a second IV, and recruitment method as a third IV. The interaction between recruitment method and compassion cues was not significant, Wilks's $\Lambda = .99, F(3, 222) = 0.60, p = .62$. Likewise, the interaction between recruitment method and focus was not significant, Wilks's $\Lambda = .99, F(3, 222) = 0.53, p = .66$.

Positive Affect, Negative Affect, and Body Satisfaction

First, we conducted a two (Focus [Body, General]) \times 2 (Compassion Cues [Present, Absent]) between-subjects analysis of variance (ANOVA) for each DV. See Figure 1 for a summary of results. There was a significant main effect of compassion cues on positive affect, $F(1, 228) = 6.08, p = .01, d = .32^e$, with those in the compassion conditions reporting greater positive affect than those in the neutral conditions. There was also a significant main effect of focus, $F(1, 228) = 7.17, p = .008, d = .35^f$, with greater positive affect in non-body-focused conditions. However, the interaction between focus and compassion was nonsignificant, $F(1, 228) = 0.002, p = .97, d = .01^g$.

Because negative affect scores significantly violated the assumption of homogeneity of variance across conditions, instead of a traditional ANOVA, the main effects and interaction were parameterized in a regression model with heteroscedastic standard error estimates (Hayes & Cai, 2007). The overall model was statistically significant, $F(3, 288) = 4.34, p = .005, R^2 = .06$. We found a significant main effect of compassion cues on negative affect, $t = -2.22, p = .03, d = -.40^h$, with self-compassion cues leading to lower negative affect. The main effect of focus (body vs. general) was not significant, $t = -0.19, p = .85, d = -.04^i$. The interaction between focus and compassion was also not significant for negative affect, $t = -0.53, p = .59, d = -.07^j$.

There was a significant main effect of compassion cues on body satisfaction, $F(1, 228) = 8.96, p = .003, d = .39^k$. However, there was not a significant main effect of focus, $F(1, 228) = 2.74, p = .10, d = .22^l$, and the interaction between focus and compassion was not significant, $F(1, 228) = .21, p = .65, d = .06^m$.

Discussion

The primary aims of Study 2 were to determine whether self-compassionate letter writing (vs. self-reflective writing in general) was associated with increased body satisfaction and positive affect and to investigate whether body-specific or

general self-compassion was more effective at reducing body dissatisfaction among college women. Results supported our hypothesis that writing about oneself or one's body with self-compassionate language would lead to significantly greater body satisfaction and positive affect compared to writing about oneself or about one's body using neutral language. Participants in the two compassion conditions felt significantly more satisfied with their appearance relative to their counterparts in the neutral self-reflective writing conditions. These effect sizes (which were small to moderate) did not differ meaningfully from the effect sizes for positive affect and body satisfaction in Study 1. See Figure 1 to examine overlap between confidence intervals.

Despite null findings for negative affect in Study 1, results for Study 2 showed that participants who were given self-compassion cues reported significantly less negative affect than participants in the neutral writing conditions, with an effect size nearly twice that of a similar analysis in Study 1 (though still a small effect). However, the effect was in the same direction for both studies and the confidence intervals overlap substantially. Considered together, results from Studies 1 and 2 raise the possibility that self-compassionate writing may decrease negative affect, but a firm conclusion cannot be drawn from these data.

The significant main effects of self-compassion suggested that self-compassionate writing—and not just writing about oneself or one's body using neutral language—may increase body satisfaction and positive affect. Participants who wrote letters that were not specifically focused on the body reported greater positive affect than women who received body-focused instructions. This finding is consistent with research highlighting the potentially harmful effects of activated appearance schemata (i.e., enhanced attention to one's appearance) on mood (e.g., Brown & Dittmar, 2005). Yet, given the lack of similar findings for negative affect or body dissatisfaction, this result should be interpreted with caution until replicated.

In summary, results of Study 2 were generally consistent with Study 1, supporting the claim that self-compassionate letter writing interventions led to moderate increases in state-level body satisfaction and positive affect among college women. The writing tasks appeared to be effective primarily because they induced self-compassion. The focus of the letters—body versus general self—seemed to matter less.

Study 3

The primary objective of Study 3 was to test the effectiveness of a shorter and online version of the letter-writing tasks from Studies 1 and 2. In addition, based on the results of Study 2, the control condition was modified to more carefully examine the role of positive affect in the writing tasks. We randomly assigned women to one of the four online sentence writing tasks. Mirroring the writing interventions used in Study 1, the three experimental conditions included general self-

compassion, body-compassion, and body-functionality-focused writing. However, in a new control condition, we asked participants to write sentences about a recent positive event in their life. We developed this new control to examine whether a writing task about a positive life event alone might affect body satisfaction. In other words, we wanted to rule out the possibility that the promising interventions from Studies 1 and 2 showed effects on body satisfaction simply because they increased positive affect. In addition, we re-introduced the body-functionality condition from Study 1 into Study 3 in an attempt to replicate findings from Study 1 regarding the effectiveness of functionality-focused writing.

For the online task, participants were asked to write several sentences instead of full letters. Based on the results of Studies 1 and 2, we hypothesized that the three active sentence-writing tasks (general self-compassion, body compassion, and body functionality) would be associated with greater body satisfaction and positive affect relative to the control condition, despite the positive focus of the control condition. A power analysis based on the effect size for body satisfaction in Study 1 suggested a minimum sample size of 180 for this analysis. However, given the often-high rates of non-completion or failure of attention checks in online studies, combined with the likelihood of much smaller effect sizes from this less intensive writing task conducted outside of a laboratory setting, we set a significantly higher sample size goal of at least 1,000 participants in order to avoid being underpowered.

Because we aimed for such a large sample size, we chose to use sorority women as our sample for Study 3. Sorority women are easily reached for online recruitment efforts due to the availability of online contact information on sorority websites. Sorority women are also a population of interest for studies focusing on body satisfaction, as college women who join sororities have been found to demonstrate heightened attention to appearance and body image (Basow, Foran, & Bookwala, 2007). Members of sororities show increased body dissatisfaction relative to their counterparts who opt out of Greek life (Schulken, Pinciario, Sawyer, Jensen, & Hoban, 1997). Rolnik, Engeln-Maddox, and Miller (2010) found that new members of sororities displayed significantly higher levels of self-objectification, body shame, and food preoccupation compared to women who did not join sororities.

Although we employed a sorority sample, in part based on ease of recruitment, the fact that sorority women may be at higher risk for body image disturbance suggests the possibility that these writing interventions could show more effectiveness in a sorority sample compared to a more general sample of college women. More specifically, one could conceptualize the population of sorority women as "at risk" for body image disturbance. Targeting high-risk participants often produces significantly larger intervention effects than a more universal approach (Stice & Shaw, 2004). Given the likely reduction in effect sizes due to a move from a more intensive lab-based task that required 10 minutes of writing

and a 5-minute review and edit period to a less intensive online task that required writing and then re-reading sentences (with no enforced timing), this was another consideration when choosing to work with a sorority population.

Method

Participants

One thousand one hundred and fifty-eight sorority women ($M_{\text{age}} = 20.15$, $SD = 6.33$) from universities across the United States accessed the study. Participants could choose to enter a raffle as thanks for their participation, with 1 in every 10 participants receiving a \$10 <http://Amazon.com> gift card. The recruitment materials stated that the study was investigating the effects of sentence writing on emotions. To recruit members of sororities, our research team e-mailed sorority presidents from universities around the United States inviting them to forward the survey link to their sororities' members. We also recruited through posts in sorority-specific Facebook groups.

Participants' BMIs ranged from 15.96 to 46.98 ($M = 22.41$, $SD = 3.49$), 8% ($n = 69$) of reported BMIs were under 18.5, 74% ($n = 633$) between 18.5 and 25, and 18% ($n = 155$) above 25. In Study 3, participants were primarily White/Caucasian ($n = 718$, 79%). Participants also identified as East Asian ($n = 56$, 6%), Multiracial ($n = 44$, 5%), Latina/Hispanic ($n = 34$, 4%), South Asian ($n = 20$, 2%), Black/African American ($n = 12$, 1%), Other ($n = 6$, <1%; e.g., Native American, "human"), or not reported ($n = 19$, 2%).

Procedure

For Study 3, in addition to the criteria from Studies 1 and 2, women were included only if they were an active sorority member. Participants were provided a link to a Qualtrics-hosted survey and were randomly assigned to one of the four sentence writing conditions: general self-compassion, body compassion, body functionality, or the positive control condition. Participants were asked to type sentences in response to the prompts provided. Upon writing seven sentences, participants were instructed to re-read and reflect upon their sentences. No timing requirements were enforced with respect to writing or reflecting on the sentences. Finally, participants completed state-level measures of body satisfaction and mood, followed by demographic questions.

Writing Prompts and Measures

See <https://osf.io/fvgcp/> for the full text of all Study 3 instructions. The prompts were similar to those used in Study 1, but in Study 3 the instructions were broken down into seven smaller sentence-writing tasks (e.g., "Write one sentence that highlights something your friend would say about you from the perspective of unlimited compassion"). The new control

sentence writing task asked participants to write seven sentences about a recent positive event in their life.

Participants in Study 3 received the same measures used in the previous studies. In Study 3, Cronbach's α reliability coefficients were .81 for the BISS, .91 for the positive affect sub-scale of the PANAS, and .88 for the negative affect sub-scale of the PANAS.

Results

Data Cleaning

Many participants did not fully complete the experimental task of writing seven sentences. Analyses indicated that less than 5% of those who completed fewer than four sentences passed the attention check—a much lower passing rate compared to the 89% passing rate of those who completed at least four sentences. Thus, we only analyzed data from participants who wrote at least four of the seven sentences. After excluding participants who had written three or fewer sentences (12% of the original sample), 1,020 participants remained. Among the women who wrote four or more sentences, 11% ($n = 111$) failed the attention check. The remaining 909 participants were included in the analyses of Study 3.

Analysis of patterns of missing data revealed that only 1.6% of all items for all cases were missing. Ninety percent of participants had no missing data. All but 1 item had at least some missing data, but with the exception of BMI, no item had more than 2% missing data. Just under 6% ($n = 52$) of respondents opted out of completing height and weight (required for BMI calculations). This item specified that participants could choose not to answer. Given the low levels of missing data on DVs, available item analysis (i.e., pairwise deletion) was once again employed.

BMIs for participants in Study 3 did not significantly differ from the BMIs of women who participated in Studies 1 or 2, $t(1,330) = -0.93$, $p = .77$. However, the sample for Study 3 was slightly older ($M_{\text{age}} = 19.94$, $SD = 1.21$) than samples for Studies 1 and 2, $M_{\text{age}} = 19.38$, $SD = 1.26$, $t(1,366) = -8.02$, $p < .001$. Nonetheless, in all groups, 99% of respondents were between the ages of 18 and 22.

See Table 3 for descriptive statistics for all conditions. Using Levene's test, body satisfaction and negative affect did not violate the assumption of homogeneity of variance ($ps > .32$), but positive affect did ($p = .01$). Thus, in the results below, analyses for positive affect are reported with a correction for unequal variances. Effect sizes for all analyses (with confidence intervals) are shown in Figure 1.

Positive Affect, Negative Affect, and Body Satisfaction

For positive affect, a planned contrast comparing participants in the three experimental letter writing conditions to those in the control condition was significant, $t(478.55) = 2.23$, $p = .03$, $d = .16^n$. Those in the experimental conditions reported higher positive affect than those in the control

Table 3. Means, Standard Deviations, and 95% Confidence Intervals (CIs) for Each Condition (Study 3).

Dependent Variables	Condition							
	General Self-Compassion Condition (n = 209)		Body-Compassion Condition (n = 191)		Body-Functionality Condition (n = 245)		Positive Control Condition (n = 264)	
	Mean (SD)	95% CI	Mean (SD)	95% CI	Mean (SD)	95% CI	Mean (SD)	95% CI
Positive affect ^a	2.75 (0.77)	[2.65, 2.86]	2.66 (0.95)	[2.53, 2.80]	2.73 (0.86)	2.62, 2.84]	2.58 (0.86)	[2.47, 2.68]
Negative affect ^b	1.74 (0.74)	[1.64, 1.84]	1.69 (0.69)	[1.59, 1.79]	1.69 (0.73)	1.59, 1.77]	1.72 (0.65)	[1.64, 1.80]
Body satisfaction ^c	5.44 (1.49)	[5.21, 5.63]	5.83 (1.49)	[5.62, 6.05]	5.66 (1.51)	5.46, 5.84]	5.12 (1.41)	[4.94, 5.29]

^a Scores indicate participants' mean positive affect scores on the short form of the Positive and Negative Affect Schedule (PANAS). Possible scores range from 1 (low levels of positive affect) to 5 (high levels of positive affect). ^b Scores indicate participants' mean negative affect scores on the short form of the PANAS. Possible scores range from 1 (low levels of negative affect) to 5 (high levels of negative affect). ^c Scores indicate participants' mean score on the Body Image States Scale. Possible scores range from 1 (low body satisfaction) to 9 (high body satisfaction).

condition. The same contrast for negative affect was not significant, $t(891) = -0.28, p = .78, d = -.02^0$. Consistent with findings in Studies 1 and 2, the planned contrast comparing participants in the three experimental letter writing conditions to those in the control condition indicated significantly higher levels of body satisfaction for experimental conditions, $t(905) = 4.86, p < .001, d = .36^p$.

Discussion

Similar to the results from Studies 1 and 2, the three different writing interventions in Study 3 (one focused on general self-compassion, one on body compassion, and one on body functionality) outperformed a control writing task in terms of increasing state-level body satisfaction in a sample of college women. The effect size for body satisfaction in Study 3 was smaller than the effects in Studies 1 and 2, which is unsurprising given the briefer, online task. However, the confidence intervals for the three key effects still overlap substantially.

Results for positive affect followed the same pattern, with all three interventions leading to greater positive affect relative to the control condition. This result is particularly notable, given that the control writing task in Study 3 was modified to have an explicitly positive focus. It does not appear that simply writing about a positive event has the same effect as writing specifically from a self-compassionate or body-functionality perspective. Similar to the findings for body satisfaction, the effect size for positive affect was smaller in the third study compared to the first and second, but the confidence intervals for the effect sizes still overlapped. The (non-significant) effect size for negative affect was close to zero and significantly smaller than the main effect of compassion on negative affect in Study 2 (but overlapping with the effect size for Study 1).

Study 3 differed in two key ways from Studies 1 and 2. First, the sample for Study 3 was more constrained, including only sorority women. Second, the writing intervention in Study 3 was administered in an online format and required less intensive writing. The majority of participants in Study 3

spent less than 10 minutes on the entire study (including post-test measures and demographics), whereas the in-person participants wrote for 10 minutes and reviewed and edited their writing for an additional 5 minutes (in addition to completing post-test measures). Online tasks may also lose some of their effectiveness if participants complete them in distracting environments; a quiet, private lab room likely offered a more ideal space for focus and reflection. Despite sampling a relatively more at-risk group, it appears that this shortened, online format led to smaller effects on positive affect and body satisfaction relative to the in-person letter-writing tasks in Studies 1 and 2. However, for these two variables, confidence intervals for effect sizes overlapped across all three studies. Additional replications (especially replications with higher sample sizes for in-person tasks) would help to clarify the extent to which an online format may attenuate the effect of self-compassion or body-functionality-focused writing. It seems possible that the more coherent narrative created in a letter could be more compelling for participants than individual sentences that do not necessarily flow together. Although our assumption was that the writing interventions might have stronger effects in a sample of sorority women (compared to a general sample of college women), the change in both administration method and sample from Studies 1 and 2 to Study 3 makes it impossible to parse out effects from a change in task format versus a change in sample.

General Discussion

Across three studies of college women, results demonstrated the promise of brief writing interventions as a means of improving college women's immediate body satisfaction and positive affect. Three different types of writing prompts worked well: prompts focused on self-compassion, body compassion, and body functionality. According to objectification theory, women's body dissatisfaction arises (at least in part) from an internalization of ongoing experiences of objectification (Fredrickson & Roberts, 1997). Self-objectification can leave women hyper-aware of how their bodies deviate from a rigid cultural ideal. Interventions designed to prompt

self-compassion may help women treat themselves with more acceptance, self-kindness, and less shame when they are faced with such deviations. Our results are consistent with the findings that other self-compassion exercises can increase body appreciation and decrease body dissatisfaction, appearance-based self-worth, and body shame (Albertson et al., 2014). The current results are also in line with correlational studies linking self-compassion and decreases in body dissatisfaction (Mosewich et al., 2011; Wasylikiw et al., 2012). Findings from these three studies suggest that self-compassion is a useful tool for combatting body dissatisfaction regardless of whether the compassion cues are body-specific.

An objectification theory framework can also explain the positive outcomes associated with the body-functionality-focused writing tasks in Studies 1 and 3. Focusing on the functions of one's body (vs. how one's body looks) should be helpful to the extent that it is consistent with viewing the body as active instead of passive and objectified. Some prior research (Franzoi, 1995) has found that women are more likely than men to view their bodies as objects, whereas men are more likely to focus on their body's processes and functions. Likewise, on self-report measures, women tend to show higher levels of self-objectification than men (e.g., Frederick et al., 2007). These gender differences may account, in part, for findings that men tend to report greater body satisfaction than women. Self-report measures, such as the Embodied Image Scale (Abbott & Barber, 2010), could be used to clarify the extent to which focusing on body functionality mediates gender differences in body satisfaction.

A body-functionality focus may turn one's thoughts to all the things one's body does well and support a non-judgmental acceptance of perceived physical imperfections. For example, focusing on the helpful things your arms do for you each day may buffer dissatisfaction you might feel related to how your arms look. From this perspective, it makes sense that body-functionality-focused writing seems similarly effective to self-compassionate writing in combatting appearance-related concerns. A body-functionality focus may be an indirect route of increasing self-compassion. Consistent with this line of reasoning, prior research has shown that a functional view of the body is correlated with increased body satisfaction among adolescents (Abbott & Barber, 2010; Frisén & Holmqvist, 2010). Future studies examining covariation between self-compassion and body-functionality focus would be useful in teasing out this overlap.

Limitations of the Current Studies

Although the samples used in both Study 1 and Study 2 were moderately diverse in terms of ethnicity, they were limited to college students enrolled at a private Midwestern university. Study 3 reached a broader population, yet the sample was predominantly White and only included sorority women. Thus, results of these studies cannot be generalized to more diverse populations. Nonetheless, college-aged women are a

population of particular interest in body image research, as they are at a greater risk of experiencing body dissatisfaction (Klemchuk, Hutchinson, & Frank, 1990; Taylor et al., 2006) and developing eating disorders or sub-clinical eating pathology, compared to other women (Eisenberg et al., 2011).

Participants in the current studies were substantially more likely to fall into the "healthy" BMI range (as defined by the Centers for Disease Control, <http://cdc.gov>) relative to the general population of women in the United States. In addition, a number of participants opted not to report their height and weight (required for calculating BMI), and we could not control for BMI in these analyses. Future research could examine whether participant BMI moderates the effect of self-compassion or functionality-focused exercises. The current studies focused on women because women tend to be more dissatisfied with their bodies (Frederick, Peplau, & Lever, 2006) and are more likely to develop anorexia and bulimia (Hoek, 2006) than men. However, future studies could investigate the effectiveness of self-compassion or body-functionality writing exercises in men as well.

In all three of the current studies, dependent variables were measured using state-level scales immediately after the writing exercise, so it is unknown whether the benefits of self-compassionate writing would last more than a few minutes. In the future, researchers should investigate longer-term effects of self-compassionate or body-functionality-focused letter writing on body satisfaction.

The control conditions we used also have limitations. In Study 1, we asked participants in the control condition to write about their previous day; we did not intend to elicit strong emotional reactions in participants, yet many of the undergraduate women wrote about stressful events. Therefore, the control condition may not have been as neutral as intended. In future replications of the current research, researchers may need to alter this control condition. In Study 2, many participants in the neutral writing conditions incorporated elements of self-compassion into their letters despite the fact that compassion cues were absent; we asked participants to address themselves or their bodies from the perspective of someone who knows them. The person most women thought of was likely a close other (many participants began their letter with "Dear Friend"), and thus someone likely to approach them with compassion. This may have reduced the relative impact of the experimental conditions versus the control conditions. Researchers could modify the neutral writing control conditions in order to eliminate any indirect self-compassion cues. Instead of asking participants to write from the perspective of "someone who knows you well," or "someone who knows your body well," a future control condition could avoid these cues and simply focus on self-description.

Practice Implications

Given the number of women who struggle with negative body image and its correlates, clinicians and educators could

benefit from the availability of brief interventions that can be easily and inexpensively administered in groups or in an online format. Although further research is needed to replicate the effects reported in this article and more fully understand their underlying mechanisms, our results suggest three different writing prompts have the potential to increase body satisfaction and positive affect. These writing prompts require little time to complete (15 minutes for full letters, less for prompting individual sentences) and no special expertise to administer. They could be employed in classroom settings or a variety of group or individual treatment settings.

Those administering these tasks could offer participants an electronic (or hand-written) copy of their responses, which participants could keep. Women could also be encouraged to continue to expand and reflect on what they have written, or share their responses with others. In this way, the exercise can continue to have utility beyond its initial administration. In our in-lab tests of these writing prompts, several participants asked if they could keep a copy of the letter they wrote. We suspect this indicated that they found their responses helpful and hoped to revisit them.

The results of these studies also hint at the power of incorporating a focus on self-compassion and body functionality into work with women struggling with body image disturbance. However, given the findings that body dissatisfaction is associated with appearance-focused cognitions (e.g., Cash, Melnyk, & Hrabosky, 2004; Hargreaves & Tiggemann, 2002), those working with women who may be particularly vulnerable to body dissatisfaction (e.g., those in treatment for eating disorders) may opt to use general self-compassion prompts over body-compassion prompts. Although the body-compassion prompts were effective in this study, instructing women to focus on their bodies without sufficient compassion cues may run the risk of heightening self-objectification or inadvertently activating appearance-related schemata in a negative way.

Creative practitioners could likely create a variety of activities based on the prompts used in these studies. Of course, further research would be needed to evaluate the efficacy of such exercises.

Conclusions and Future Directions

Several lines of research support the notion that self-compassion can play an important role in the context of body image (Adams & Leary, 2007; Kelly, Carter, & Borairi, 2014; Tylka, Russell, & Neal, 2015). Given the key role of body dissatisfaction in disordered eating, the current studies add to this body of research and point toward the possibility of self-compassion playing a role in the prevention and treatment of eating disordered behaviors. However, research in clinical settings is required to determine whether the specific brief writing tasks used in the current studies could be useful for work with populations with eating disorders. Likewise, longitudinal research studies with multiple writing exercises over time could help to determine the potential for

self-compassionate or body-functionality writing cues to lead to lasting changes in women's body image.

Given the pervasiveness of women's dissatisfaction with their bodies, the current research provides a promising framework for future interventions targeting negative body image. We suggest that both self-compassionate and body-functionality-focused writing could be useful tools for young women facing body image concerns. Confronted by a society that perpetuates a rigid body ideal, young women may find it difficult to demonstrate self-compassion toward their bodies or to think of their bodies in terms of what they do instead of how they look. The writing tasks in these studies are efficient and easily administered to a large sample, so for women who struggle with negative body image and do not have time or resources to dedicate to time- and cost-intensive interventions, these tasks may be especially promising.

One participant in our body-compassion condition wrote, "When you look at your naked body in the mirror, be conscious of what you see. Don't immediately start picking yourself apart. I love you—all of you, and you should too. No one's body is perfect because no one is perfect: my body is imperfect just like yours. But, these imperfections are what make us who we are. They make you human, and that fact alone makes all of your imperfections perfect exactly the way that they are." Another young woman wrote, "Everything on this planet will either fade away or die; you are no exception. But the most beautiful thing about existence is that you have this finite time to create and love, so why waste precious time beating yourself up when you could simply embrace the infinite light that shines out of every pore on your skin?" These excerpts illustrate how participants were able to express the core pillars of self-compassion in their letters—self-kindness, common humanity, and mindfulness. If more young women could learn to see themselves from the perspective of an unconditionally loving friend, perhaps normative discontent could ultimately give way to normative content.

Authors' Note

Studies 1 and 2 were conducted as part of the first author's honors thesis in psychology at Northwestern University. Thank you to Northwestern's Body and Media Lab for assistance with data collection as well as Bill Revelle and Steven A. Miller for assistance with data analyses.

Declaration of Conflicting Interests

The author(s) declared no potential conflicts of interest with respect to the research, authorship, and/or publication of this article.

Funding

The author(s) disclosed receipt of the following financial support for the research, authorship, and/or publication of this article: Studies 1 and 2 were supported by a summer grant from Weinberg College of Arts and Sciences and an academic year grant from the Undergraduate Research Grants Program administered by Northwestern University's Office of the Provost.

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