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A Systematic Review of Compassion-Based Interventions for Individuals Struggling with Body Weight Shame

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**Abstract**

**Objective:** This systematic review investigated compassion-based interventions and the extent to which they can assist with addressing body weight shame. **Design:** The systematic review was pre-registered and conducted according to PRISMA guidelines. Seven electronic databases (PsycNET, Pubmed, Web of science, CINAHL, Scopus, ProQuest, Social Science Database) were searched. The methodological quality of studies was also assessed. **Main Outcome Measures:** Main outcomes were body weight shame, and compassion. Secondary outcomes assessed were mental health, eating attitudes and behaviours, physical exercise and Body Mass Index and weight. **Results:** 25 studies (23 papers) met inclusion criteria and results indicated promise for compassion-based interventions for body weight shame, compassion, and health related behaviour. Mixed results were found for BMI and weight. The studies varied considerably in terms of populations targeted, the duration of interventions, and intervention delivery. **Conclusion:** Overall, compassion-based interventions were found to reduce body weight shame and improve levels of compassion. However, the impact of compassion-based interventions on BMI and weight is less promising. Recommendations for future research are provided.

*Keywords:* Compassion; Self-compassion; Compassion Focused Therapy; Body Weight Shame; Systematic Review

**A Systematic Review of Compassion-Based Interventions for Individuals Struggling with Body Weight Shame**

Physical appearance, particularly body weight, is a dimension that is often a source of social comparison and negative judgement (Gilbert, & Andrews, 1998). In Western cultures, individuals in larger bodies experience a great deal of body weight shame (Major et al., 2012). An ecological momentary sampling study by Vartanian and colleagues (2014), assessed the amount of shame 46 individuals, with a Body Mass Index (BMI) greater than 30 experienced across a two-week period and found that, on average, participants experienced 11.12 episodes of weight related shame per day. Importantly, the source of the verbal and non-verbal shame came from partners, friends, and parents. The study by Vartanian and colleagues (2014) highlights just how common it is to experience messages of shame about our bodies in everyday life.

Shame is a self-conscious emotion where the individual sees themselves as being devalued by others or has lost status, making them feel inferior (Gilbert & Andrews, 1998). Body weight shame, therefore, refers to how the person feels inferior or devalued by others because of their body weight. Importantly, shame distinguishes between external and internal sources. External shame is focused on how others view me (e.g., *that person thinks I am fat*) and internal shame is how the person judges themselves (e.g., *I am fat*). Both sources of shame significantly impact anxiety and mood (Wetherall et al., 2019). Importantly, one can experience body weight shame irrespective of body weight size, although those in larger bodies (operationally defined here as having a BMI greater than 30) tend to experience higher levels of body weight shame compared to those in the healthy weight range (Carter, Hoang, Gilbert, & Kirby, 2021). Moreover, those in larger bodies commonly judge and blame themselves more harshly for their size (Carter et al., 2020; Haynes et al., 2018).

Due to these challenges and the impact that body weight shame has on the experience of mental health difficulties (Duarte et al., 2018) a number of interventions have been developed to help individuals with negative feeling and thoughts about their body weight, such as: Cognitive Behaviour Therapy (CBT; Jacob et al. 2018); psychoeducation on nutrition (Palmeira, Pinto-Gouveia, & Cunha, 2017), mindfulness-based programs (Olson & Emery, 2015), intuitive eating interventions (Schaefer & Magnuson, 2014), and yoga interventions (Hofmann et al., 2016). Whilst these different forms of intervention have been found to help, none of these interventions directly target body weight shame. Rather they tend to focus on body weight, eating and health behaviours, as well as body satisfaction and depressed mood. This is where compassion-based interventions offer great potential, as one of the primary aims of a compassionate approach is to target shame and self-criticism in order to help with mental health and wellbeing (Gilbert & Procter, 2006; Kirby, 2016).

**Compassion-Based Interventions for Body Weight Shame**

There are various definitions of compassion (Goetz et al., 2010; Strauss et al., 2016), with Gilbert defining it as, *“the sensitivity to suffering in self and others, with a commitment to try to alleviate and prevent it*” (p. 14, Gilbert, 2014). This definition underpins Compassion Focused Therapy (CFT) which is a therapy model developed to specifically target shame and self-criticism (Gilbert, 2014). According to social mentality theory, which is the theoretical model underpinning CFT, when one is in a competitive motivational system and is experiencing shame, it increases the likelihood the individual will rely on a hostile self-relating style (self-criticism) in order to self-regulate (Gilbert, 2014). The reliance on self-criticism as a self-regulatory style has been consistently found to lead to increased depressive symptoms (Zuroff et al., 2007), increased neural activation of threat and pain regions (e.g., amygdala and anterior cingulate and anterior insular; Kim, Henderson, Best, Cunnington, & Kirby, 2020; Kim, Parker, Doty, Cunnington, Gilbert, & Kirby, 2020), and reduced heart rate variability (Kim et al., 2020). In contrast, a compassionate self-relating style has been found to improve motivation (Breins & Chen, 2012), reduce self-criticism (Kim et al., 2020), improve mental health and wellbeing (Kirby, Tellegen, et al., 2017), and improve heart rate variability (Kirby, Doty, et al., 2017).

A compassionate approach for addressing body weight shame is starting to gain considerable attention (Duarte et al., 2019), with a range of different compassion-based programs (e.g., CFT, Mindful Self-Compassion) being applied and evaluated to help address body weight shame (Carter et al., 2020). These intervention models will include a range of unique approaches to help individuals struggling with shame and self-criticism (Kirby & Gilbert, 2017). Common among many of the interventions is to use loving-kindness or compassionate meditations, which involve sending compassionate wishes to oneself, such as, *“may you be free of suffering”* (Mantzios & Wilson, 2015). A recent study found a 12-week CFT program was effective at reducing body weight shame (Carter, Gilbert, & Kirby, 2020). Some of the core CFT components in the program included techniques such as grounding the body (e.g., posture), soothing rhythm breathing, developing a friendly and supportive inner voice tone, and imagery exercises such as safe place imagery and the ideal compassionate other. These series of techniques are introduced as building blocks to developing the ‘compassionate-self’, a mind-state where the person imagines they have a sense of wisdom, strength and commitment. The person’s compassionate-self is then used to help work with the self-criticism and shame they are experiencing. The program was found to significantly and reliably reduce body weight shame for participants whilst also increasing compassion and improving health-engaging behaviours (Carter et al., 2020).

Although compassion-based interventions hold great promise for those experiencing body weight shame, investigation into its effectiveness is typically limited to health engaging behaviour outcomes (for example: Rahimi-Ardabili et al., (2018), eating disorders (Steindl et al., 2017), or the use of the Self Compassion Scale (Neff, 2003). Thus, our systematic review broadens the scope by measuring compassion beyond the Self-Compassion Scale. For example, a common experience when dealing with shame and self-criticism is a fear of compassion (Gilbert & Procter, 2008). Fears of compassion refer to the avoidance or fear response that many can have to compassion. Examples of fears of compassion include that is a weakness, self-indulgent, or a fear that they are undeserving of compassion (Kirby, Day, & Sagar, 2019). A scale assessing the fears of compassion was developed by Gilbert and colleagues (2010), and meta-analytic research has found that fears of compassion are strongly associated with levels of shame and self-criticism, and also with depressive and anxious symptoms (Kirby et al., 2019). Thus, it would be expected within a group experiencing high levels of body weight shame that many would be fearful of compassion. In addition, one does not need a clinical disorder to experience body weight shame (Carter, Hoang, Gilbert, & Kirby, 2021). Past reviews of compassion-based interventions have found those with eating disorders do experience body weight shame, self-criticism and fears of compassion (Steindl et al., 2017). In this review, we excluded eating disorders to determine whether compassion-based programs could be helpful at reducing body weight shame regardless of disorder.

**Aim**

The aim of this systematic review was to determine whether compassion-based interventions can help with the reduction of body weight shame. The aim of the intervention or program had to be to purposefully generate compassion or self-compassion to assist with body weight shame. Specifically, the two primary outcome measures of interest were self-reported measures of body weight shame (e.g., external and internal shame) and compassion (e.g., self-compassion, compassion to others, fears of compassion). In addition, we were also interested in the impact compassion-based interventions had on other important relevant outcomes including mental health(e.g., depression, anxiety, stress and wellbeing), eating attitudes and behaviours, physical exercise, and Body Mass Index (BMI) and/or weight. The findings of this systematic review will provide insights as to whether compassion-based interventions are helpful.

**Method**

***Design***

The systematic review was conducted according to PRISMA guidelines (Moher et al., 2009), and the systematic review protocol was pre-registered on PROSPERO, an international prospective register database of systematic reviews (CRD42018103858).

***Search and selection methods***

 Seven electronic databases (PsycNET, Pubmed, Web of science, CINAHL, Scopus, ProQuest, Social Science Database) were searched with no time or study restrictions employed. All searches were conducted on 19th of December 2019. The following terms were searched for in any field: “compassion” AND “program” OR therap\* OR “intervention” OR “training” AND “weight” OR “body image” OR "body dissatisfaction" OR "body shame" OR “eating”. Reference lists of relevant articles were searched, and key authors were contacted via emails for further studies to review. After removal of duplicates, the abstracts and titles were screened of every article. The two authors reviewed all full-test articles to address eligibility. See Figure 1 for an overview of the identification and selection of included studies.

***Eligibility Criteria***

Full inclusion and exclusion criteria provided in Table 1. Studies were not included if they did not meet eligibility criteria. For inclusion, studies had to be an experimental design (e.g., randomised controlled trial, quasi-experimental trial, or pre-post evaluation), evaluating an intervention purposefully generating compassion or self-compassion, and be published in English. Studies needed to include a self-report measure relating to at least one of the following outcomes, body weight shame, compassion (e.g., self-compassion, compassion to others, fears of compassion), mental health, eating attitudes and behaviours, physical exercise, BMI and weight. The target population was adults over the age of 18, with a BMI greater than 18, that were physically healthy (i.e., no medical condition – e.g., cancer). Measures assessing for clinical phenomena such as depression and distorded eating behaviour measures were included; however, diagnosed eating disorders or clinical disorders such as depression were excluded.

INSERT TABLE 1

**Methodological quality**

To provide the most comprehensive systematic review of compassion-based interventions on body weight shame we adopted an inclusion-based approach (Kraemer et al., 1998), and studies were not excluded based on methodological quality. To assess the relationship between intervention effects and methodological quality, a measure of methodological quality developed by Downs & Black, (1998) was employed. The scale assesses studies according to four subscales: (a) reporting (e.g. “is the hypothesis/aim/ objective of the study clearly described”); (b) confounding (e.g. “were study subjects randomized to intervention groups”); (c) bias (e.g. “was an attempt made to blind study subjects to the intervention they have received”); and (d) external validity (e.g. “were the subjects asked to participate in the study representative of the entire population from which they were recruited”). Downs and Black (1998) report good psychometric properties of the scale with high internal consistency (Kuder–Richardson-20 = .89), high re-test reliability (r = .88), and good inter-rater reliability (r = .75).

**Data extraction**

The study and intervention characteristics were extracted by two independent researchers. The following information was extracted: publication details (e.g. author details and year of publication), study design, study location (country), duration of intervention, delivery format (e.g. group), completion data, participant criteria, measurement times, sample size, mean BMI, mean age, gender, developer involvement (whether the developer of the intervention was included as an author of the evaluation paper, 1 = yes, 0 = no), attrition, protocol adherence and outcomes. In our study protocol published on PROSPERO in 2018 we indicated we would include qualitative studies. However, given the large number of empirical articles identified by this search, we decided not to include the qualitative studies.

**Results**

**Study Selection**

A total of 1,398 articles were identified using our search strategy, see Figure 1 for details on the selection of studies. After duplicates were removed this left 815 studies, which the titles and abstracts were screened for eligibility. After this process 41 studies remained which were full text assessed for eligibility by the first and third author. After that process 23 studies were identified as being eligible for the systematic review.

INSERT FIGURE 1

**Study Characteristics**

Table 2 provides an overview of the study characteristics. Of the 25 included studies the earliest published was from 2009 (Stuart, 2009), with the remaining studies being published in the last seven years. Forty-one percent of the included studies were published in 2018-2019, indicating the rapid rise of the application of compassion-based interventions to populations with weight concerns. Of the included studies, most were a randomised controlled trial design (*n* = 13), with eight studies using a pre-post evaluation of an intervention without a controlled group comparison, and three included a between-groups experimental design. The sample sizes of the studies ranged from as small as five participants for a pilot evaluation study (Carter, et al., 2020), to as large as 1,158 participants (Stern & Engeln, 2018), however, that was for a between-groups design. In terms of randomised controlled trails, studies ranged from a sample size of 29 (Stuart, 2015) to 974 (Duarte et al., 2019). Of the randomized controlled trials, most had a wait-list control or treatment-as-usual comparison (*n* = 5), the other eight studies had an active control comparison (e.g., Slimming World Program, Duarte et al., 2019). Most studies had a follow-up measurement (*n* = 15) ranging from 1-month (*n* = 1) to 12-months (*n* = 3), with the most popular being 3-months follow-up (*n* = 9), and two studies having six-month follow up. The remaining 10 studies collected post-intervention data only.

INSERT TABLE 2

**Participant Characteristics**

The studies largely recruited female participants, with 15 studies recruiting exclusively female populations. Of those studies with male participants (*n* = 9) the range was from as little as 1% of the sample to 95%, with the largest male recruitment for a study conducted with military personnel (sample size = 63; Mantzios & Wilson, 2015). Across the studies the participants were largely drawn from University or College undergraduate samples (*n* = 12), however, participants were also recruited from organisational staff (*n* = 1), military personal (*n* = 1), and wider community samples (*n* = 11). The average age range varied depending on target population, with seven of the community samples having an average range from 34.82 (Palmeira et al., 2019) years to 52.9 years (Stuart, 2015), there were 12 studies where the average ages was between 18 years and 24 years. Of those 12 studies, 10 used a university/college sample. The remaining studies did not clearly report age demographics (e.g., Braun et al., 2012). Among the studies, the target populations as expressed by the sample criteria were mostly for those individuals who had a BMI greater than 25 (*n* = 8), trying to lose weight (*n* = 1) or had concerns of body image, disordered eating and/or eating disorder (*n* = 2). The remaining studies had an open eligibility criteria, whereby participants only had to be adults over 18 years of age attending a university/college. Most of the studies were conducted in the USA (*n* = 18), with the other studies from Australia (*n* = 3), Greece (*n* = 2), Portugal (*n* = 2), and UK (*n* = 1).

**Interventions Characteristics**

All interventions focused on the purposeful generation of either self-compassion or compassion. Neff’s (2003) self-compassion and Mindful Self-Compassion program informed at least six of the intervention studies included. Gilbert’s (2014) Compassion Focused Therapy and Compassionate Mind Training informed at least six of the interventions. The remaining studies used formal Buddhist meditations, mindfulness with a focus on compassion, and compassion meditation with body focused techniques such as yoga. The two studies that used group-based yogic techniques were derived from Ayurveda (Braun, Park, Gorin, et al., 2016) or Kripalu yoga methods (Braun et al., 2012), which have a compassion focus. Almost all studies included some form of psychoeducation, whether that be in terms of weight, healthy eating, de-stigmatising obesity, understanding emotions, and stress management. Where possible the descriptions of the techniques used in each intervention and study are included in Table 2.

The majority of studies included home practices such as soothing rhythm breathing (Carter et al., 2020), walking, gentle yoga postures (Braun, Park, Gorin, et al., 2016), meditation (Mantzios & Wilson, 2014, 2015; Palmeira et al., 2017; Toole & Craighead, 2016), compassion or self-compassion practices such as visualisation (Carter et al., 2020; Duarte et al., 2019; Palmeira et al., 2017). Some studies included workbook activities (Carter et al., 2020; Vimalakanthan, Kelly, & Trac, 2018), others included a mindful food diary (Mantzios & Wilson, 2014) or daily log of meditation practices (Pineau, 2014). In addition, some studies provided participants with audio recordings for homework (Carter et al., 2020; Albertson et al., 2015; Braun, Park, Gorin, et al., 2016; Pineau, 2014; Pinto-Gouveia et al., 2017; Seo, 2015; Toole & Craighead, 2016), paper handouts (Braun, Park, Gorin, et al., 2016; J. Stuart, 2009), or workbooks (Carter et al., 2020; Horan & Taylor, 2018; Mantzios & Wilson, 2014, 2015; Palmeira et al., 2017). Of those programs with explicit homework exercises, the dosage ranged from approximately 10 – 60 minutes per week.

In terms of mode of delivery, some were delivered online as self-directed programs (*n* = 3), however, the majority were delivered in a group format (*n* = 21). Only one study had individual face-to-face mode of delivery (Toole & Craighead, 2016). Intervention length also varied, with some studies having a single sessions (Stuart, 2009), with included homework exercises (Vimalakanthan et al., 2018). Other studies included a full day workshop without homework (Forbes et al., 2020; Joplin, 2015), and others with homework (Mantzios & Wilson, 2014, 2015). In comparison, other studies offered weekly 30-mintue or one-hour sessions across a six-week (Pineau, 2014) to a 10-week period (Horan & Taylor, 2018; Palmeira et al., 2019, 2017; Stuart, 2015). One study offered 12 sessions (two-hours each) across a six-week period (Carter et al., 2020). Finally, the Braun et al., (2012) study offered a five-day intensive retreat program delivered at a residential retreat centre. In total, the intervention dosage across the included studies ranged from three minutes (Moffitt et al., 2018) to 64.75 hours (Braun et al., 2012).

**Outcomes**

Given the heterogeneity among the included intervention types and samples evaluated, it was too early to conduct meta-analytic evaluations. Rather we focused on reviewing how these intervention studies were evaluating outcomes of 1) body weight shame (e.g., external and internal shame) and 2) compassion (e.g., self-compassion, compassion to others, fears of compassion), and other important relevant outcomes including mental health (e.g., depression, anxiety, stress and wellbeing), eating attitudes and behaviours, physical exercise, and Body Mass Index (BMI) and weight.

**Body Weight Shame**

Of the included studies 72% (*n* = 18) had a measure related to body weight shame. Specifically, 48% (*n* = 12) of studies measured weight specific body shame (e.g., weight-focused external shame scale) (Balsamo et al., 2015), with the other predominant scale being the Body Image Shame Scale (*n* = 5) (Duarte et al., 2015). Out of the studies measuring body weight shame, 87% (*n* = 7) were published between 2015 and 2020. All studies with a measure of shame reported that compassion-based interventions reduced self-reported levels of body related shame. For example, the results from the RCT study of Duarte and colleagues (2019) revealed that compassion-based interventions significantly reduced body related shame for individuals (*n* = 974) taking part in a community weight loss program (Slimming World), and these results maintained at a three-month (*d* = .45), six-month (*d* = .48) and 12-month (*d* = .30) follow-up period. These results were also supported by a smaller study by Carter et al., (2020) with results showing that 12-sessions of CFT significantly reduced body weight shame.

**Compassion**

Of the 25 studies, 84% included an outcome measure of compassion (*n* = 21), with the most commonly used measure to assess compassion or self-compassion being the Self-Compassion Scale (SCS) (Neff, 2003). Most studies used the full-scale version of the SCS (*n* = 16) rather than the short form (*n* = 3). Of the remaining studies, two used the Compassionate Engagement and Action Scale (Gilbert et al., 2017), with the remaining ten not having a specific compassion self-report scale. All studies using a version of the SCS reported significant improvements. Almost all of the studies reported the Total Score of the SCS, and not the subscales, thus one is unable to determine whether these interventions are improving the kindness-based aspects or reducing the coldness-based aspects of self-compassion (Muris et al., 2018). As an example, the Albertson et al study (2014) and Pineau (2014) included the subscale scores, as well as total score change for self-compassion, and found improvements in all six subscales. Of those that provided subscale scores on the SCS effects sizes were not reported. One study measured compassion to others or receiving compassion from others (Duarte et al., 2019).

**Mental Health**

Eight studies of the 25 (32%) included an outcome measure of mental health. The most common measure used was the Positive and Negative Affect Scale (*n =* 4) (e.g., Stern & Engeln, 2018), followed by the Satisfaction with Life Scale (*n =* 2) (e.g., Horan & Taylor, 2018), the Profile of Mood States (*n =* 1) (Braun et al., 2012) and finally the Depression, Stress and Anxiety Scale (DASS-21) (*n =* 1) (Forbes et al., 2020). The DASS-21 was used in one study (Forbes et al., 2020), where the DASS Total Score was reported and not the individual subscales. Although there was no control group, there was a significant decrease from pre-to-post, and these were maintained at three-month follow-up.

**Eating Attitudes & Behaviours**

The most common health engaging behaviours that were measured was eating attitudes and behaviour (*n* = 18), with the most used scale being the Eating Attitudes Test (*n* = 6). In relation to eating outcomes eight studies reported that compassion-based interventions improved mindful eating (i.e., Braun, Park, & Gorin, 2016), intuitive eating (Joplin, 2015; Stuart, 2015), restrained eating (Vimalakanthan et al., 2018), nutritional behaviours (Braun et al., 2012), and reduced unhealthy eating behaviours (Palmeira et al., 2017; Carter et al., 2020).

**Physical Exercise**

Seven studies included an exercise outcome. Outcome measures included running time trials (Pineau, 2014), fitness measurements (e.g., cardiovascular endurance) (Horan & Taylor, 2018), mindful exercises (e.g., moving with awareness) (Horan & Taylor, 2018), self-reported exercise habits (Vimalakanthan et al., 2018; Braun et al., 2012; Carter et al., 2020) or motivations for physical activity (Stuart, 2015). Most interventions did not measure time spent in exercise or physical activity. One study that did measure physical activity was Horan & Taylor (2018). Horan & Taylor (2018) assessed a sample of 24, university employees across a 10-week behavioural change program that included guided group fitness exercises. Findings indicated significant changes in muscular endurance (e.g., abdominal crunches and push-ups), however, there was no comparison group.

**Body Mass Index (BMI) and Weight**

Five studies included measurement of BMI, with three other studies including actual body weight change (Braun et al., 2012). For example, Horan & Taylor (2018) aimed to improve objective indicators of health status and physical fitness which included measurements of weight, BMI, fat percentage, and a range of body circumference measurements (e.g., waist). In addition, Palmeira et al., (2017) hypothesised that after Kg-Free, participants would be more open, accepting and compassionate towards themselves and their unwanted internal experiences (especially relating to eating and weight) which included measurements of BMI and waist circumference. Palmeira et al (2017) reported changes in BMI for the compassion-based intervention group between baseline and post-treatment assessment and reported a significant small effect size (*d* = 0.12), with changes from post-treatment maintained at three-month follow-up. Forbes et al., (2020) also reported a non-significant trend of mean group weight loss from pre-treatment to three-month follow-up, with 14% of participants experiencing weight gain (i.e., between 1kg and 1.5kg). Carter et al., (2020) used BMI as an inclusion measure, however, did not assess BMI at post or follow-up time points. In addition, Braun et al., (2012) reported a significant pre to one-year follow-up change in weight (*n* = 19) from a mean of 204.63 to 187.68 pounds, which is a large effect (*d* = 0.99).

**Methodological Quality**

The methodological quality of the papers as rated on the Downs and Black (1998) scale ranged from 11 to 17 (*M* = 14.58, *SD* = 3.87), which is comparable to other psychological interventions (Sanders et al., 2014). This systematic review included all forms of interventions, both pre-post evaluations, as well as randomised controlled trials. All studies clearly reported hypotheses and the main outcomes to be measured. However, participant and intervention details were not all clearly described. Sample sizes were generally small, and all samples relied on convenience volunteer samples mostly from community or university/college institutions.

**Discussion**

Despite a number of evaluations examining the impact of compassion-based interventions for body weight shame, to our knowledge, this is the first systematic review. Our findings indicate that a compassion-based approach to helping with body weight shame is highly promising, and there has been a growing number of studies over the last five years. Yet our review identified a number of areas that could be improved for future evaluations.

 In terms of outcomes for body weight shame, all studies that used a measure of shame found significant decreases. However, 28% of studies did not use a measure of shame. This could be a result of shame measures tending to be quite global in its assessment (e.g., Others as Shamer Scale), relatively long (Allan et al., 1994), and not being content specific to body or weight. Recently, two new measures have been developed to assess for body weight shame and criticism, the Body Image Shame (Duarte et al., 2015) and Weight Focused Criticism/Self-Reassuring Scale (Duarte et al., 2018). Since 2015, 87% of studies using an explicit body weight shame scale used one of these scales. According to social mentality theory, reducing shame and increasing compassion is the key motivational switch compassion-based interventions aim to target. As a result, it is imperative that future research use a measure of body weight shame to examine whether this proposed mechanism is being impacted by the compassion-based intervention.

Importantly, 20 out of the 25 studies used a measure of compassion, and all reported significant positive outcomes. Of those that did not include a measure of compassion, those studies tended to focus on weight or affect outcomes (e.g., Mantzios & Wilson (2015). The most commonly used measure was the Self-Compassion Scale (Neff, 2003). Increasing one’s own levels of self-compassion is crucially important, as many researchers have found that those high in self-criticism and shame have low self-compassion scores (e.g., Ferrari et al, 2019; Kirby et al., 2019). Moreover, low levels of self-compassion are associated with a range of poorer mental health outcomes such as anxious and depressive symptoms (MacBeth & Gumley, 2012), as well as being associated with higher levels of rumination (Raes, 2010) and lower social connectedness (Seppala et al., 2014).

Importantly, compassion can be directed towards the self, towards others, and one can receive compassion from others (Gilbert, 2014). Being open to receiving compassion from others is a challenge for individuals who struggle with body weight shame (Carter et al., 2020). This is concerning, as fears of receiving compassion from others is associated with poorer mental health outcomes (Kirby et al., 2019). This is a particular concern for those with body weight shame, due to the common occurrence of social support systems (i.e., friends, family and partners) being sources of threat and active shaming (Vartanian et al., 2014). As a result, there can be a fear or reluctance in receiving compassion from close others. This is further compounded by recent research finding that compassion from others has been found to be a stronger buffer to the depressogenic effects of self-criticism compared to self-compassion (Hermanto et al., 2016). In this systematic review few studies examined participants capacity to be open to receiving compassion from others. Although compassion directed to the self is important (MacBeth & Gumley, 2012), relying solely on the ‘self’ to alleviate suffering may only have limited effectiveness. It could be that current compassion-based interventions do improve the capacity to receive compassion from others, however, it just it is not being measured.

Mental health outcomes were only included in a third of the studies as an outcome in our review. This is interesting, given the strong associations between body weight shame and mental health, particularly depression (Major et al., 2012). In terms of eating attitudes and behaviours, the most common measure was mindful eating, with all interventions using this assessment showing positive improvements. Compassion alone may not shift eating attitudes and behaviours, thus the importance of eating and food cognitions in compassion-based interventions remains unclear.. From the six studies that included physical exercise outcomes, all reported improvements in amount of exercise or self-reported exercise. The extent to which physical exercise is a necessary ingredient in compassion-based interventions will depend on the target population.

In relation to outcomes on BMI or weight, compassion-based interventions had mixed results. Some papers reported that compassion interventions assisted with weight loss however, others did not. Of those that did (e.g., Palmeira et al., 2017; Fornes et al., 2020), non-significant results were found between post-intervention and follow-up assessment. It was interesting how weight loss was described in interventions, with some emphasising ‘*weight loss*’ and others ‘*body change’*. The Braun et al. (2012) study adopted a deliberate approach of only assessing weight after a significant period of time, that being at one-year follow-up. The rationale being that the aim of the program was to bring about sustainable compassionate life changes, instead of emphasizing short-term weight loss.

**Implications for Compassion-Based Interventions and Body Weight Shame**

Body weight shame comes at all sizes, it is not restricted to those with an eating disorder, and those that have ‘healthy’ BMI ae not immune. Indeed, recent research indicates that weight perception is potentially more important than objective weight or BMI as a predictor of mental health (Carter et al., 2021; Major et al., 2012). What does this mean for compassion-based interventions? Firstly, compassion can help reduce body weight shame and the high levels of self-criticism that come with it. However, the compassionate actions taken will differ, depending on the target population of the intervention. For example, compassionate action could involve changes in health behaviour and lifestyle (e.g., nutrition). On the other hand, compassionate action for body weight shame may involve cultivating a more caring relationship with the body, for example not avoiding looking at oneself in the mirror or engaging in activities desired but avoided such as body massage or going swimming. Given these different compassionate actions, this could partially explain the high level of heterogeneity in the intervention components of the included studies in this systematic review.

The consideration as to whether to include or exclude objective weight measures, such as BMI and weight, is an issue of contention in this field. There are some scholars who argue for health at any body size (Hunger et al., 2020), then there are those who suggest that reducing body fat as critically important for health, particularly in relation to other health conditions such as diabetes (Guh et al., 2009). The implications for compassion-based interventions here are important, with the clear implication being that there is not one compassionate action. Indeed, depending on the causes of suffering for that target population, there will be different contextual compassionate actions required. The key for studies using compassion-based interventions to reduce body weight shame is to outline, using program logic for example, how the intervention components included aim to address and reduce the suffering of the target group.

Importantly, there can be a tendency for some to view compassion as synonymous to kindness, love and acceptance (Gilbert, Basran, MacArthur, & Kirby, 2019). Kindness and compassion although similar, are different motivations, with the former focusing on a motivation for happiness and the latter on the reduction of suffering (Ricard, 2014). Research has found that individuals can discern a clear difference between what is kindness and compassion (Gilbert et al., 2019). In the case of body weight and appearance, a compassionate relationship with your body might mean loving and accepting your body as it is, and it can also mean engaging in actions that produce changes to that body. They are not necessarily mutually exclusive. Balancing both openness and acceptance, with actions that can lead to growth and positive change are important considerations for compassion-based interventions when addressing body weight shame.

**Limitations**

Overall, our results show promising indications for the effectiveness of compassion-based interventions across a range of outcomes; however, a note of caution is necessary given that many studies have small sample sizes, and often the control condition used in experimental studies was a waitlist as opposed to an active control comparison. In respects to this systematic review itself, there are some limitations. For example, our eligibility criteria for possible interventions were broad, thus there was considerable heterogeneity in the included interventions. Given this heterogeneity we were unable to conduct meta-analytic techniques on the data, as the interventions varied in terms of target populations, length, focus and approach. In addition, our published protocol outlined we would include qualitative studies in this review. However, we did not include these, given we identified 25 studies that included quantitative outcomes. Future research could include qualitative studies by conducting a meta-ethnography, which are particularly well suited in reviewing qualitative studies.

**Conclusions**

The use of compassion-based interventions show promise in helping reduce body weight shame. There is no panacea when it comes to interventions to help individuals who are experiencing body weight shame. Whilst there was diversity of target populations, dosage and interventions types used, overall the evidence suggests that compassion-based interventions have a positive impact on body weight shame, as well as compassion, mental health, eating attitudes and behaviour, and physical exercise. However, compassion-based interventions presently do not seem to impact actual weight loss or BMI. Overall, compassion-based approaches offers great promise in terms of how we relate to ourselves and our bodies, our relationship with food and exercise, and how we can encourage ourselves to try and live a fulfilling lifestyle, which may in turn lead to more sustainable long-term changes.

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