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Understanding the relationship between self-compassion and body dissatisfaction

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Abstract

Body dissatisfaction reflects a person's negative perceptions, thoughts, and feelings regarding their body. Two factors—(1) self-compassion, a positive attitude of self-acceptance despite flaws, and (2) gratitude, the capability to notice and appreciate the positive aspects of life—may help to reduce body dissatisfaction. The present research aimed to provide further evidence for the relationship between gratitude, self-compassion, and body dissatisfaction and test whether meditation focusing on self-compassion can reduce body dissatisfaction. Two online studies were conducted with samples of adult women recruited in the United Kingdom ($N = 342$ and 117). Study 1 found that self-compassion, but not gratitude, significantly predicted lower levels of body dissatisfaction. Study 2 found that participating in a 3-week meditation program—whether focused on self-compassion or relaxation—increased self-compassion over time and reduced body dissatisfaction. Taken together, the findings that regular meditation can bring positive outcomes to women with body dissatisfaction, regardless of the specific focus or content of the meditation.

1 | INTRODUCTION

Body dissatisfaction is defined as a negative self-assessment of one's body; for example, the shape or size of the body or parts of the body (Stice & Shaw, 2002). Such negative self-assessment has multifactorial roots such as internalization of the thin ideal for women's bodies that is perpetuated in popular culture around the world (Fredrickson & Roberts, 1997), social comparison to ideal others as a basis of self-evaluation (Festinger, 1954), and perfectionism in pursuing unrealistic high body standards (Wade & Tiggemann, 2013). Body dissatisfaction is a serious problem because research has linked it to physical health problems, such as restrictive eating, and psychological issues such as low self-esteem, anxiety, and shame that can negatively affect women's health and sense of well-being (Albertson et al., 2015; Fredrickson & Roberts, 1997; Neff, 2021b; Turk & Waller, 2020). Evidence suggests that, compared to men, women have a higher incidence of experiencing body dissatisfaction (Esnaola et al., 2010; Forbes et al., 2001; Tiggemann & Pennington, 1990; Tylka & Huellemann, 2023). In addition, women's worth in society is often linked to their physical appearance such as body size and weight rather than other domains such as academic, or professional achievements (Esnaola et al., 2010).

To date, researchers have mainly focused on identifying the factors that increase women's levels of body dissatisfaction (e.g., self-objectification, social comparison, and perfectionism, Fredrickson & Roberts, 1997; Scully et al., 2023; Thompson & Stice, 2001; Wade & Tiggemann, 2013). However, other factors are protective in the sense that they help to prevent the origin, or reduce the impact, of a negative outcome (Levine & Smolak, 2016) or increase the chance of having a positive outcome (Smolak, 2012). For example, gratitude and self-compassion have both been associated with lower levels of body dissatisfaction (e.g., Albertson et al., 2015; De Wet, Lane, &

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Mulgrew, 2020; Ferreira et al., 2013; Fraser et al., 2022; Geraghty et al., 2010).

1.1 | Gratitude and body dissatisfaction

Trait gratitude has been defined as the ability to frequently notice and appreciate the positive aspects of life (Wood-Barcalow et al., 2010). People who are high in gratitude seem to have a set of adaptive skills that help them to maintain emotional equanimity (Wood-Barcalow et al., 2010) and gratitude has been associated with well-being (Kendler et al., 2003; Wood-Barcalow et al., 2010). Previous research has also suggested that gratitude is associated with body image (Dunaev et al., 2018; Geraghty et al., 2010; Wolfe & Patterson, 2017). For example, Geraghty et al. (2010) conducted a study in which participants had to write about what they were grateful for each day over a 2-week period. Participants in the gratitude group (n = 40) showed improvements in body and appearance satisfaction with pre-post effect sizes ranging from dz = 0.62 to 0.71. These results were later confirmed by Wolfe and Patterson (2017) in a study involving female undergraduates (n = 35). These studies employed general gratitude exercises, but it is possible that writing specifically focused on body gratitude could have similar reductions in body dissatisfaction. Additionally, this shift towards appreciating positive body aspects might also reduce the internalization of weight bias.

Dunaev et al., (2018) examined the effectiveness of body-focused gratitude through a short writing exercise to lower internalizes weight bias and increase levels of positive body image. Participants were randomly allocated in either a gratitude condition (n = 185) or a control condition (n = 184). Their results showed that participants in the gratitude condition reported lower levels of weight bias internalization and higher levels of positive body image when compared to the control condition (effect size d ranged from 0.27 to 0.33). Together, these findings suggest that there is an association between gratitude and body image variables such as, positive body image, body dissatisfaction, and internalization of weight bias.

1.2 | Self-compassion and body dissatisfaction

Another factor that may be protective is self-compassion. Self-compassion (Neff, 2009) encompasses three components that are inter-related and equally important. The first component is self-kindness which enables people to treat themselves with care and understanding rather than harsh judgment. The second component is common humanity, which refers to the idea that all human beings experience pain and failure and that, by accepting it, people can have a sense of company when suffering. The third component is mindfulness, which refers to observing negative thoughts and emotions and promoting awareness by being open when painful feelings or emotions arise. Research has found that higher levels of self-compassion are associated with lower levels of body dissatisfaction and being less likely to engage in disordered eating pathologies (Braun et al., 2016; Ferreira et al., 2013; Turk, & Waller, 2020; Wasylkiw et al., 2012).

This correlational research is supported by experimental research, which shows that interventions designed to promote self-compassion have a positive impact on a range of outcomes relevant to body image, including self-criticism (Gilbert & Irons, 2004), eating disorders (Kelly et al., 2017), positive body image (Ziemer et al., 2019) and body dissatisfaction (Albertson et al., 2015). For example, Albertson et al. (2015) randomly allocated participants to either a self-compassion meditation group or a waitlist control group. Participants were asked to meditate for 3 weeks and were then followed-up 3 months later. Intervention participants experienced significantly greater reductions in body dissatisfaction, body shame, and contingent self-worth based on appearance. Toole and Craighead (2016) replicated Albertson et al.'s (2015) method but reduced the time of the intervention from 3 weeks of meditation to 1 week in an effort to improve engagement and avoid high rates of attrition. This was successful (attrition was minimal), but Toole and Craighead did not find that self-compassion training had a positive effect on body image variables compared to participants in the waiting list control condition, perhaps because compliance with the online materials was low (see also Toole et al., 2021).

While these brief interventions highlight the potential of self-compassion in shaping body dissatisfaction, participants were either assigned to the self-compassion meditation group or to a waitlist control condition. This may have meant that participants differed in the expectation of positive results—that is, the positive effect of the self-compassion meditation could be explained by the placebo effect, which can only be ruled out with the inclusion of an active control group where participants receive a different treatment with the same expectation of success (Hróbjartsson and Gøtzsche, 2001). De Wet, Lane, and Mulgrew (2020) addressed this concern by allocating participants to either self-compassion meditation or a nature-focused guided imagery meditation that served as an active control group. De Wet et al. (2020), found no difference between the groups—women in both meditation groups demonstrated significant increases in self-compassion and body appreciation, and significant reductions in body shame. These findings support the importance of further research on evaluating the effects of self-compassion interventions using active control conditions and suggest that self-compassion may not have unique effects on body dissatisfaction.

Although different types of meditation and guided imagery have been found to reduce body dissatisfaction, this does not mean that they do so in the same way. That is, the mechanisms underlying the effects may differ. Previous research has not investigated the mechanisms that underpin the relationship between self-compassion and body dissatisfaction. Albertson et al. (2015) suggest that self-kindness, common humanity, and mindfulness (i.e., the three components of self-compassion) are mechanisms through which self-compassion lowered levels of body dissatisfaction. However, such mechanisms were not tested in their study—nor, perhaps more critically, in studies that find that active control conditions that do not

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involve self-compassion can also be beneficial (e.g., De Wet et al., 2020). Arguably, they are also *components* of self-compassion rather than discrete and separable mechanisms by which self-compassion is beneficial and so further research is needed to investigate the mechanisms that underpin the relationship between self-compassion and body dissatisfaction.

Current evidence suggests that three variables—(1) positive and (2) negative affect and (3) resilience—might explain the beneficial effects of interventions that promote self-compassion. Research has found that self-compassion is positively associated with positive affect and negatively associated with negative affect (Leary et al., 2007; Neff et al., 2007; Neff & Vonk, 2009). For example, Leary et al. (2007) found that (1) self-compassion was negatively associated with imagined events that conveyed negative affect, (2) participants high in self-compassion had more positive emotions and less negative emotions than participants low in self-compassion, and (3) self-compassion helped individuals to lessen the psychological impact of negative events. Previous research has also found evidence of a link between affect and body dissatisfaction (e.g., Colautti et al., 2011; LePage & Crowther, 2010).

Alternatively, or in addition to affect, self-compassion may also promote resilience. Resilience refers to the ability to recover from difficulties or adversity (Carver, 1998; Smith et al., 2008; Tusaie & Dyer, 2004). To date, the only published model of body image resilience (Choate, 2005) describes the social, structural, and psychological protective factors that improve body image, for example, support from family of origin and rejection of the superwoman ideal. However, no research has looked at the relationship between body image resilience, self-compassion and body dissatisfaction; although there are indications that such relationships may exist. For example, research suggests that self-compassion can help people to build emotional resilience (Kemper et al., 2015; Neff & McGehee, 2010), because when people accept their flaws, acknowledge that they are part of a common shared experience, and accept negative thoughts and emotions when they arise (Aspinwall, 1998; Neff, 2003a, 2003b) they are able to change negative affect to positive affect. It is expected that the same processes could mean that self-compassion also influences body image resilience; however, this hypothesis awaits empirical examination.

1.3 | Overview of hypotheses and studies

Study 1 used a correlational design to explore the relationships between self-compassion, gratitude, and body dissatisfaction. It was hypothesized that both self-compassion and gratitude would be negatively associated with body dissatisfaction (i.e., would be protective). Study 2 compared the effects of two forms of meditation (self-compassion and relaxation) in a randomized experimental mixed design. It was hypothesized that self-compassion meditation would reduce body dissatisfaction between baseline and post-test and that these effects would be explained by higher levels of positive affect, lower levels of negative affect and higher levels of body image resilience.

2 | STUDY 1

2.1 | Method

2.1.1 | Participants and procedure

A total of 523 individuals commenced the study by clicking a link to an online questionnaire. Participants who did not identify as women ($N = 24$), or who had received a diagnosis of an eating disorder ($N = 13$), or who did not complete any of the measures ($N = 143$) were dropped from the sample. The final sample consisted of 343 women who ranged in age from 18 to 66 years ($M_{age} = 29.15$, $SD = 10.21$). The majority of women who completed the survey identified themselves as having a European background (86.1%), although some participants identified themselves as Latin American (9.9%) or North American (2.9%). Most participants reported speaking English as their first language (63.8%), although some participants reported speaking Spanish (17.8%), Greek (2.9%) and Chinese (1.5%) as their first language. With respect to relationship status, participants reported never having been married (58.2%), married or living with a partner (38%), separated or divorced (3.2%), or being widowed (0.6%). Most participants reported having been educated to college or university level (55%), postgraduate level (39.8%), and high school (5%). Finally, participants reported to be working full-time (39.8%), part-time (27.8%), not employed (31.3%), retired or on sick leave (0.9%).

2.2 | Measures

2.2.1 | Self-compassion

Self-compassion was measured using the short (12-item) version of the Self-Compassion Scale (SCS-SF; Raes et al., 2011). The SCS-SF has been found to be highly correlated with the long form SCS ($r = .97$; as cited in Raes et al., 2011). This self-report scale evaluates the three core components of self-compassion and their counterparts: Self-kindness (self-judgment), common humanity (isolation), mindfulness (over-identification). Example items include "I try to be understanding and patient towards those aspects of my personality I don't like" (self-kindness), "I'm disapproving and judgmental about my own flaws and inadequacies" (self-judgment). Participants responded to each item on a scale from 1 *(almost never)* to 5 *(almost always)*. An overall score was calculated by reversing score negative subscale items (self-judgment, isolation, and over-identification) and computing an overall mean for the 12 items ($\alpha = .89$).

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2.2.2 | Gratitude

Trait gratitude was measured using the 6-item Gratitude Questionnaire (McCullough et al., 2002). Example items included "I have so much in life to be thankful for" and "I am grateful to a wide variety of people." Participants indicated the extent to which they agreed with each item on a scale from 1 (*strongly disagree*) to 7 (*strongly agree*). An overall score was obtained by reversing scores for items 3 and 6 and summing the scores for all the six items, with the total values ranging between 6 and 42 ($\alpha = .79$). Higher scores reflect higher trait gratitude.

2.2.3 | Body dissatisfaction

Body dissatisfaction was measured with the 34-item version of the Body Shape Questionnaire (BSQ; Cooper et al., 1987). Example items included: "has eating even a small amount of food made you feel fat?" and "have you avoided wearing clothes which make you particularly aware of the shape of your body?". Participants were asked to rate the frequency of each behavior or feeling related to their body over the past 4 weeks on a scale from 1 (*never*) to 6 (*always*). An overall score was calculated by summing all responses of the 34 items with the total values ranging from 34 to 204 ($\alpha = .94$). Higher scores indicate greater body dissatisfaction.

2.3 | Results

2.3.1 | Relationships between gratitude, self-compassion, and body dissatisfaction

Bivariate correlations and descriptive statistics for all variables are reported in Table 1. As expected, both gratitude and self-compassion were negatively associated with body dissatisfaction. Gratitude was positively associated with self-compassion.

A multiple regression analysis was conducted to examine the independent contributions of self-compassion and gratitude to body dissatisfaction (Table 2). Self-compassion was a significant unique predictor of body dissatisfaction accounting for 25.4% of the variance (Adjusted $R^2 = .25$). However, gratitude did not independently predict body dissatisfaction.

TABLE 1 Bivariate correlations and descriptive statistics for all variables ($n = 342$).

Measure	*M*	*SD*	1	2	3
1. Body dissatisfaction	92.18	32.51	–		
2. Self-compassion	2.88	0.82	−0.50**	–	
3. Gratitude	5.66	0.93	−0.23**	.45**	–

Note: *$p < .05$ (two-tailed), **$p < .01$ (two-tailed). *M* = mean, *SD* = standard deviation.

TABLE 2 Regression of body dissatisfaction on gratitude and self-compassion ($N = 342$).

Variable	*B*	*β*	*SE B*	*t*	*p*
Constant	**4.49**		.28	15.74	.000
Gratitude	**−4.17**	.00	.05	−0.001	.999
Self-compassion	**−0.60**	−.50	.06	−9.68	<0.001***

Note: ***$p < .001$ (two-tailed).

2.4 | Discussion

Study 1 examined the associations between gratitude, self-compassion, and women's body dissatisfaction. The results supported a negative association between self-compassion and body dissatisfaction (Braun et al., 2016; Ferreira et al., 2013; Turk, & Waller, 2020; Wasylkiw et al., 2012) and between gratitude and body dissatisfaction (Geraghty et al., 2010; Homan et al., 2014; Wolfe & Patterson, 2017). However, when gratitude and self-compassion were treated as simultaneous predictors of body dissatisfaction; self-compassion, but not gratitude, emerged as a significant unique predictor. One explanation is that there was a medium-to-large correlation between self-compassion and gratitude suggesting that there is some overlap between the constructs. This finding is consistent with previous research where self-compassion has been found as a unique predictor when compared to gratitude (Homan & Hosack, 2019; Wu et al., 2018; Yang, et al., 2021). Therefore, Study 2 focused on testing whether interventions that promote self-compassion (e.g., meditation) can reduce body dissatisfaction.

3 | STUDY 2

Study 2 investigated the impact of a 3-week self-compassion meditation intervention on body dissatisfaction over time. In addition, Study 2 aimed to explore three potential mechanisms that may explain the relationship between self-compassion and body dissatisfaction—positive and negative affect and (body image) resilience. The self-compassion meditation was compared with a relaxation meditation, which served as an active control condition. A relaxation meditation was chosen because this kind of meditation does not overlap with any component of self-compassion. Relaxation meditation aims to induce an enjoyable deep state of body and mind (Hussain & Bhushan, 2010), while self-compassion meditation aims to cultivate an attitude of kindness, compassion for oneself and unconditional love; it involves being open to negative feelings as they appear, without over-identifying with them (Neff, 2009). Therefore, we hypothesized that, compared to women in the relaxation meditation group, women in the self-compassion meditation group would show higher levels of self-compassion, lower levels of body dissatisfaction, lower levels of negative affect, higher levels of positive affect, and higher levels of body image resilience between baseline

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and post-test. In addition, we expected that all gains associated with the self-compassion meditation would be maintained at 3-month follow-up.

3.1 | Method

3.1.1 | Participants and procedure

Women aged 18 or over who had never received a medical diagnosis of an eating disorder (e.g., anorexia, bulimia, binge disorder) were recruited through an online advertisement inviting women to participate in a study investigating personality and physical self-perceptions, which involved meditation for 3 weeks. People who have, or have had, an eating disorder diagnosis were excluded because participants were asked to recall an event when they have felt uncomfortable with their body and this may trigger an unwanted response in some participants, particularly those prone to eating disorders. Previous research has found that body dissatisfaction is a risk factor of eating disorders therapy relapse (Freeman et al., 1985; Keel et al., 2005; Stice & Shaw, 2002). Participants who completed the 3-week meditation and follow-up questionnaires received £20 for their time.

Figure 1 summarizes the flow of the participants across the study. A total of 285 women started the study by completing the questionnaire with the baseline measures. The final sample consisted of 117 female participants, allocated to either the self-compassion meditation group (n = 63) or the relaxation meditation group (n = 64).

Table 3 summarizes baseline demographics for each group. Participants ranged in age from 18 to 74 years (M = 28.46, SD = 12.02). About half of the participants reported not having meditation experience before participating in this study (48.8%), the other half meditated occasionally (49.6%). Only 1.6% of the sample reported that they mediated regularly (1.6%). Participants reported listening to the meditation audios an average of 4.46 times each week (range = 1–7; SD = 1.18).

3.2 | Materials

3.2.1 | Self-compassion meditation audio files

The three audio files developed by Neff and Germer (2013) and used by Albertson et al. (2015) were used to create a brief meditation intervention targeting body dissatisfaction in women. All self-compassion meditation audio files can be found at www.selfcompassion.org.

Audio file 1: The compassionate body scan (23:55 min)
During the first week, participants listened to the Compassionate Body Scan audio file (Neff, 2021a, 2021b, 2021c). This audio file aimed to teach participants to be mindful about their body sensations and feelings. It helped participants to have feelings of compassion, gratitude and appreciation of their body functionality.

Audio file 2: Affectionate breathing (21:28 min)
During the second week, participants listened to the Affectionate Breathing audio file (Neff, 2021a, 2021b, 2021c). This audio file aimed to develop compassion and generate feelings of kindness for oneself and others that might be suffering as one is at that moment without being judgemental.

Audio file 3: Loving-kindness meditation (20:10 min)
During the third week, participants listened to an adapted version of the loving-kindness meditation (Neff, 2021a, 2021b, 2021c) that focuses on cultivating self-compassion for a specific personal event that causes suffering.

3.2.2 | Relaxation meditation audio files

The three relaxation meditation files were taken from YouTube (McCready, 2017; Stephenson, 2013; The Honest Guys, 2017). Each relaxation meditation was the same length as its corresponding week's self-compassion meditations. The aim of the meditation audios selected was to help people to simply relax.

Audio file 1: The great pyramid guided relaxation (20:57 min)
The great pyramid guided relaxation audio file (Stephenson, 2013) aimed to guide participants to connect with their inner self and to let the tensions of the day disappear.

Audio file 2: Breathing meditation for stillness and relaxation (25:38 min)
The guided breathing meditation for stillness and relaxation (McCready, 2017) aimed to help participants to experience stillness and relaxation.

Audio file 3: Blissful deep relaxation (20 min)
The blissful deep relaxation audio file (The Honest Guys, 2017) aimed to guide participants into a deep state of relaxation, where they would experience a calmness state of mind.

3.3 | Measures

3.3.1 | Number of meditation sessions per week

To assess how many days per week participants listened to the audio file, participants answered the question: How many times did you listen to the meditation? Participants indicated their answer in a scale from 1 (1 day) to 7 (7 days).

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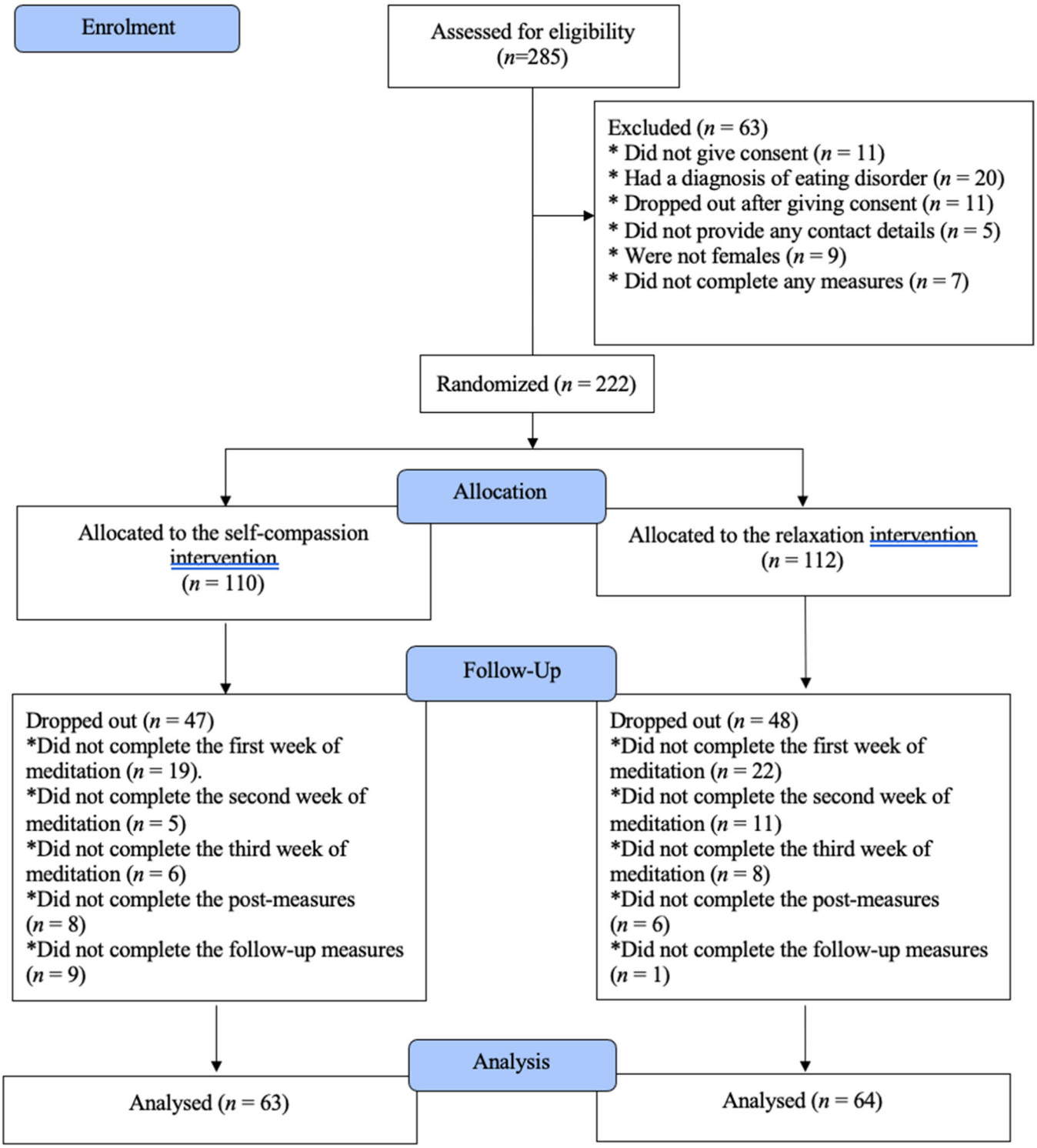


FIGURE 1 CONSORT diagram showing the flow of participants through Study 3.

3.3.2 | Self-compassion

Self-compassion[1] was measured using the Self-Compassion Scale (Neff, 2003a, 2003b), which consists of 26 items that assess the three main components of self-compassion and their counterparts: self-kindness (vs. self-judgment), common humanity (vs isolation) and mindfulness (vs. over-identification). Participants responded to each item on a scale from 1 (*almost never*) to 5 (*almost always*). An overall score was calculated by reverse scoring negative subscale items (self-judgment, isolation, and

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TABLE 3 Baseline demographics for each group.

	Self-compassion condition group (*n* = 63)		Relaxation condition group (*n* = 64)	
	n	%	*n*	%
Background				
European	46	73.0	56	87.5
Hispanic	5	7.9	4	6.3
Others	12	19.1	4	6.3
Language				
English	29	46.0	27	42.2
Portuguese	10	15.9	7	11
Spanish	6	9.5	7	11
Others	18	28.6	23	35.8
Marital status				
Single	18	28.6	23	35.9
In a relationship	20	31.7	23	35.9
Married or living with a partner	25	39.7	14	21.9
Separated or divorced	0	0	3	4.7
Widow	0	0	1	1.6
Highest educational level				
Post-graduate level	15	23.8	9	14.1
University or College	25	39.7	18	28.1
High school	21	33.3	33	51.6
Basic education	1	1.6	3	4.7
Other	1	1.6	1	1.6
Employment				
Student	23	36.5	26	40.6
Employed part-time	12	19	16	25
Employed full-time	27	42.9	19	29.7
Retired or on sickness leave	1	1.6	3	4.7

over-identification) and computing a mean across all 26-items such that higher scores indicate greater levels of self-compassion (α = .94).

3.3.3 | Body dissatisfaction

Body dissatisfaction was measured using the 16-item Body Shape Questionnaire (Evans & Dolan, 1993) which consists of questions about feelings or behaviors focused on body preoccupation (e.g., Have you felt ashamed of your body?). Participants responded to each item on a scale from 1 (*never*) to 6 (*always*) and an overall score was calculated by averaging responses such that higher scores indicate higher levels of body dissatisfaction (α = 0.93).

3.3.4 | Body image resilience

Body image resilience was measured by using an adapted version of the original Brief Resilience Scale (Smith et al., 2008), which consists of 6 items (e.g., "I tend to bounce back quickly after hard times"). In the present research, participants indicated the extent they felt this way "over the last week" and the items were reworded to ensure that they related to body image or appearance (e.g. "I tend to bounce back quickly after having a hard time with my appearance"). Participants responded to each item on a scale from 1 (*almost never*) and 5 (*almost always*) and an overall score is calculated by averaging all scores obtained. Internal consistency as measured by Cronbach's alpha was .87.

3.3.5 | Positive and negative affect

Positive and negative affect were measured by using the short version of the Positive and Negative Affect schedule short form (Thompson, 2007). The I-PANAS-SF consists of 10 items divided into two subscales of five items each: (1) Positive affect (e.g., inspired) and (2) negative affect (e.g., upset). Participants were asked how they have felt over the past week and responded to each item on a scale from 1 (*very slightly or not at all*) to 5 (*extremely*). An overall score was calculated by averaging all the obtained scores for the scale (ranging from 5 to 25). In the current study, internal consistency as measured by Cronbach's alpha was .61 for the positive affect subscale and 0.71 for the negative affect subscale.

3.3.6 | Procedure

Figure 2 provides an overview of the procedure. Upon clicking the link to the study, participants were directed to a page of information about the study followed by a consent form. After providing informed consent, participants were then redirected to the study online on Qualtrics.

3.4 | Results

3.4.1 | Attrition analysis

The dataset contained a relatively large proportion of missing values (64.86%).[2] It was not possible to use multiple imputation to replace the missing data, as multiple imputation is only recommended when between 5% and 40% of datapoints are missing (Clark & Altman, 2003). The large amount of missing data also meant that it was not possible to conduct an intention to treat analysis. Instead,

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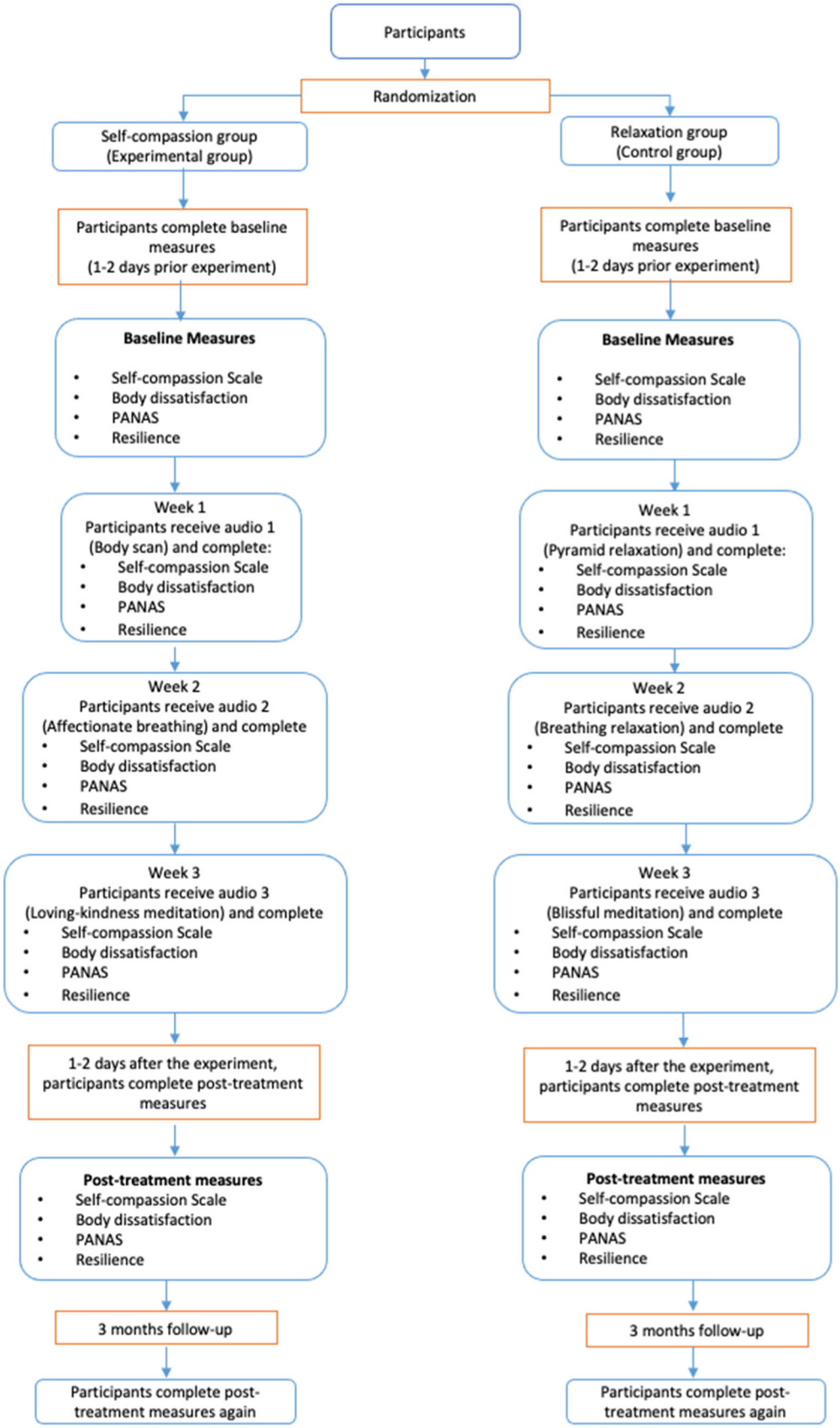


FIGURE 2 Overview of the procedure of Study 2.

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per-protocol analysis was used to compare treatment groups only including participants who completed the treatment to which they were allocated (Sedgwick, 2015). To determine whether there were any systematic differences between study non-completers (participants who completed the baseline questionnaire but did not finish the study) and study completers (participants who remained in the sample), a one-way multivariate analysis of variance (MANOVA) was conducted on the main measures at baseline: Age and prior meditation experience, self-compassion, body dissatisfaction, positive affect, negative affect, and body image resilience. The overall effect of participant status was non-significant, Wilk's Lambda = 0.95, $F_{(10,\ 229)} = 1.84$, $p = .30$; suggesting there was no evidence that participants who completed the study were different from participants who did not complete the study.

3.4.2 | Randomization check

Table 4 shows the descriptive statistics for the baseline variables by condition. A similar MANOVA was conducted to determine whether there were significant differences between the self-compassion meditation group and the relaxation group in their responses to the same measures at baseline. The overall effect of condition was non-significant, Wilk's Lambda = 0.90, $F_{(10,\ 114)} = 1.27$, $p = .25$; however, a subsequent independent-samples *t*-test identified that participants in the self-compassion meditation group reported significantly higher levels of body image resilience at baseline than did participants in the relaxation meditation group. Given this pre-existing difference between the experimental groups, all subsequent analyzes controlled for baseline body image resilience.

3.5 | Effect of self-compassion meditation (vs. relaxation meditation)

3.5.1 | Changes in outcomes between baseline to post-test

Table 5 shows the descriptive statistics for each of the outcome variables by condition and time. A series of 2 between (Meditation group: Self-compassion vs Relaxation) × 2 within (Time: Baseline vs. Post-test) mixed ANCOVAs were used to test whether women in the self-compassion meditation group experienced greater changes between baseline and post-test in levels of self-compassion, body dissatisfaction, negative and positive affect, and body image resilience. Baseline body image resilience was included as a covariate.

TABLE 4 Descriptive statistics by condition at baseline.

Measures	Self-compassion meditation group (*n* = 64)		Relaxation meditation group (*n* = 63)		*t* (125)	*p*
	M	*SD*	*M*	*SD*		
Age	28.06	10.19	28.84	13.67	0.364	.716
Prior meditation experience	4.58	0.53	4.48	0.53	−1.098	.275
Self-compassion	2.96	0.83	2.74	0.74	−1.552	.123
Body dissatisfaction	2.67	0.98	2.98	1.22	1.538	.127
Positive Affect	2.57	0.68	2.62	0.59	0.474	.637
Negative Affect	3.22	0.79	3.23	0.83	0.019	.985
Body image resilience	3.43	0.79	3.01	0.84	−2.850	.005

Note: *M* = mean, *SD* = standard deviation.

TABLE 5 Descriptive statistics for each of the variables by condition and time.

Variables	Self-compassion meditation						Relaxation meditation					
	Baseline		Post-test		Follow-up		Baseline		Post-test		Follow-up	
	M	*SD*	*M*	*SD*	*M*	*SD*	*M*	*SD*	*M*	*SD*	*M*	*SD*
Self-compassion	2.84	0.84	3.05	0.09	2.99	0.09	2.85	0.08	3.18	0.09	3.11[a]	0.10
Body dissatisfaction	2.82	0.12	2.63	0.11	2.82	0.12	2.83	0.12	2.44	0.11	2.51[a]	0.12
Positive affect	2.62	0.07	2.60	0.10	2.75	0.09	2.56	0.07	2.63	0.10	2.66[a]	0.10
Negative affect	3.13	0.09	3.66	0.10	3.45	0.11	3.31	0.09	3.82	0.10	3.71[a]	0.11
Body image resilience	3.42	0.79	3.65	0.76	3.50	0.81	3.01	0.84	3.44	0.81	3.43	0.93

Note: *M* = mean, *SD* = standard deviation.

[a]Covariates appearing in the model are evaluated at the following values: Baseline body image resilience mean = 3.2178.

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There was a significant change over time in all of the variables, $Fs_{(1,\ 124)} > 0.001$, $ps < .01$, except for positive affect, $F_{(1,\ 124)} = 4.89$, $p < .73$). This indicated that women's levels of self-compassion and body image resilience increased over time. In addition, negative affect increased over time. Levels of body dissatisfaction decreased over time.

The main effect of condition was significant only for body image resilience, $F_{(1,\ 125)} = 5.08$, $p < .01$) suggesting that participants allocated in the self-compassion meditation group had high levels of body image resilience ($M = 3.54$, $SE = 0.09$) compared to those in the relaxation meditation group ($M = 3.23$, $SE = 0.09$). However, condition did not significantly effect any of the other variables, all $Fs_{(1,\ 124)} < 0.15$, $ps > .89$. No significant interactions were found between condition and time on any of the variables, all $Fs(_{1,\ 124)} < 0.12$, $ps > .88$.

3.5.2 | Changes in outcomes between baseline to follow-up

A series of 2 between (Meditation group: Self-compassion vs. Relaxation) × 2 within (Time: Baseline vs. 3-month follow-up) mixed ANCOVAs were conducted to compare changes in outcomes between the groups from baseline to follow-up. There were significant changes over time in self-compassion, $F_{(1,\ 116)} = 5.44$, $p < .001$; body dissatisfaction, $F_{(1,\ 116)} = 0.02$, $p < .02$; negative affect, $F_{(1,\ 116)} = 1.50$, $p < .001$; and body image resilience, $F_{(1,\ 117)} = 15.91$, $p < .001$. Specifically, women's self-compassion and body image resilience increased over time, as did levels of negative affect. In contrast, women's body dissatisfaction decreased.

The main effect of condition was significant only for body image resilience, $F_{(1,\ 117)} = 9.00$, $p < .003$, suggesting that participants allocated in the self-compassion meditation group had higher levels of body image resilience ($M = 3.54$, $SE = 0.09$) compared to those in the relaxation meditation group ($M = 3.23$, $SE = 0.09$). However, there was not a significant effect of the condition on any of the other variables, all $Fs_{(1,\ 116)} < 0.04$, $ps > .83$.

There was, however, a significant interaction between meditation group and time on two of the outcome variables: Body dissatisfaction, $F_{(1,\ 116)} = 4.10$, $p < .04$, and body image resilience, $F_{(1,\ 117)} = 9.00$, $p < .003$. These interactions were followed up by testing the simple main effects of time (baseline vs. 3-month follow-up) for each meditation group (self-compassion and relaxation) using one-way within-participants ANCOVAs with baseline body image resilience as the covariate.

Body dissatisfaction

Among participants in the self-compassion meditation group, there was no significant difference between body dissatisfaction at baseline ($M = 2.67$, $SD = 0.99$) and the 3-month follow-up ($M = 2.65$, $SD = 1.08$), $F_{(1,\ 59)} = 2.98$, $p = .090$, $\eta_p^2 = 0.05$. Among participants in the relaxation meditation group, there was also no significant difference between body dissatisfaction at baseline ($M = 3.00$, $SD = 1.25$) and the 3-month follow-up ($M = 2.71$, $SD = 1.15$), $F_{(1,\ 56)} = 3.26$, $p = .076$, $\eta_p^2 = 0.06$. While both simple effects did not reach conventional levels of significance (i.e., $p > .05$), the significant interaction was likely driven by the slightly larger effect size in the relaxation meditation group.

Body image resilience

Among participants in the self-compassion meditation group, body image resilience[3] was significantly higher at the 3-month follow-up ($M = 3.43$, $SD = 0.94$) compared to baseline ($M = 2.95$, $SD = 0.82$), $F_{(1,\ 57)} = 20.32$, $p < .001$, $\eta_p^2 = 0.26$. Among participants in the relaxation meditation group, there was no significant difference between body image resilience at baseline ($M = 3.44$, $SD = 0.80$) and the 3-month follow-up ($M = 3.51$, $SD = 0.81$), $F_{(1,\ 60)} = 0.60$, $p = .442$, $\eta_p^2 = 0.01$.

3.5.3 | Changes in outcomes between post-test and follow-up

A 2 between (Meditation Group: Self-compassion vs. Relaxation) × 2 within (Time: Post-test vs. 3-month follow-up) mixed ANCOVA, with body image resilience as a covariate was used to compare changes in outcomes between post-test and follow-up by group. There were significant changes over time in body dissatisfaction, $F_{(1,\ 116)} = 9.23$, $p < .02$, and negative affect, $F_{(1,\ 116)} = 6.58$, $p < .04$, but not in the other outcomes, $Fs_{(1,\ 116)} < 0.75$, $ps > .18$. Specifically, women's body dissatisfaction increased over time and negative affect decreased over time. There was no significant difference in any of the variables between the self-compassion meditation group and the relaxation meditation group, $Fs_{(1,\ 116)} < 0.98$, $ps > .11$, nor was there any significant interaction between time and group on any of the variables, $Fs_{(1,\ 116)} < 0.04$, $ps > .13$.

4 | GENERAL DISCUSSION

The current study aimed to understand the relationship between potentially protective factors, like self-compassion and gratitude, and body dissatisfaction. Study 1 found that while both self-compassion and gratitude were correlated with body dissatisfaction, gratitude did not predict body dissatisfaction when included alongside self-compassion. Study 2 therefore focused on self-compassion and investigated the effects of a meditation designed to foster self-compassion on body dissatisfaction over time. The self-compassion meditation was compared to an active control condition that completed a relaxation meditation in an attempt to isolate the effects of self-compassion on body dissatisfaction. There was a significant main effect of time (baseline vs post-test) on most of the variables. Specifically, there was an increase in positive experiences such as self-compassion and body image resilience and a decrease in body dissatisfaction. In contrast to our expectations, negative affect also increased from baseline to post-test and follow-up. These findings indicate that, with the exception of negative affect, women's

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experiences became more positive over time, regardless of which type of meditation (self-compassion or relaxation) they completed.

The lack of differences between the effects of relaxation and self-compassion meditation stands in contrast to Albertson et al.'s (2015) findings. However, the finding that the mere act of meditating can bring positive outcomes to women with body dissatisfaction, regardless of the specific focus or content of the meditation has been documented. For example, De Wet et al. (2020) compared two meditation groups (self-compassion meditation vs. a nature-focused guided imaginary meditation) and did not find significant differences between them. In addition, Toole et al. (2021) did not find significant differences between a self-compassion meditation and a dissonance-based intervention. A similar result was found in a gratitude intervention where the content of the recordings did not produce a difference between groups on body dissatisfaction (Fraser et al., 2022). One explanation for the lack of differences between the meditation groups is that relaxation, rather than self-compassion, might be the active component of the mediation, as it has been argued that both kinds of meditations produce the same response (Benson et al., 1974), as they both include components of mindfulness, such as body relaxation, guided breathing, and openness to negative emotions.

4.1 | Limitations and future directions

The present findings need to be considered in the context of some limitations. Study 2 obtained a smaller sample size than the original target due to the number of people who dropped out. The effect of condition was therefore analyzed "per-protocol" (i.e., only participants who provided data at each time point were analyzed). However, this limited statistical power (a post hoc power analysis showed that the sample of 117 participants provided just 49% power to detect a medium effect size of $f^2 = 0.25$) and only including completers does not acknowledge the possibility that participants will discontinue any kind of interventions and so may overestimate the effect of the intervention expected outside of a clinical trial (Weiss et al., 2020). To address this issue, it is advised to conduct an intention-to-treat analysis (ITT; Gupta, 2011) and/or to include strategies for increasing compliance with the intervention (in this case the meditation exercises) and so increase retention. For example, researchers could recruit only participants who are interested in meditation or have body image issues and are looking for an intervention to help themselves (De Wet et al., 2020; Toole & Craighead, 2016). This way participants may feel more motivated to complete the intervention program.

Finally, body image resilience, derived from a theoretical model proposed by Choate (2005), describes the social, structural, and psychological protective factors that improve body image including support from family of origin and rejection of the superwoman ideal. However, this model and research purporting to test its predictions (e.g., Snapp et al., 2012) does not measure body image resilience directly. Thus, it would be useful for future research to further test the effect of different types of mediation on body image resilience and perhaps other forms of resilience, such as emotional resilience (Kemper et al., 2015; Neff & McGehee, 2010; Sabir et al., 2018).

5 | CONCLUSIONS

The results of the present studies expand our understanding of the relationships between body dissatisfaction and self-compassion and gratitude, suggesting that self-compassion (but not gratitude) independently predicts body dissatisfaction. Study 2 provided the first investigation of whether and how body dissatisfaction is influenced by different types of meditation (self-compassion or relaxation). Women who participated in either type of meditation showed improvements in body dissatisfaction over time. This suggests that the mere act of meditating can bring positive outcomes to women with body dissatisfaction, regardless of the specific focus or content of the meditation. Although these findings are preliminary and need to be replicated, they offer important insights into strategies that might help reduce women's body dissatisfaction.

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CONFLICT OF INTEREST STATEMENT

The authors declare no conflicts of interest.

DATA AVAILABILITY STATEMENT

The data that support the findings of this study are available on request from the corresponding author. The data are not publicly available due to privacy or ethical restrictions. Data supporting the findings of this study are available on request from the corresponding author.

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ENDNOTES

[1] Trait self-compassion was measured due to the lack of a standardized measure of state self-compassion at the time that the study was conceptualized. However, Neff et al. (2021) has since developed and validated a state self-compassion scale (long-and short form), which could be used in future research.

[2] Data collection started on September 29th, 2019, and finished on July 27th, 2020. Participants were initially recruited through an online advertisement emailed to the volunteers lists and posted on the researcher's Facebook account with a potential reach of 721 people, LinkedIn account with a potential reach of 78 people, and Twitter account with a potential reach of 116 people. Unfortunately, data

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collection via this strategy was undermined by the COVID-19 pandemic and associated lockdown. Many participants also dropped out, often reporting that they had to cope with new constraints and hardships due to the pandemic.

[3] There is an important caveat to the above interpretation of the results. Given the baseline differences in body image resilience between the conditions, the change in body image resilience over a time for the relaxation meditation group is not necessarily meaningful because it represents a shift from a lower baseline level to an equivalent level at the 3-month follow-up, compared to the self-compassion meditation group. Participants in the self-compassion meditation group reported a lower level of baseline body image resilience ($M = 2.95$, $SD = 0.82$) than did the participants in the relaxation meditation group ($M = 3.44$, $SD = 0.80$), $F_{(1,\ 119)} = 10.82$, $p < .001$, $\eta_p^2 = 0.09$. In contrast, there was no significant difference in body image resilience levels at the 3-month follow-up time point between the self-compassion meditation group ($M = 3.43$, $SD = 0.94$) and the relaxation meditation group ($M = 3.51$, $SD = 0.81$), $F_{(1,\ 119)} = 0.22$, $p = .644$, $\eta_p^2 < 0.01$. These additional results suggest that there may be a ceiling effect for levels of body image resilience (between 3.4 and 3.5) among all participants in the sample, regardless of the type of meditation exercises they completed. Meditation appears to help increase levels of resilience to this ceiling level (as shown in the relaxation meditation group) but does not appear to increase levels beyond this ceiling (as shown in the self-compassion meditation group).

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