

Does a Facebook-enhanced Mindful Self-Compassion intervention improve body image? An evaluation study

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ARTICLE INFO

Article history:

Received 17 February 2020

Received in revised form 10 July 2020

Accepted 11 July 2020

Keywords:

Self-compassion

Body concerns

Body appreciation

Intervention

Upward appearance comparison

ABSTRACT

This study evaluates a brief intervention aimed at improving body image. The intervention comprised a Mindful Self-Compassion workshop complemented by a group discussion on Facebook. Young women ($M_{\text{age}} = 18.31$), screened for body concerns, were allocated by university campus to a 50-minute workshop intervention ($n = 42$) or a waitlist control ($n = 34$). Following the workshop, participants in the intervention group utilized self-compassion techniques when experiencing appearance distress and posted about their experiences on a private Facebook group three times per week for two weeks. Findings showed that, relative to control, the intervention group experienced lower upward appearance comparison, social appearance anxiety, body dissatisfaction, and drive for thinness, and higher body appreciation and self-compassion, at posttest and 1-month follow-up. All effects, except those for body dissatisfaction, were held at 3-month follow-up. Additionally, common humanity predicted gains in body appreciation from pretest to posttest. The Mindful Self-Compassion intervention involving a Facebook group may have resonated with young women as it allowed them to share moments of self-compassionate body image experiences in a private and supportive environment.

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1. Introduction

Emerging adulthood has been described as a critical period for the development of body image (Harter, 1990) and, given the promotion of largely unattainable appearance standards in Western society, many young women experience body concerns during this time (Wertheim & Paxton, 2011). Indeed, *body dissatisfaction*—the subjective negative evaluation of one's shape, weight, overall appearance, or specific body parts (Menzel, Krawczyk, & Thompson, 2011)—has been shown to increase during the transition to young adulthood (Bucchianeri, Arikian, Hannan, Eisenberg, & Neumark-Sztainer, 2013). Young women's body concerns may not only involve body dissatisfaction, but also (a) *drive for thinness*, which entails perceptions, behaviours, and attitudes that pressure one to conform to the cultural ideal of thinness (Garner, 2004), and (b) *social appearance anxiety*, which is the fear of being negatively evaluated by others based on one's overall appearance (Hart et al., 2008). Body dissatisfaction, drive for thinness, and social appearance anxiety have all been identified as risk factors for the development of eating disorders (Jacobi, Hayward, De Zwaan,

Kraemer, & Agras, 2004; Levinson & Rodebaugh, 2012). Additionally, body concerns can be perpetuated through comparisons with others, particularly with others deemed to be more attractive (i.e., *upward appearance comparisons*; Rancourt, Schaefer, Bosson, & Thompson, 2016).

Scholars have shown that developing and maintaining a positive body image, including high levels of *body appreciation*—respecting, honouring, loving, and accepting the body, even if it differs from societal appearance ideals (Tylka & Wood-Barcalow, 2015a)—may help buffer body concerns (Wood-Barcalow, Tylka, & Augustus-Horvath, 2010). Additionally, self-compassion may help reduce body-related distress (Stutts & Blomquist, 2018). Given the prevalence of body concerns in emerging adult women and the multiple possible manifestations of these concerns, programs that not only reduce these concerns, but enhance and sustain positive body image, are likely to be of widespread benefit (Tylka & Wood-Barcalow, 2015a). The present study evaluated the efficacy of a brief Mindful Self-Compassion (Neff & Germer, 2013) workshop, followed by a two-week online discussion group using Facebook, in reducing body concerns and increasing body appreciation and self-compassion among emerging adult women with body concerns.

1.1. Self-compassion

Self-compassion—which Neff (2003) defines as a way of relating to oneself, entailing three interacting components: (a) self-

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kindness, (b) common humanity, and (c) mindfulness—can be viewed as a useful emotion regulation strategy. In recent years, a large body of evidence indicates that self-compassion is related to many aspects of psychological well-being (Johnson & O'Brien, 2013; Neff, Kirkpatrick, & Rude, 2007). Moreover, self-compassion training has been shown to have a positive influence on body image and eating-related outcomes (see Turk & Waller, 2020, for review and meta-analysis).

The three interacting components of self-compassion are likely to improve young women's body image for various reasons. First, being kind and understanding towards oneself, rather than engaging in harsh self-judgment, may counter self-evaluative criticism underlying body dissatisfaction. Similarly, an understanding that flaws and imperfections are part of the shared human condition may help young women develop a more inclusive perspective of appearance that mitigates engagement in upward comparisons and the body concerns (e.g., body dissatisfaction, drive for thinness, social appearance anxiety) this is likely to maintain. Finally, by acknowledging and understanding their painful thoughts and emotions without judgment, young women may learn to avoid overidentifying with, or fixating on, negative body evaluations.

Research provides support for this reasoning. Studies show that self-compassion is negatively associated with body dissatisfaction (Mosewich, Crocker, Kowalski, & Delongis, 2013), drive for thinness (Ferreira, Pinto-Gouveia, & Duarte, 2013), and social physique anxiety (Koç & Ermiş, 2016). Higher self-compassion is also associated with fewer perceived thinness-related pressures, less thin-ideal internalization, and lower levels of disordered eating (Tylka, Russell, & Neal, 2015). Furthermore, self-compassion has been shown to moderate the relationship between weight/shape concerns and eating pathology (Stutts & Blomquist, 2018). When women are less self-compassionate than usual, frequent interactions with body-focused others are associated with more body concerns and less body appreciation (Kelly, Miller, & Stephen, 2016). Conversely, when young women are more self-compassionate, they are able to appreciate their unique body and engage in less social comparison (Berry, Kowalski, Ferguson, & McHugh, 2010).

In addition to buffering body concerns, self-compassion may enhance positive body image by instilling in women a sense of appreciation for their bodies. Studies have shown that self-compassion is positively associated with body appreciation (Homan & Tylka, 2015; Wasylkiw, MacKinnon, & MacLellan, 2012) and moderates the link between body-related social comparisons and body appreciation (Homan & Tylka, 2015).

1.2. Self-compassion interventions

This evidence, suggesting strong links between self-compassion and healthy body image, has given rise to the development of self-compassion interventions to improve body image. Research supports the efficacy of some of these programs. For example, Rodgers et al. (2018) showed that women who used an internet application (app) grounded in self-compassion for a period of six weeks reported increases in appearance esteem and self-compassion, relative to a control group, at 12-week follow-up. Additionally, writing in a self-compassionate manner has been shown to reduce body dissatisfaction (Moffitt, Neumann, & Williamson, 2018; Stern & Engeln, 2018) and increase body appreciation (Seekis, Bradley, & Duffy, 2017), relative to an active control.

One self-compassion program that has garnered considerable research attention is Mindful Self-Compassion developed by Neff and Germer (2013). This is an 8-week program designed to foster self-compassion through meditation practices, group discussions, and experiential exercises. In a randomized controlled trial of the program, Neff and Germer (2013) found that, relative to a wait-

list control, Mindful Self-Compassion program participants showed increased self-compassion and life satisfaction, and decreased depressive symptoms, anxiety, stress, and emotional avoidance, with gains maintained for up to one year. One component of Mindful Self-Compassion, namely meditation, has been examined in its utility to improve body image. Implementing 3-week guided self-compassion meditation podcasts from the Mindful Self-Compassion program (Neff & Germer, 2013), Albertson, Neff, and Dill-Shackleford (2015) found that women showed greater reductions in body dissatisfaction and gains in body appreciation and self-compassion, with moderate effect sizes, when compared to a waitlist control. Although these effects were maintained at three months, the follow-up phase was subject to a high attrition rate (approximately 50 %). To improve retention, Toole and Craighead (2016) reduced the same mindful self-compassion meditation podcasts to one week and found that, while gains in body appreciation were found at posttest, the modifications did not increase engagement with the meditation podcasts and there were no significant effects on body dissatisfaction.

One possible explanation of the lack of engagement observed in some meditation programs is that participants find the requirement to practice the prescribed exercises inconvenient and time consuming. Indeed, in the Toole and Craighead (2016) study, lack of engagement could be partly attributed to many participants finding the meditations overly effortful. For this reason, practices that can be used *during* stressful situations, or “in-the-moment”, may be more beneficial (e.g., Bluth, Gaylord, Campo, Mullarkey, & Hobbs, 2015; Voelker, Petrie, Huang, & Chandran, 2019) than ones that require making time to foster self-compassion. Consistent with this, Voelker et al. (2019) found that, for female collegiate athletes, adoption of mindful self-compassion strategies in their competitive and demanding sporting environment was beneficial in reducing thin-ideal internalization and increasing body satisfaction, body appreciation, and self-compassion, relative to a waitlist control. However, the intervention in that study was blended with a cognitive dissonance component, thereby making it difficult to establish the efficacy of mindful self-compassion strategies alone. Indeed, given that self-compassion is considered an emotion-regulation strategy (Neff, 2003), a common limitation within these prior studies is the absence of knowing how or whether participants utilized the strategies during appearance-related distress. By incorporating an online discussion group, where participants can share their experience of using some or all of the mindful self-compassion strategies during difficult body-related situations, as well as in times of non-distress and positive appearance-related experiences, posts uploaded by participants can provide deeper understanding of the strategies' efficacy.

1.3. Online support for self-compassion interventions

Online interventions involving interactive discussions among group members have shown promising results with groups at risk of developing eating disorders (e.g., Celio et al., 2000; Zabinski, Wilfley, Calfas, Winzelberg, & Taylor, 2004). This approach also provides a unique opportunity for online data collection and program evaluation (Taylor, Jobson, Winzelberg, & Abascal, 2002). Including an online component as part of a larger intervention may be particularly advantageous when researching sensitive issues such as body image because it allows participants to choose those aspects of their experience that they are comfortable disclosing.

Self-compassion has received early support as a useful framework within which to ground online interventions (e.g., Rodgers et al., 2018; Voelker et al., 2019). Most past online self-compassion interventions that have targeted body image have been disseminated for individual use (e.g., meditations, apps, and writing tasks; Albertson et al., 2015; Rodgers et al., 2018; Seekis et al., 2017).

Although these are helpful in developing self-kindness and mindfulness, the isolation of such interventions means that there may be less experiential focus on common humanity. One way to shed light on the common humanity component is through the use of online discussion groups via social networking sites such as Facebook. This gives participants the opportunity to see, and appreciate, that others share similar body-related emotions and experiences, regardless of what they look like. Indeed, recent research shows that exposure to body-positive content on social media may contribute to improvements in women's body image (Cohen, Fardouly, Newton-John, & Slater, 2019), perhaps partly due to body-positive content being well-received by others, or others sharing similar experiences in overcoming body concerns.

1.4. The current study

Based on the evidence provided, it appears that self-compassion writing, meditation, and affirmations may all be useful in reducing body concerns and/or increasing body appreciation and self-compassion. Although longer-term (Albertson et al., 2015) meditation interventions show improvements in body image (with small to moderate effect sizes), attrition rates remain high. In an effort to increase retention rates and maintain young women's interest, we posited that an interactive format combining a single-session face-to-face workshop and a 2-week online discussion group for women with pre-existing body concerns would encourage program participation, facilitate acquisition of concepts and strategies, and promote positive attitudinal change.

We recruited women with pre-existing body concerns because, given that the intervention required sharing personal body image experiences and using self-compassion exercises to experience "common humanity", it was important that participants felt safe in an environment interacting with similar others. Further, although an active control group would have provided a more robust comparison, we chose a waitlist control group on the basis that (a) this was a preliminary study aimed at determining whether discussing the use of self-compassion strategies in an online environment was effective, and (b) no alternative active intervention that was as parsimonious in terms of time and other resources as the current intervention was available. To identify crucial time points for potential booster sessions, the intervention was assessed at 1 month, as well as at 3 months follow-up.

We hypothesized that the participants in the intervention group would report lower body dissatisfaction, drive for thinness, social appearance anxiety, and upward appearance comparison, and higher body appreciation and self-compassion at (a) posttest (H1), (b) 1-month follow-up (H2), and (c) 3-month follow-up (H3), relative to participants in the waitlist control group. To investigate self-compassion as a mechanism underlying program effectiveness, we examined whether changes in self-compassion (using pre-post difference scores) experienced by the intervention group predicted improvements in each of the body image variables. We also explored whether frequency of the use of specific self-compassion strategies taught in the intervention program would predict pre-post changes in the study outcomes.

2. Method

2.1. Participants

The sample comprised 76 undergraduate women ranging in age from 17 to 21 years ($M = 18.04$, $SD = 0.90$) enrolled in a first-year psychology course at one of two campuses of an Australian urban university. Participants were assigned to either the intervention group ($n = 42$) or waitlist control group ($n = 34$) via cluster randomi-

sation (one campus per group) to avoid contamination (Torgerson, 2001). Study participants identified as White (75 %), Asian (9 %), Middle Eastern (8 %), Pacific Islander (5 %), or other (3 %). All but six participants (i.e., three from each group) reported their height (in cm) and weight (in kg). Mean body mass index (BMI) at pretest was 23.54 ($SD = 4.38$) for the intervention group and 23.05 ($SD = 3.00$) for the control group.

2.2. Procedure

Following approval from the University Human Research Ethics Committee, participants were recruited via an advertisement inviting 17–25 year old women who frequently experienced body dissatisfaction to take part in a study aimed at improving body image through positive strategies. They were informed in writing about the first part of the study, including the screening questionnaire, its privacy provisions and the risks involved in completing it, their rights to withdraw without penalty at any time, and sources of support if needed. They were also told that, if eligible, they could later participate in an in-person workshop followed by at-home exercises and questionnaires. The screening test, which comprised the 7-item Drive for Thinness and 10-item Body Dissatisfaction Subscales from the Eating Disorder Inventory-3 (EDI-3; Garner, 2004), was completed by 152 participants. The EDI-3 is not intended to be used as a diagnostic tool of eating disorders but as a tool for assessing symptom clusters associated with the development and maintenance of eating disorders. The two subscales were used as screening tests because they target central features of eating disorders related to body concerns, including overestimation of one's weight and body size, and the drive to lose weight or be thin (Garner, 2004; Nyman-Carlsson, Engström, Norring, & Nevenon, 2015). Response options ranged from 1 (Never) to 6 (Always), but were recoded as 0, 0, 1, 2, 3, and 4 in accord with the screening protocol (Garner, 2004). A receiver operating characteristic analysis, using cut-off points of 12 and 19, respectively, found that the Drive for Thinness and Body Dissatisfaction Subscales had sensitivity and specificity values of .80 and .79, and .71 and .67, respectively (Nyman-Carlsson et al., 2015). Thus, participants scoring ≥ 12 for Drive for Thinness and ≥ 19 for Body Satisfaction were considered as having high levels of body concerns. Seventy-six of the 152 participants met both inclusion criteria. All 76 accepted an email invitation to participate in the study.

Using a secure website, participants assigned to the intervention group read details of the study and their involvement in it, including details of why and how the intervention was being conducted (including reasons for use of Facebook). Participants assigned to the waitlist control group were informed that the study was about the importance of understanding the type of strategies used by women with body concerns. The information sheets for all participants also included risks involved, privacy provisions, their rights to withdraw without penalty at any time, and sources of support if needed. All participants then provided online acknowledgement of informed consent, including agreement that their deidentified data could be used for research purposes. Measures of upward physical appearance comparison, social appearance anxiety, body appreciation, body dissatisfaction, drive for thinness, and self-compassion were then completed, in that order, by participants in both the intervention and control groups at four time points: pretest, posttest (at completion of the 2 week online discussion group), 1-month follow-up, and 3-month follow-up. Participants provided demographic details at pretest only. Upon completion of each questionnaire, intervention participants read an online debriefing statement outlining the purpose of the study and providing contact details for counselling services should any concerns arise. Waitlist control participants read an online debrief statement that included contact details for counselling services should any

concerns arise, and a description of the study as being about the importance of understanding the type of strategies used by women with body concerns. Intervention participants also received a print copy booklet containing guidelines for the workshop and Facebook activities, and the same debriefing statement presented in the online questionnaire.

At posttest, intervention participants completed a further four closed-ended and two open-ended questions to provide feedback regarding the intervention, and two open-ended questions to further explore what they enjoyed and what could be improved. Additionally, weekly frequency of use of each of the instructed mindful self-compassion strategies was assessed at posttest, 1- and 3-month follow-ups.

2.3. Intervention

The intervention was conducted by the first author, a female psychology doctoral student. Intervention group participants attended one of six 50-minute face-to-face workshops, which were run within two days, with an average of 12 participants in each. Participants were welcomed, then informally discussed women's everyday experiences with body image. All participants were then told that they were selected based on eligibility criteria and that they were in a safe space. A brief introduction to the workshop and Facebook component of the intervention was also presented. The workshop was based on the approach of, and six strategies from, the *Mindful Self-Compassion Workbook* (Neff & Germer, 2018). It comprised self-compassion psychoeducation in relation to body image using a PowerPoint presentation, with complementary interactive exercises (see Supplementary Materials).

Following an introduction to the concept of self-compassion and its association with body image, participants engaged in two brief writing tasks to encourage a self-compassionate mindset. The first task involved writing a kind but honest assessment of their body and listing all their body features they liked. Following facilitator questions such as, "How many people have at least three things written down?", participants who wanted to share what they had written were encouraged to do so. In the second task, participants wrote about features they were not so happy with. At this point, the first strategy of *mindfulness* was introduced, where participants were asked to acknowledge feelings of discomfort that might arise as they were writing, stay with these feelings, and write something like "this is difficult for me." They were also encouraged to accept their imperfections without exaggerating a story line of inadequacy. To enable participants to experience first-hand the concept of *common humanity*, the second strategy involved a "show of hands approach" to questions such as, "How many people have listed or felt emotions such as anxiety?" and group discussions regarding only the uncomfortable feelings (not body parts) were encouraged so that the women could understand that, regardless of which body part was unsatisfactory to each individual, they all shared similar feelings. *Self-kindness* was the third strategy to be incorporated; this involved the women learning how to express kindness to themselves through phrases such as "May I be kind to myself. May I accept myself as I am."

At this point, participants were introduced to a fourth strategy, the "*Soothing Touch*", which helps trigger a compassionate response and can be used as a physical gesture in times of distress. Participants tried different ways of applying this, for example, placing a hand on their chest, until they found a touch that felt comfortable and supportive. The fifth strategy focused on *self-appreciation*. Here, participants were asked to write about how they react to compliments (e.g., whether they receive them graciously, tense up, or dismiss them). Using a format similar to that adopted in the mindfulness and common humanity segments, responses were encouraged as a group to help participants understand how they

might utilize self-appreciation either following a compliment or in a private moment. To finish the workshop, all participants were guided through the sixth strategy, a brief 5-minute version of the *Compassionate Body Scan*, which teaches the practice of accepting each body part in a kind and compassionate way.

Participants were informed that Facebook was chosen because of its ease of use, capacity to provide high security through the use of a "secret group", and its capacity to be a neutral (rather than the image-focused platform of Instagram) medium for communication. Following the workshop, participants were invited, by email, to join a closed Facebook group by the facilitator. Three times per week, for two weeks, participants were asked to post about an appearance-related situation (negative, neutral, or positive) in which they utilized "in-the-moment" mindful self-compassion strategies, as well as instances where they practiced these strategies in relation to their body image, and how this made them feel. They were also encouraged to respond to each other's posts if they so desired.

2.4. Mitigating potential negative outcomes of the intervention

Questions have been raised about the potential risks associated with online discussions, such as the potential for groups to reinforce restrictive or disordered eating patterns, threats to privacy, and difficulties managing crises (e.g., Robinson & Serfaty, 2003). To mitigate these potential problems, the following ethically approved guidelines were met: (a) as in prior studies (e.g., Zabinski et al., 2004), the Facebook discussion group used in the current study was moderated by the first author; (b) this Facebook group was set to "secret" once all participants had joined the group, so that the public could not search for, access, or ask to join the group; (c) participants were asked not to take screenshots of the discussions; and (d) participants were invited to contact the first author, or other counselling facilities, if they felt any distress. Intervention participants met and interacted at the separate workshops to encourage comfortable rapport, however all participants were in one large Facebook group, rather than in corresponding groups. Further details explaining participation requirements for the Facebook component were discussed at the end of the workshop. Importantly, participants were advised only to upload posts about their body image experiences in the context of utilizing self-compassion strategies. Participants could also exit the study at any time. The first author closed and deleted the Facebook group two weeks after the in-person self-compassion workshops.

2.5. Measures

2.5.1. Demographics

Participants self-reported their age and ethnicity. Height and weight were also self-reported, and this information was used to calculate their BMI.

2.5.2. Body Dissatisfaction Subscale from the Eating Disorders Inventory-3 (EDI-3; Garner, 2004)

This subscale consists of 10 items assessing body dissatisfaction. A sample item is "I think that my thighs are too large," with response options ranging from 1 (*Never*) to 6 (*Always*). Scores were averaged (after positively-worded items were reverse-scored), with higher scores indicating greater dissatisfaction with one's body. Garner (2004) reported high internal consistency ($\alpha = .94$). Validity was demonstrated via high correlations with measures of body preoccupation and eating disordered behavior. In the current sample, $\alpha = .87$ at pretest, $\alpha = .84$ at posttest, $\alpha = .85$ at 1-month, and $\alpha = .90$ at 3-months. Garner (2004) reported the EDI-3, of which both body dissatisfaction and drive for thinness are subscales, to be valid and reliable on non-clinical (as well as clinical) adolescent and adult samples from the USA, Canada, Europe, and Australia.

2.5.3. Drive for Thinness Subscale from the Eating Disorders Inventory-3 (EDI; [Garner, 2004](#))

This 7-item subscale assesses drive for thinness. An exemplar item is “I am preoccupied with the desire to be thinner,” with respondents rating their agreement to each item on a 6-point scale from 1 (*Never*) to 6 (*Always*). Scores were averaged, with higher scores indicating a greater drive for thinness. [Garner \(2004\)](#) reported good internal consistency ($\alpha = .83$). Scale validity was demonstrated by positive correlations with measures of dietary restraint and with the Eating Attitudes Test (EAT; [Garner & Garfinkel, 1979](#)). In the current sample, $\alpha = .76$ at pretest, $\alpha = .85$ at posttest, $\alpha = .89$ at 1-month, and $\alpha = .92$ at 3-months.

2.5.4. Social Appearance Anxiety Scale (SAAS; [Hart et al., 2008](#))

This 16-item scale measures anxiety about being negatively evaluated by others because of one's overall appearance. An exemplar item is “I am concerned people would not like me because of the way I look.” Response options ranged from 1 (*Not at all*) to 5 (*Extremely*). Scores were averaged, with higher scores indicating greater social appearance anxiety. The scale authors reported high internal consistency ($\alpha = .94$) and test-retest reliability at one month ($r = .84$) among a sample of college students, and cited evidence of convergent validity with other measures of social anxiety and body concerns. In the current sample, $\alpha = .92$ at pretest, $\alpha = .96$ at posttest, $\alpha = .95$ at 1-month, and $\alpha = .95$ at 3-months.

2.5.5. Upward Physical Appearance Comparison Scale (UPACS; [O'Brien et al., 2009](#))

This is a 10-item scale assessing tendencies to make upward physical appearance comparisons. A sample item is “I find myself comparing my appearance with people who are better looking than me.” The response format ranged from 1 (*Strongly Disagree*) to 5 (*Strongly Agree*). Responses were averaged, with higher scores indicating a greater tendency to compare oneself with targets considered more physically attractive. The scale authors reported high internal consistency ($\alpha = .95$) and adequate test-retest reliability at two weeks ($r = .79$) in a sample of university students, and cited evidence of convergent validity with measures of appearance evaluation and eating attitudes. In the current sample, $\alpha = .88$ at pretest, $\alpha = .95$ at posttest, $\alpha = .95$ at 1-month, and $\alpha = .96$ at 3-months.

2.5.6. Body Appreciation Scale–2 (BAS-2; [Tylka & Wood-Barcalow, 2015b](#))

The BAS-2 is a 10-item scale used to assess the extent to which individuals: (a) hold favorable opinions of their bodies; (b) accept their bodies in spite of their imperfections; (c) respect their bodies by attending to their body's needs and engaging in healthy behaviors; and (d) protect their body image by rejecting unrealistic ideal-media images. A sample item is “I have respect for my body.” The response format comprises 1 (*Never*) to 5 (*Always*). Scores are averaged with higher scores reflecting higher levels of body appreciation. The authors reported high internal consistency ($\alpha = .93$) and test-retest reliability at three weeks ($r = .90$) among a sample of undergraduate students. Support for the validity of the BAS-2 comes from findings of positive correlations with proactive coping and perceived self-attractiveness. In the current sample, $\alpha = .92$ at pretest, $\alpha = .93$ at posttest, $\alpha = .93$ at 1-month, and $\alpha = .94$ at 3-months.

2.5.7. Self-Compassion Scale–Short-Form (SCS-SF; [Raes, Pommier, Neff, & Van Gucht, 2011](#))

This 12-item short-form of the Self-Compassion Scale ([Neff, 2003](#)) provides a total score for self-compassion via four items for each of the three components (a) self-kindness vs. self-judgement, (b) common humanity vs. isolation, and (c) mindfulness vs. over-identification. A sample item is “I try to be understanding and

patient towards those aspects of my personality I don't like.” Response options range from 1 (*Almost Never*) to 5 (*Almost Always*). Scores are averaged (following reverse-scoring of negative items) with higher scores indicating higher self-compassion. The authors reported very good internal consistency ($\alpha = .86$) among a sample of university students. In the current sample, $\alpha = .82$ at pretest, $\alpha = .91$ at posttest, $\alpha = .85$ at 1-month, and $\alpha = .90$ at 3-months.

2.5.8. Intervention feedback

Three items assessed the helpfulness and usefulness of each part of the intervention, and one item assessed the ease with which the self-compassion strategies were applied. Using a scale from 1 (*Not at all*) to 5 (*Extremely*), the four items were: (a) “How helpful did you find the Self-Compassion for Body Image workshop?”; (b) “How useful did you find the group participation on Facebook?”; (c) “How easy were the self-compassion techniques to apply?”; and (d) “How useful were the self-compassion techniques?” Two open-ended questions explored participants' experience of the intervention. The two questions were: (a) “What did you enjoy from this intervention?”; and (b) “What could be improved in this intervention?”

2.5.9. Frequency of use of strategies

Weekly frequency of use of each of the instructed mindful self-compassion strategies was assessed using the stem “How often did you use the following strategies per week?” Responses ranged from 1 (*Not at all*) to 5 (*Daily*).

2.6. Data analyses

There were no missing data in the questionnaires obtained from participants. To control for the impact of attrition bias, we conducted intention-to-treat analyses where missing data were imputed using participants' last observation carried forward ([Lachin, 2000](#)). Data were analysed using a series of 2 (group: intervention, control) \times 3 (time: posttest, 1-month, 3-month follow-up) mixed ANCOVAs, with one of the body image variables as the dependent variable and with grand mean centered pretest levels of the respective dependent variable included as the covariate in each analysis. Using grand-mean centred pretest scores as covariates increases power and reduces risk of Type I errors that may arise from multiple testing ([Van Breukelen, 2013](#)). The dependent variables were body dissatisfaction, drive for thinness, social appearance anxiety, upward physical appearance comparison, body appreciation, and self-compassion.

Partial eta-squared were calculated as effect sizes for each outcome variable where $\eta_p^2 = .01$, $.06$, and $.14$ constitute small, medium, and large effect sizes, respectively ([Cohen, 1969](#)). Cohen's d effect sizes, where $d = 0.20$ is small, $d = 0.50$ is moderate, and $d = 0.80$ is large ([Cohen, 1988](#)), were calculated for between-group mean differences where Group \times Time effects were significant. Effect sizes were also computed for within-group differences where the main effect of Time was significant (i.e., d_z), by using the formula provided by [Rosenthal \(1991\)](#), ($d_z = t / \sqrt{n}$) (see [Lakens, 2013](#), for details). For the ANCOVAs, a priori application of the statistical program G*Power 3.1 ([Faul, Erdfelder, Buchner, & Lang, 2009](#)) determined the minimum number of participants, assuming power of 0.80, and a moderate effect size, to be $N = 67$. A Bonferroni adjustment was set ($\alpha = .017$) to control for multiple comparisons ([Meyers, Gamst, & Guarino, 2006](#)).

We also calculated percentage of clinically significant changes in intervention participants for body dissatisfaction and drive for thinness given that measures of these were used to select participants. Effects were based on the [Jacobson and Truax \(1991\)](#) method ‘C’, that is, whether the level of functioning subsequent to intervention places the participant nearer the mean of the functional population than to the mean of the dysfunctional population. Thus, using norm

cut-offs provided by Garner (2004), the percentage of participants reporting posttest, 1-month, and 3-month scores ≤ 11 for drive for thinness, were calculated, as were the percentages of participants reporting posttest, 1-month and 3-month scores of ≤ 18 for body dissatisfaction.

Two sets of regression analyses were also conducted. The first set examined whether changes in self-compassion from pretest to posttest predicted changes in the five body image variables from pretest to posttest. A Bonferroni adjustment was set ($\alpha = .01$) to control for multiple comparisons (Meyers et al., 2006). The second set examined whether frequency per week of use of the six mindful self-compassion strategies predicted pretest to posttest changes in the six dependent variables within the intervention group. A Bonferroni adjustment was set ($\alpha = .008$). The minimum number of participants was determined to be 29 for these analyses, assuming power of .80 and a moderate effect size. Percentages of participants satisfied with the intervention, via the five feedback, and two open-ended, questions, were also computed.

3. Results

3.1. Preliminary analyses

A flow chart presented in Fig. 1 shows the progress of completers and non-completers through each phase of the study. Descriptive statistics for the intervention and control groups across the four time points are presented in Table 1. No outliers were identified via box-plots and Mahalanobis distance values at the $p < .001$ level. ANCOVA assumptions of homogeneity of variance-covariance as indicated by Box's test ($ps > .01$), and sphericity as indicated by Mauchley's Test ($ps > .05$), were met. Equality of error variance as indicated by Levene's test ($ps > .05$) was satisfactory at pretests for all variables. A multivariate analysis of variance (MANOVA) showed no multivariate effect of group on the set of dependent variables at pretest, $F(6, 69) = 1.21, p = .314, \eta_p^2 = .10$. BMI did not differ between the groups at pretest, $F(1, 68) = 0.07, p = .796, \eta_p^2 = .001$.

3.2. Main analyses

3.2.1. Body dissatisfaction

Analyses revealed a significant main effect of Group, $F(1, 73) = 34.28, p < .001, \eta_p^2 = .32$, and Pretest, $F(1, 73) = 91.51, p < .001, \eta_p^2 = .56$. Group means showed that participants in the intervention group experienced less body dissatisfaction than participants in the control group at posttest, 1- and 3-month follow-up. However, there was also a significant Group \times Time interaction, $F(2, 72) = 15.00, p < .001, \eta_p^2 = .29$. At posttest, $t(74) = -6.32, p < .001, d = 1.17$, and 1-month follow-up, $t(74) = -5.75, p < .001, d = 0.66$, participants in the intervention group experienced less body dissatisfaction than those in the control group, however there was no significant difference between the groups at 3-month follow-up, $t(74) = -1.84, p = .072, d = 0.02$. Results showed a significant main effect of Time, $F(2, 72) = 14.21, p < .001, \eta_p^2 = .28$. Both groups experienced higher body dissatisfaction at 3-months than at 1-month, $t(74) = 5.14, p < .001, d_z = 0.59$, however there was no difference in body dissatisfaction from posttest to 1-month, $t(74) = 0.82, p = 1.00, d_z = 0.09$. The Time \times Pretest interaction was nonsignificant, $F(2, 72) = 2.04, p = .148, \eta_p^2 = .03$.

3.2.2. Drive for thinness

Analyses revealed a nonsignificant Group \times Time interaction, $F(2, 72) = 2.57, p = .078, \eta_p^2 = .09$, and a significant main effect of Group, $F(1, 73) = 34.28, p < .001, \eta_p^2 = .32$, and Pretest, $F(1, 73) = 48.43, p < .001, \eta_p^2 = .40$. Inspection of the group means revealed that, at posttest, 1- and 3-month follow-up, participants in the intervention group engaged in less drive for thinness than

did participants in the control group. The main effect of Time was non-significant, $F(2, 72) = 1.73, p = .637, \eta_p^2 = .05$, as was the Time \times Pretest interaction, $F(2, 72) = .072, p = .374, \eta_p^2 = .002$.

3.2.3. Social appearance anxiety

Results showed a nonsignificant Group \times Time interaction, $F(2, 72) = 1.81, p = .171, \eta_p^2 = .05$, and a significant main effect of Group, $F(1, 73) = 51.17, p < .001, \eta_p^2 = .41$, and Pretest, $F(1, 73) = 44.92, p < .001, \eta_p^2 = .38$. Inspection of the group means showed that participants in the intervention group experienced lower social appearance anxiety than participants in the control group at posttest, 1- and 3-month follow-up. The main effect of Time was significant, $F(2, 72) = 4.33, p = .016, \eta_p^2 = .11$. Pairwise comparisons showed that both groups experienced lower social appearance anxiety at 1-month follow-up than at posttest, $t(74) = 2.73, p = .024, d_z = 0.31$, however, there were no significant changes in social appearance anxiety from 1- to 3-month follow-up, $t(74) = 0.42, p = 1.00, d_z = 0.05$. The Time \times Pretest interaction was nonsignificant, $F(1, 72) = 0.95, p = .910, \eta_p^2 = .003$.

3.2.4. Upward appearance comparisons

Analyses revealed a nonsignificant Group \times Time interaction, $F(2, 72) = 0.88, p = .419, \eta_p^2 = .02$, and a significant main effect of Group, $F(1, 73) = 34.28, p < .001, \eta_p^2 = .32$, and Pretest, $F(1, 73) = 16.70, p = .004, \eta_p^2 = .14$. Inspection of the group means revealed that, at posttest, 1- and 3-month follow-up, participants in the intervention group engaged in less upward appearance comparison than did participants in the control group. The main effect of Time was non-significant, $F(2, 72) = 2.87, p = .064, \eta_p^2 = .07$, as was the Time \times Pretest interaction, $F(2, 72) = 0.26, p = .772, \eta_p^2 = .007$.

3.2.5. Body appreciation

Results showed a non-significant Group \times Time interaction, $F(2, 72) = 0.41, p = .667, \eta_p^2 = .01$ and main effect of Group, $F(1, 73) = 49.57, p < .001, \eta_p^2 = .40$, and Pretest, $F(1, 73) = 33.20, p < .001, \eta_p^2 = .31$. Group means revealed that participants in the intervention group experienced higher body appreciation than participants in the control group at posttest, 1- and 3-month follow-up. The main effect of Time was non-significant, $F(2, 72) = 2.27, p = .076, \eta_p^2 = .05$, as was the Time \times Pretest interaction, $F(2, 72) = 0.90, p = .410, \eta_p^2 = .02$.

3.2.6. Self-Compassion

Analyses revealed a nonsignificant Group \times Time interaction, $F(2, 72) = 2.50, p = .087, \eta_p^2 = .03$, and main effect of Group, $F(1, 73) = 31.49, p < .001, \eta_p^2 = .30$, and Pretest, $F(1, 73) = 28.71, p < .001, \eta_p^2 = .26$. Group means showed that participants in the intervention group experienced higher self-compassion than participants in the control group at posttest, 1- and 3-month follow-up. The main effect of Time was non-significant, $F(2, 72) = 1.41, p = .185, \eta_p^2 = .02$, as was the Time \times Pretest interaction, $F(2, 72) = 1.00, p = .930, \eta_p^2 = .001$.

3.3. Predictors of change in the outcome variables at posttest

Using pretest to posttest difference scores, we assessed whether increases in self-compassion predicted improvements in the five indices of body image: body dissatisfaction, drive for thinness, social appearance anxiety, upward appearance comparison, and body appreciation. Regression analyses revealed that pretest to posttest increases in self-compassion predicted pretest to posttest improvements in all five variables (see Table 2).

Regression analyses also revealed that increased use of the strategy designed to enhance a sense of common humanity predicted gains in body appreciation (see Table 3). Use of the other five mind-

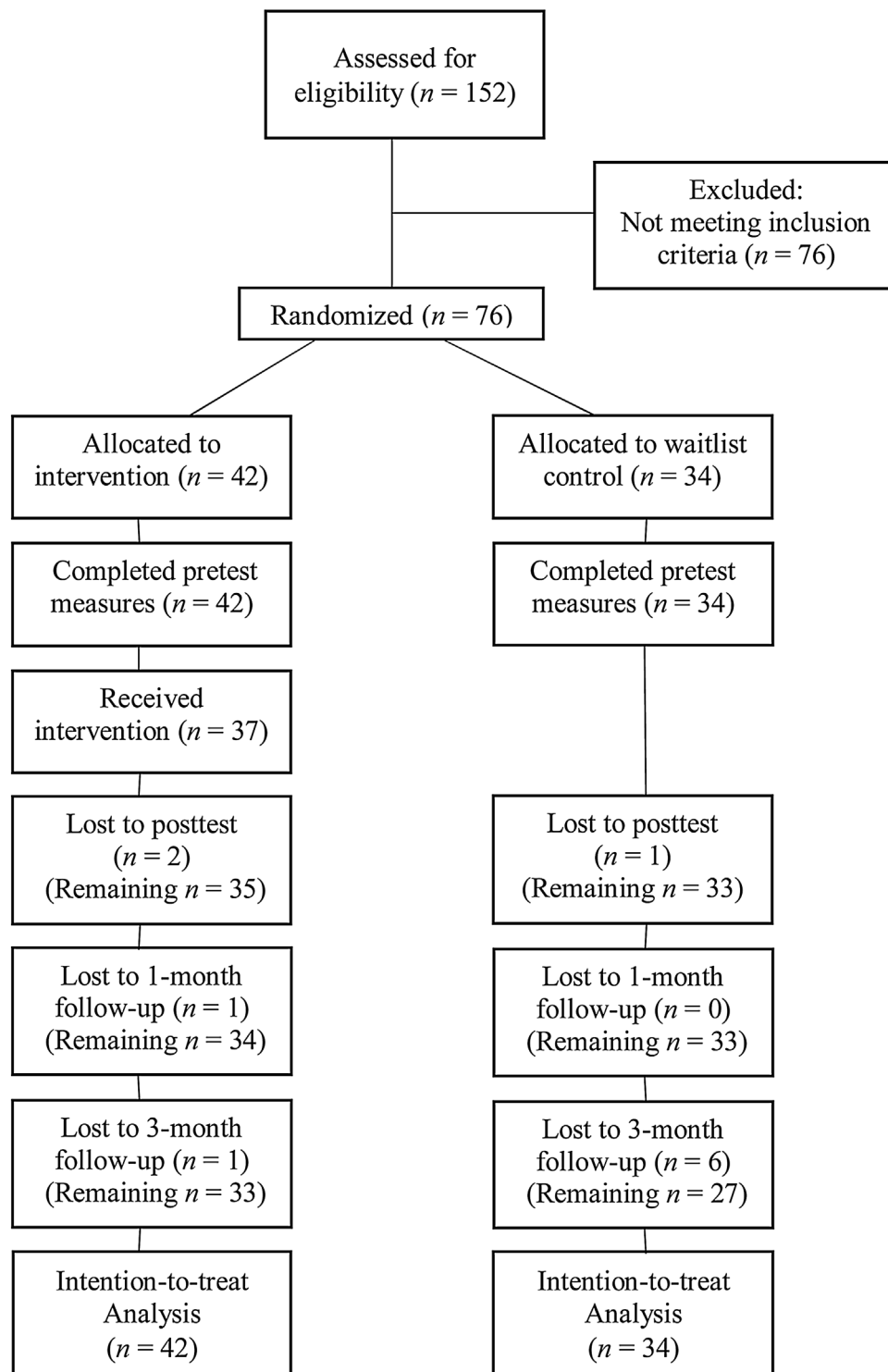


Fig. 1. Flow Diagram of the Progress Through the Enrolment, Intervention Allocation, Follow-Up, and Data Analysis Phases of a Cluster Randomised Trial of the Two Groups.

ful self-compassion strategies did not significantly predict any of the outcome variables.

3.4. Clinical significance

In the intervention group ($n = 42$), 50 % of participants at posttest and 55 % at 1-month had achieved clinically significant change in body dissatisfaction. However, only 33 % of participants recorded clinically significant change in body dissatisfaction at 3-month

follow-up. In terms of drive for thinness, 45 % of participants at posttest, 52 % at 1-month, and 55 % at 3-months, had achieved clinically significant change.

3.5. Intervention evaluations

A majority of the participants (90.9 %) found the workshop very or extremely helpful and 87.9 % found the Facebook group discussions very or extremely useful. Additionally, 90.9 % of participants

Table 1
Means and Standard Deviations for Each Group at Pretest, Posttest, 1-Month and 3-Months Follow-Up.

Outcome	Intervention Group				Wait List Control Group			
	Pretest M (SD)	Posttest M (SD)	1-month M (SD)	3-months M (SD)	Pretest M (SD)	Posttest M (SD)	1-month M (SD)	3-months M (SD)
Body dissatisfaction	4.32 (0.43)	3.56 (0.72)	3.54 (0.76)	4.24 (0.52)	4.22 (0.55)	4.31 (0.55)	4.24 (0.67)	4.25 (0.55)
Drive for thinness	4.42 (0.63)	3.85 (1.04)	3.62 (1.05)	3.57 (1.11)	4.51 (0.65)	4.51 (0.65)	4.63 (0.78)	4.63 (0.78)
Social appearance anxiety	3.77 (0.56)	2.71 (0.88)	2.65 (0.88)	2.61 (0.94)	3.67 (0.74)	3.77 (0.67)	3.43 (0.68)	3.41 (0.79)
Upward appearance comparison	4.24 (0.48)	3.27 (0.81)	3.12 (0.93)	3.08 (0.91)	4.14 (0.46)	4.08 (0.50)	3.92 (0.52)	4.03 (0.59)
Body appreciation	2.46 (0.49)	3.27 (0.71)	3.39 (0.67)	3.40 (0.70)	2.58 (0.61)	2.49 (0.58)	2.67 (0.72)	2.56 (0.68)
Self-compassion	2.03 (0.29)	3.01 (0.69)	2.97 (0.69)	3.10 (0.82)	2.28 (0.54)	2.23 (0.45)	2.42 (0.52)	2.31 (0.57)

Table 2
Standardized Regression Coefficients for Pretest–Posttest Changes in Self-Compassion Predicting Pretest–Posttest Changes in Body Image Outcomes in the Intervention Group.

Outcome	β	R^2_{adj}	SE
Upward appearance comparison	-.62**	.37	.14
Social appearance anxiety	-.60**	.34	.13
Body dissatisfaction	-.74**	.53	.09
Drive for thinness	-.49*	.22	.17
Body appreciation	.67**	.43	.11

Note. * $p < .01$ (Bonferroni adjusted). ** $p < .001$.

Table 3
Standardized Regression Coefficients for Common Humanity Predicting Pretest–Posttest Changes in Body Image Outcomes and Self-Compassion in the Intervention Group.

Outcome	β	R^2_{adj}	SE
Upward appearance comparison	-.12	-.02	.15
Social appearance anxiety	-.35	.09	.13
Body dissatisfaction	-.29	.06	.11
Drive for thinness	-.41	.15	.15
Body appreciation	.49*	.22	.11
Self-compassion	.34	.09	.12

Note. * $p < .008$ (Bonferroni adjusted). For these analyses, the sample size includes only intervention participants who completed posttest measures of frequency of use ($n = 35$).

Table 4
Percentage of participants who used MSC strategies at least 3-times per week at posttest, and at 1- and 3-months.

MSC strategy	Posttest	1-month	3-months
Self-kindness	82 %	64 %	76 %
Common humanity	58 %	49 %	36 %
Mindfulness	73 %	49 %	49 %
Soothing touch	88 %	55 %	52 %
Self-appreciation	61 %	49 %	12 %
Body scan Meditation	33 %	18 %	9 %

Note. For these analyses, the sample size includes only intervention participants who completed all follow-up measures of frequency of use ($n = 33$).

found the strategies very or extremely easy to apply and very or extremely useful. Most commonly suggested improvements were increasing the time allocated to the Facebook discussion and providing booster workshop sessions. Table 4 shows that self-kindness was consistently the most popular strategy used. To determine whether common humanity was indeed experienced by the participants who engaged in the Facebook group discussions, we examined participants' comments regarding what they enjoyed about the intervention for signs of common humanity (e.g., phrases such as "I wasn't alone" and "sharing similar experiences"). We found that 31 of the 35 (89 %) women commented on the empowerment they felt through the sharing of experiences and emotions, and the feeling of being less alone. Representative of this finding was Participant 28 who stated: "Having a good group of girls who

got to share similar experiences to me made me feel less alone, and we could together learn and help each other love our bodies more."

4. Discussion

This study evaluated the effectiveness of a brief Mindful Self-Compassion program designed to improve body image and self-compassion in young women with body concerns. Relative to a waitlist control, the women who participated in this program experienced lower body dissatisfaction, drive for thinness, social appearance anxiety, and upward appearance comparison, and higher body appreciation and self-compassion, at posttest and 1-month follow-up. These effects, except those for body dissatisfaction, were maintained at 3-month follow-up. With the exception of body dissatisfaction levels at 3-month follow-up, the reductions from pretest in body dissatisfaction and drive for thinness were shown to be clinically significant. Effect sizes were large and equivalent to those obtained using longer-term Mindful Self-Compassion programs (e.g., [Albertson et al., 2015](#)). This suggests that benefits reported in previous research could be achieved using shorter programs and adds support to evidence indicating that brief, single-session programs may be as effective as longer, multi-session programs at reducing eating disorder symptomatology ([Melioli et al., 2016](#)), at least when those programs include an online component allowing participants to share their experiences and support one another afterwards.

Two further objectives of the current program were to (a) improve retention rates and levels of participant engagement over those observed in prior Mindful Self-Compassion interventions and (b) highlight the common humanity aspect of self-compassion through a Facebook group. Findings suggest these objectives were met. Indeed, the retention rate for members of the intervention group was 89 % at 3-month follow-up, and 89 % of participants acknowledged their experience of common humanity through the Facebook group. Furthermore, use of a strategy aimed at increasing a sense of common humanity predicted increases in body appreciation from pretest to posttest for the intervention group.

Consistent with our hypotheses, and extending prior mindful self-compassion meditation interventions (e.g., [Albertson et al., 2015](#)), current findings show that a combination of mindful self-compassion strategies may help reduce body dissatisfaction for up to one month and increase body appreciation and self-compassion for up to 3 months. To our knowledge, this is the first study to show significant reductions in drive for thinness, social appearance anxiety, and upward appearance comparisons, for up to 3 months, utilising a combination of six mindful self-compassion strategies. There are several factors that may have contributed to improvement in body image and self-compassion. Notably, the utilization of the strategies during appearance-related experiences were reported by nearly all participants to be both easy and useful. It seems that practicing mindful self-compassion may have decreased participants' tendency to criticize their bodies by treating themselves kindly rather than being judgemental. More

specifically, given that self-kindness and the soothing touch were the most frequently used strategies, perhaps it was mainly the combination of caring self-talk and physical warmth that led to reductions in negative evaluations, anxiety, and unfavourable comparisons to others. Indeed, this combination may, in turn, have nurtured in participants a more accepting perspective of their appearance.

Other mindful self-compassion strategies and program components may also have contributed to improved body image and self-compassion. Perhaps reading about other women's body image experiences, before and after using the strategies, helped the group members feel less isolated and more empowered that they could do the same. Recognition of such interconnectedness may also provide additional benefits in terms of changing perceived social norms (Bergstrom & Neighbors, 2006). Indeed, reading other women's comments about trying positive strategies to improve the way they view their bodies may have changed normative expectations in terms of the thin-ideal, thereby leading women to detach from such appearance ideals and comparisons. In turn, the promotion of a broader and more inclusive perspective of beauty may have emerged. Furthermore, the realisation that failures and imperfections are part of a shared human experience (Neff, 2003) may dampen the fear of being negatively evaluated by others, allowing unreserved self-acceptance and appreciation to develop. Additionally, and in line with previous studies (Moffitt et al., 2018; Seekis et al., 2017; Stern & Engeln, 2018), the therapeutic benefits of self-compassionate writing—a core component of participation in the Facebook group—may have ameliorated body concerns and encouraged a more positive attitude toward one's appearance.

The mindful self-compassion strategy of mindfulness may have enabled the women to respond to their appearance-related distress in a way that neither ignored the negative feelings nor promoted rumination. Moreover, by acknowledging and understanding their negative emotions as valid and important, positive emotions such as appreciation and acceptance may have been generated (Neff & Germer, 2013), particularly in the context of a group discussion which encouraged a sense of empowerment. Finally, the practice of self-appreciation and, to a lesser extent, the body scan meditation may also have provided the women with “me time”, in a relaxed space, where they could relate to themselves with tenderness and care. In the future, research that seeks to identify the most effective elements of the current program will be valuable.

With regards to body dissatisfaction, and in line with our hypotheses, current findings revealed lower scores at posttest and at 1-month follow-up for the intervention group compared to the control group but, unexpectedly, this difference was not maintained at 3-month follow-up. This is in contrast to Albertson et al. (2015) who found that reduced body dissatisfaction was still evident at 3-months following a three-week Mindful Self-Compassion meditation intervention. Although the different study findings may be due to differences in the duration of the two interventions, another factor possibly contributing to the discrepancy may be that body dissatisfaction was assessed using different scales. While the Body Dissatisfaction Subscale from the Eating Disorders Inventory-3 (EDI; Garner, 2004), used in the current study, assesses dissatisfaction with specific body parts (e.g., thighs), the Body Shape Questionnaire (BSQ; Cooper, Taylor, Cooper, & Fairburn, 1987), used in Albertson et al.'s study, assesses concern with overall body shape, body shape in certain circumstances, and diet. Indeed, some of the BSQ items may tap into drive for thinness (Garner, 2004), which, as hypothesised, decreased for up to 3-months.

The maintenance of effects on most of the dependent variables through to 3 months suggests that booster sessions targeting these outcomes may not be required this soon after intervention. However, there was no difference between the intervention and control group in body dissatisfaction at 3 months, and fewer interven-

tion group participants showed a clinically significant reduction in body dissatisfaction, at this stage. This suggests a need to either place greater emphasis in the face-to-face workshop on sources of body dissatisfaction, extend the duration of the online group, and/or schedule, within three months, follow-up sessions that target this particular outcome. However, before major changes are made to the program, the current findings should be replicated using different ways of measuring body dissatisfaction. As mentioned earlier, the assessment of body dissatisfaction in this study focused on isolated body areas (e.g., thighs), whereas the Body Appreciation Scale-2 (Tylka & Wood-Barcalow, 2015b) addressed attitudes to body image from a holistic perspective. Sustaining changes in holistic body-related attitudes may be easier than sustaining improvements in evaluations of specific body parts, and may well give respondents discretion as to which body parts they have in mind when giving their global evaluation. Perhaps, as current findings suggest, women can be dissatisfied with isolated areas of their body, yet honour, love, and respect their body as a whole (Tylka & Wood-Barcalow, 2015a).

Notably, current findings show that the more common humanity was practiced, the greater the improvements in body appreciation. This finding contributes to that of Albertson et al. (2015) who found that frequency of mindful self-compassion meditation predicted body appreciation only and no other outcome variables. Perhaps shared experiences on a forum, such as Facebook, boosted engagement with the program and interconnectedness with other women which may have generated a positive attitude toward one's body that entailed gratitude and respect. Although sharing experiences online can trigger interconnectedness, this may not be enough on its own to produce decreases in the often unintentional and automatic comparisons women make to idealized images (Strahan, Wilson, Cressman, & Buote, 2006) or in the appearance-related discontent that women commonly experience (Tantleff-Dunn, Barnes, & Jessica, 2011).

Somewhat surprisingly, frequency of use of each of the other mindful self-compassion strategies did not predict any of the outcome variables at posttest. This may be for several reasons. For example, some of the strategies (e.g., body scan meditation) were rarely used, and it is thus possible that a critical threshold of use of these strategies was not reached. Equally, perhaps the effectiveness of these strategies is not necessarily reliant on frequency of use, but on integrity of adherence. For instance, Seekis et al. (2017) showed that, relative to women who wrote about neutral topics, women who conscientiously wrote in a self-compassionate way for a full 15 min had higher levels of body satisfaction and body appreciation. Also, intervention benefits may result not from the frequency of use of these other strategies alone, but from the frequency of their use *in combination*.

4.1. Strengths, limitations and additional directions for future research

Study strengths include the use of a cluster randomized design, an intervention that addressed body concerns and positive body image, three points of follow-up data collection, high retention rates, and the separate assessment of the use of six mindful self-compassion strategies. In addition, the Mindful Self-Compassion program was brief, relatively inexpensive, and easy to administer. Notably, although Facebook was chosen for its communicative focus, ease of use, and its privacy settings, the online component of our intervention can be transferred to any online medium.

However, there are also limitations. Findings should be considered tentative given a waitlist control was used rather than an active control. It could be that those in the waitlist control reported greater body concerns, than those in the intervention group, knowing they could eventually receive treatment. Although it is not

conclusive that the mindful self-compassion strategies were the crucial ingredient of the program's success, several findings may provide evidence of their contribution. First, bearing in mind that the intervention was designed to increase self-compassion, the intervention group, relative to the control, showed increases in self-compassion from pretest to posttest and this increase predicted improvements in the body-related variables. Second, the finding that frequency of use of common humanity predicted gains in body appreciation suggests that parts of our intervention contributed to changes in positive body image. Third, the comments received from participants in response to the workshop/online intervention were very positive (especially in terms of the Facebook component), a finding that is at least consistent with the conclusion that aspects of this intervention contributed to positive changes in most dependent variables.

Nonetheless, as with all intervention research, it is also possible that demand characteristics were at play. Thus, future research would benefit from an active control program that addresses negative and positive body image (e.g., one based on cognitive behavior therapy [CBT] principles). Further, although posting on Facebook three times per week should have reduced the impact of misreporting, the frequency with which participants utilized the strategies was assessed by self-report. A more objective method for registering this information should be implemented in future research. Additionally, as this short-term program was tested on a small sample of predominantly White women aged 17–21, with body concerns, questions regarding the program's efficacy over longer time frames, with larger samples, in different age groups and cultures, with men, and as a primary preventative intervention remain unanswered, providing paths for future research. Also worthy of further investigation is the unique role of the current program's components: it would be interesting to know, for example, the extent to which the observed effects were due to the workshop and to the online discussion activities.

4.2. Conclusion

In conclusion, the present findings indicate that a brief Mindful Self-Compassion program complemented by an online discussion group that uses a platform such as Facebook, can improve body image and self-compassion among young women. Encouragingly, it appears that women who are briefly trained in mindful self-compassion strategies find them easy to apply during appearance-related distress and useful in reducing the impact of critical evaluations and increasing self-acceptance. Additionally, creating an online group, in which young women feel safe to share their body image experiences within the mindful self-compassion framework, can be an effective strategy to help them develop a more positive relationship with themselves.

CRedit authorship contribution statement

Veya Seekis: Conceptualization, Methodology, Formal analysis, Project administration, Investigation, Writing - original draft. **Graham L. Bradley:** Supervision, Methodology, Writing - review & editing. **Amanda L. Duffy:** Supervision, Writing - review & editing.

Acknowledgements

The authors wish to thank the two anonymous reviewers for their helpful feedback, and the Associate Editor Dr Jessica All-eva for her helpful suggestions on an earlier version of this manuscript.

Appendix A. Supplementary data

Supplementary material related to this article can be found, in the online version, at doi:<https://doi.org/10.1016/j.bodyim.2020.07.006>.

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