University of Southampton

Faculty of Environmental and Life Sciences

School of Psychology

An Investigation into the Comparative Effects of Brief Self-Compassion and Mindfulness Meditation Training on Body Image Concerns in Older Adults

Volume 1 of 1

by

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Thesis for the degree of Doctor of Clinical Psychology

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Abstract

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AN INVESTIGATION INTO THE COMPARATIVE EFFECTS OF BRIEF SELF-COMPASSION AND MINDFULNESS MEDITATION TRAINING ON BODY IMAGE CONCERNS IN OLDER ADULTS

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The first chapter of this thesis is a literature review exploring the impact of brief self-compassion interventions on self-compassion and the transdiagnostic processes of self-criticism, shame, and guilt. A multi-database search was conducted and a total of 24 experimental studies met the inclusion criteria. The findings of the literature search were compiled, summarised, and synthesised to create a narrative review. The overall pattern of results provides some indication that brief self-compassion interventions may offer a convenient and feasible therapeutic alternative and help to improve self-compassion, self-criticism, shame, and guilt in both clinical and non-clinical groups. However, the available evidence was limited and of low quality, and the discussion suggests that there is a need for more robustly designed empirical research on this topic.

The second chapter reports a randomised controlled trial investigating the effects of brief, self-guided self-compassion (SCM) or mindfulness meditation (MM) training on self-compassion, mindfulness, actual-ideal body image discrepancies, and body image satisfaction in older adults, and using a non-meditation control group as a comparison. It also examined the effect of the training on state body image satisfaction following a negative body image induction task. It was hypothesised that SCM would generate the most pronounced improvements in the body image variables and offer the greatest protection against the induction. 103 women and men aged ≥ 65 years were randomised into either the SCM, MM, or control groups, and practised a 10-minute audio-guided exercise regularly for 2 weeks. Results showed that the induction task did not achieve the desired reduction in state body image satisfaction at baseline, thus it was not possible to establish the effects of the experimental manipulations in mitigating the impact of the induction task following training. Furthermore, the manipulations did not have the predicted differential effects on the dependent variables. Clinical and theoretical implications and key avenues for future research are discussed.

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Research Thesis: Declaration of Authorship

Print name: Ronald Zammit

Title of thesis: An Investigation into the Comparative Effects of Brief Self-Compassion and Mindfulness Meditation Training on Body Image Concerns in Older Adults.

I declare that this thesis and the work presented in it are my own and has been generated by me as the result of my own original research.

I confirm that:

This work was done wholly or mainly while in candidature for a research degree at this University;

Where any part of this thesis has previously been submitted for a degree or any other qualification at this University or any other institution, this has been clearly stated;

Where I have consulted the published work of others, this is always clearly attributed;

Where I have quoted from the work of others, the source is always given. With the exception of such quotations, this thesis is entirely my own work;

I have acknowledged all main sources of help;

Where the thesis is based on work done by myself jointly with others, I have made clear exactly what was done by others and what I have contributed myself;

None of this work has been published before submission.

Signature: Date: 24th May 2019

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Chapter 1 The impact of brief self-compassion interventions on self-compassion, self-criticism, and the self-conscious emotions of shame and guilt: A review of the literature

1.1 Introduction

Self-criticism, shame and guilt are transdiagnostic processes that feature across various psychopathologies (Ehret, Joormann, & Berking, 2015; Gilbert, 2009; Gilbert & Irons, 2005). The clinical benefits associated with targeting transdiagnostic processes in therapy, including increased treatment efficiency and efficacy (Barlow, Allen, & Choate, 2004; McEvoy, Nathan, Norton, 2009), has stimulated interest in developing transdiagnostic interventions.

There has recently been increasing interest in developing interventions aimed at cultivating self-compassion as a means of alleviating distress. Self-compassion entails being kind toward oneself, when in pain, and holding painful experiences in mindful awareness (Neff, 2003a). Self-compassion may, therefore, serve as a buffer against self-criticism, shame, and guilt. Compassion-based programs, such as Mindful Self-Compassion (MSC) (Neff & Germer, 2013) and Compassionate Mind Training (CMT) (Gilbert, 2014) have shown promise in increasing self-compassion and reducing emotional distress (Gilbert & Procter, 2006; Neff & Germer, 2013). However, these interventions require a significant time commitment and may, therefore, reduce convenience and flexibility for participants (Albertson, Neff, & Dill-Shackleford, 2015). This led researchers to design and evaluate brief self-compassion interventions (BSCIs).

The current review aims to systematically consider available evidence on the effectiveness of BSCIs in improving self-compassion, self-criticism, shame, and guilt. This review could guide professionals seeking information about how to best intervene with their clients within short-term therapeutic contexts.

1.1.1 Self-criticism

Self-criticism refers to an aversive self-judgment where one displays a punitive response to one's mistakes, faults or attributes that may cause social disapproval or rejection (Gilbert, 2000,

2007). Gilbert, Clarke, Hempel, Miles, and Irons (2004) postulated that there are two forms of self-criticism – the 'inadequate self' and the 'hated self'. The former focuses on improving or correcting the self and is associated with feelings of disappointment, inferiority, and inadequacy. The latter focuses on the desire to hurt and attack the self and is associated with feelings of disgust and aversion. Therefore, self-criticism can serve a self-corrective or self-persecutory function (Gilbert et al., 2004).

Self-criticism has gained the attention of various schools of thought. Developmental theorists (e.g., Baldwin, 1972, 1997; Bowlby, 1969, 1982) view self-criticism as the internalisation of hostile and critical attachment experiences, whereby one learns to relate to oneself as others have related to self. Cognitive approaches conceptualise self-criticism as an information-processing bias arising from maladaptive cognitive schemas[1] (Young, Klosko, & Weishaar 2003).

A prominent contribution to the understanding of self-criticism has been made by social mentality theory (Gilbert, 1989, 1995, 2005a, 2005b). Grounded in evolutionary psychology, social mentality theory posits that self-criticism is a form of self-to-self relating. Gilbert (2010) identified a set of 'social mentalities' that enable humans to seek out and form certain types of relationships. These social mentalities are activated not only in relations with others but also in relations within the self. Specifically, self-criticism is believed to arise from the activation of the social mentalities of dominance and subordination, where the 'self-critical' self seeks to dominate the submissive 'criticised' self, leading to feelings of defeat when one is unable to defend themselves against their self-attacks. Interestingly, Longe et al. (2010) used functional magnetic resonance imaging to investigate the neural correlates of self-criticism and found that when engaged in self-critical thinking, the degree of activation of the dorsal lateral prefrontal cortex[2] was related to self-criticism, thus rendering robust scientific support for Gilbert's theory.

Not surprisingly, self-criticism is closely associated with psychopathology. For instance, Zuroff, Koestner, and Powers (1994) found that self-criticism in childhood is a predictor of later adjustment. Self-criticism is also associated with lifetime risk of depression and recurrent depressive episodes (Mongrain & Leather, 2006; Murphy et al., 2002). Furthermore, self-criticism

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[1] *Maladaptive cognitive schemas* are defined as broad pervasive themes or patterns related to oneself and one's relationship with others, developed during childhood and elaborated throughout one's lifetime, and dysfunctional to a significant degree' (Young, Klosko, & Weishaar 2003).

[2] An area of the brain which had originally evolved to cope with external threat, such as threat-processing and submissive behaviours and emotion.

has been found to predict eating disorders (Fenning et al., 2008), and is a major feature of anxiety and personality-focused research (Dunkley, Zuroff, & Blankstein, 2006; Hewitt & Flett, 1991; Shahar, Blatt, Zuroff, Krupnick, & Sotsky, 2004).

1.1.2 Shame and guilt

Shame and guilt are classed as self-conscious emotions. The distinctive feature of self-conscious emotions is that they typically involve self-reflection and self-evaluation (Tracy & Robins, 2004b). Self-conscious emotions are adaptive and functional in that they regulate interpersonal interactions and sustain relationships (Tangney & Tracy, 2012). However, these emotions – in particular, those with a negative valence, such as shame and guilt – may, at times, be experienced so intensely and frequently that they become maladaptive (Kim, Thibodeau & Jorgensen, 2011; Oatley & Jenkins 1992).

Although shame and guilt are often used interchangeably, these two emotions differ along cognitive, affective, and behavioural dimensions (Tangney & Dearing, 2002; Tracy & Robins, 2006). One of the most empirically supported distinctions between shame and guilt was proposed by Lewis (1971). Lewis argued that shame involves a focus on the self's flaws, whereas guilt involves a focus on the negative action for which one is responsible. Lewis' conceptualisation was refined in Tracy and Robins' (2004) appraisal-based model of self-conscious emotions. According to this model, guilt arises when one makes internal, unstable, specific attributions about one's actions, which lead to negative feelings about specific behaviours that one has committed. Shame, on the other hand, arises when one makes internal, stable, global attributions about one's self, which lead to negative feelings about the global self.

The different cognitive features of shame and guilt lead to different emotional states, motivations, and self-regulatory behaviours. Shame is considered to involve acute emotional pain due to the devaluation of the entire self. Guilt, in contrast, involves a less painful emotion because the focus is placed upon the act rather than the self. Thus, shame is associated with feelings of worthlessness, while guilt is associated with feelings of tension and remorse (Lindsay-Hartz, 1984; Tangney & Dearing, 2002). Behaviourally, shame is associated with an urge to escape and hide, while guilt is associated with reparative behaviour (Tangney, Miller, Flicker, & Barlow, 1996a).

Research has shown positive associations between shame-proneness and psychopathology, including mood disorders (Andrews, Qian, & Valentine, 2002), anxiety disorders (Fergus,

Valentiner, McGrath, & Jencius, 2010), eating disorders (Hayaki, Friedman, & Brownell, 2002), post-traumatic stress disorder (Leskela, Dieperink, & Thuras, 2002), substance abuse (Dearing, Stuewig, Tangney, 2005), borderline personality disorder (Brown, Linehan, Comtois, Murray, & Chapman, 2009), anger and aggression (Tangney, Wagner, Hill-Barlow, Marschall, & Gramzow, 1996), and suicidal and self-injurious behaviour (Brown et al., 2009).

Similarly, despite its prosocial and conciliatory characteristics, guilt can also be maladaptive (Tangney, Stuewig, & Mashek, 2007). For instance, in their recent meta-analysis, Cândea and Szentágotai-Tata (2018) found that two types of guilt - generalised guilt[3] and contextual-maladaptive guilt[4] - can be maladaptive and have been linked to anxiety disorders. Tangney (2015) also argued that maladaptive guilt experiences are likely to arise when feelings of guilt become "fused with shame" and when "people hold an exaggerated or distorted sense of responsibility for events beyond their control" (p. 477). Furthermore, Nelissen and Zeelenberg (as cited in Tangney, 2015, p. 477) contended that "guilt can motivate self-denial or self-punishment when opportunities for reparation are blocked". Several lines of research support these ideas. For instance, in their extensive review, Kim, Thibodeau, and Jorgensen (2011) found that studies using scenario-based measures of guilt-proneness (i.e., 'shame-free' guilt), such as the Test of Self-Conscious Affect-3 (TOSCA-3) showed no relation to depression, whereas guilt measured by global, state-based, affective checklists showed a strong link to depression, similar to shame, suggesting the presence of shame-fused guilt. Studies using measures assessing 'legitimate' guilt (i.e., guilt over events for which individuals have responsibility) also showed little relationship to depression, whereas measures assessing guilt involving unrealistic responsibility for negative events were positively associated with depression (Kim et al., 2011).

In summary, while shame and guilt may play an adaptive and functional role in helping people to be acceptable and behave morally in society, their dysregulation can be maladaptive and pathogenic. The next section discusses a concept that has garnered increased attention in recent years and has developed a reputation for being a powerful antidote to painful experiences such as self-criticism, shame, and guilt.

[3] A free-floating guilt separated from specific contexts.
[4] An inappropriate or exaggerated feeling of responsibility.

1.1.3 Self-compassion

Self-compassion is derived from Buddhist contemplative psychology and is a relatively new concept in Western psychology (Neff, 2003a). Self-compassion has been conceptualised from two dominant perspectives. According to Neff (2003b, 2016), self-compassion comprises three components – self-kindness (versus self-judgment), common humanity (versus isolation), and mindfulness (versus over-identification). Self-kindness involves extending forgiveness, empathy, sensitivity, warmth, and patience to oneself rather than flagellating oneself with self-criticism (Gilbert & Irons, 2005; Neff, 2003a). Common humanity entails forgiving oneself for being flawed and imperfect, rather than believing that one's inadequacies or failures are shameful, and feeling isolated in one's suffering (Neff, 2003a). Mindfulness involves awareness of, attention to, and acceptance of the present moment (Shapiro, Brown, & Biegel, 2007), rather than ruminating on one's limitations or avoiding painful thoughts and emotions, which would intensify negative feelings in the long-term (Germer, 2009; Neff & Vonk, 2008). These components combine and mutually interact to create a self-compassionate mindset (Germer & Neff, 2013).

The second perspective is rooted in Gilbert's evolutionary model of social mentality theory (Gilbert, 1989, 2000, 2005a, 2005b) previously discussed. From this perspective, compassion is defined as "a sensitivity to suffering in self and others with a commitment to try to alleviate and prevent it" (Gilbert, 2017, p. 11). Gilbert proposed that self-compassion is a form of self-to-self relating which arises when the social mentalities of care-seeking and caregiving are activated. These two social mentalities map onto Bowlby's (1969/1982) attachment and caregiving systems. According to Gilbert, in the same way that the care-seeking and caregiving mentalities are activated when relating to others (e.g., crying child and comforting mother), they can also be activated when relating within the self, enabling compassionate thought and emotion to be directed toward the self.

While Gilbert's approach seems to be embedded in a more theoretically comprehensive framework, it seems clear that both perspectives of self-compassion cannot be reduced to simple definitions. Rather, both approaches constitute a view of self-compassion as a sophisticated human disposition underpinned by complex cognitive, emotional, physiological, and relational processes.

1.1.3.1 Associations between self-compassion, self-criticism, shame and guilt

Self-compassion has been found to be associated with a lower tendency for psychological disturbance and greater psychological flourishing (MacBeth & Gumley, 2012; Zessin, Dickhäuser, & Garbade, 2015). These positive outcomes also relate to self-criticism, shame, and guilt. Self-compassion has been shown to be negatively related to self-criticism (Gilbert & Procter, 2006; Neff, Rude, & Kirkpatrick, 2007). Research has also found that self-compassion mediates the links between shame and depression (Joeng & Turner, 2015; Zhang et al., 2017).

Self-compassion was found to be negatively related to shame-proneness in young women athletes (Mosewich, Kowalski, Sabiston, Sedgwick, & Tracy, 2011), clergy participants (Barnard & Curry, 2011), and undergraduate students (Woods & Proeve, 2014). Castilho, Carvalho, Marques, and Pinto-Gouveia (2017) also found an indirect effect of shame-based traumatic memories on depression through self-compassion in adolescents, while another study found that self-compassion fully mediated the links between external shame[5] and drive for thinness in female eating-disordered patients (Ferreira, Pinto-Gouveia, & Duarte, 2013).

There is also evidence of a negative association between self-compassion and maladaptive guilt. A recent study examining the effects of self-compassion on trauma-related guilt as a function of trauma-processing style among female PTSD sufferers (Valdez & Lilly, 2016) found that greater self-compassion was associated with diminished increases in guilt. In another recent study of combat veterans with PTSD, trauma-related guilt was negatively associated with self-compassion, while self-compassion mediated the link between guilt and PTSD (Hall, McKinney, Sirois, & Hirsch, 2018). Castañeda (2015) also found an association between eating guilt and lower self-compassion in a student sample.

Aside from its association with improved wellbeing and lower levels of self-criticism, shame, and guilt, self-compassion seems to constitute a mechanism of action that buffers the adverse impact of painful emotions on psychological health. The next section draws on Neff's and Gilbert's theoretical models of self-compassion to explain how self-compassion can help to attenuate self-criticism, shame and guilt and generate emotional resilience.

[5] Originates outside the self, involves a distressing awareness that others view the self negatively, and is often associated with concealment and submissiveness (Lewis, 1992).

1.1.3.2 Mechanisms of self-compassion

The three components of self-kindness, common humanity, and mindfulness in Neff's (2003b) model of self-compassion seem well suited to countering self-criticism, shame, and guilt. This is because firstly, self-kindness can mitigate self-criticism and negative self-evaluation. Secondly, common humanity can lessen shame and guilt, as well as behavioural withdrawal, and social isolation, through an acceptance of one's shortcomings and imperfections as a universal human experience. Thirdly, mindful awareness of self-criticism, shame, and guilt-related cognitions and feelings prevents us from becoming caught up in aversive reactions and ruminating on negative feelings, thus allowing for greater clarity, perspective, and equanimity (Baer, 2003).

Gilbert's evolutionary model of compassion offers valuable insights into how self-compassion may operate in the development of emotional resilience. Gilbert (2005b) proposed that there are three interacting types of affect regulation systems, i.e., the threat, drive, and safeness/soothing systems (Figure 1), each of which is underpinned by complex neurobiological processes. Put simply, the threat system alerts us to threats, motivates us to act, is linked to threat-based emotions like fear, anger, and disgust, and operates on stress hormones such as adrenaline and cortisol. The drive system is incentive- and resource-focused, arousing and activating, and involves neurohormones such as dopamine (Panksepp, 1998). The safeness/soothing system is linked to social signals of affiliation and care and involves neurohormones such as oxytocin and opiates (Depue & Morrone-Strupinsky, 2005; Panksepp, 1998). While internal threats such as self-criticism and shame activate the threat system, self-compassion deactivates it while activating the safeness/soothing system (Gilbert & Proctor, 2006). In support of this proposition, Rockcliff, Gilbert, McEwan, Lightman, and Glover (2008) found that giving participants a brief self-compassion exercise lowered their cortisol levels and increased heart rate variability, which is associated with a greater ability to self-soothe when stressed.

However, adverse early experiences can lead to an over-stimulated threat-focused system and an underdeveloped safeness/soothing system, which jeopardises one's ability to self-soothe in times of distress (Gilbert & Procter, 2006). Those who have experienced painful early experiences, such as parental hostility, may also find that behaviours and emotions associated with caring or safeness can trigger a sense of threat not safeness, particularly if the source of threat was also the source of care (Gilbert, McEwan, Matos, & Rivis, 2011). The cultivation of self-compassion, with its focus on the activation and development of the affiliative processing systems may, therefore, hold the key to better emotion regulation and adjustment.

Figure 1. Gilbert's affect regulation model

1.1.3.3 Interventions for cultivating self-compassion

There are a number of empirically supported interventions which are specifically designed to cultivate compassion, such as the compassion cultivation training (Jazaieri et al., 2013), cognitively based compassion training (Pace et al., 2009), and compassion and loving-kindness meditations (e.g., Hoffmann, Grossman, & Hinton, 2011). Training programs that focus on cultivating self-compassion include Mindful Self-Compassion (MSC) (Germer & Neff, 2013; Neff & Germer, 2013) and Compassionate Mind Training (CMT) (Gilbert & Proctor, 2006). The latter two programs have different origins – MSC developed out of mindfulness, and CMT arose primarily out of evolutionary psychology – but there is some overlap among the exercises and meditation practices of the two programs.

Other therapeutic approaches which do not target self-compassion explicitly but may still raise self-compassion include Mindfulness-Based Stress Reduction (MBSR; Kabat-Zinn, 1982), and the 'third-wave therapies' such as Mindfulness-Based Cognitive Therapy (MBCT) (Segal, Williams, & Teasdale, 2013), Dialectical Behaviour Therapy (DBT; Linehan et al., 1999), and Acceptance and Commitment Therapy (ACT; Hayes et al., 2004). Given the inclusion of mindfulness in all of these therapies, it is unsurprising that these therapies may still enhance self-compassion, given that self-compassion and mindfulness are overlapping constructs (Barnard & Curry, 2011).

1.1.4 Previous reviews

Three reviews have been undertaken to date that examined the effectiveness of compassion-based interventions. Leaviss and Uttley (2015) conducted a systematic review of the psychotherapeutic effectiveness of compassion-based interventions. The authors found that CFT and CMT[6] may be more effective than no treatment or as effective as treatment-as-usual in treating mood disorders. However, the review was based on a lack of large-scale, high-quality trials, and the evidence was insufficient to show that these interventions are more effective when compared to current standard treatments such as CBT.

The second review evaluated the effects of all compassion-based interventions on a range of outcome measures, including compassion, self-compassion, mindfulness, depression, anxiety, psychological distress, and wellbeing (Kirby, Tellegen, & Steindl, 2017). Meta-analytic findings showed significant pre-post intervention moderate effect sizes for improving all outcome variables. These results remained when including active control comparisons. However, the available evidence was characterised by predominantly small sample sizes and large variability of effect size, thus suggesting the possibility of a publication bias (Rosenthal, 1979).

A recent review further expanded on the two prior reviews by incorporating any intervention which aimed at improving self-compassion directly or indirectly, including third-wave therapies such as MBCT and ACT (Wilson, Mackintosh, Power, & Chan, 2018). This review indicated that self-compassion related interventions had moderate effects on self-compassion, depression and anxiety outcomes across 22 RCTs. However, when limiting the analysis to comparisons with active control conditions, no significant outcome differences were found.

1.1.5 Aims of the current review

To the author's knowledge, despite being included in prior reviews of compassion-based interventions, BSCIs have not been reviewed together in the context of self-criticism, shame, and guilt. Given that current training programs designed to enhance self-compassion require significant resource and time commitment, delivering interventions in a briefer format may offer more scalability and cost-effectiveness, as well as increase flexibility and convenience for participants. For this reason, this review aims to synthesise and critically appraise the research

[6] *CFT* describes the underpinning theory and process of applying a compassion model to therapy (Gilbert, 2009a) whereas *CMT* describes specific activities designed to develop compassionate attributes and skills (Gilbert, 2009b).

evidence related to the impact of BSCIs (≤ 4 weeks) on self-compassion, self-criticism, shame, and guilt. The cut-off of 4 weeks was chosen because current self-compassion training programs, such as MSC, take place over an 8-week period and, therefore, 4 weeks was considered to be a reasonable timeframe for the purpose of the current review.

Specifically, the evidence was reviewed in relation to the following main research question: What is the evidence for the overall impact of BSCIs on self-compassion, self-criticism, shame, and guilt? The review also aimed to investigate the following sub-questions: (i) Are there any differences in the impact of studies of different intervention types on the outcome variables? (ii) Are there any differences in the impact of studies of clinician-supported and unsupported interventions on the outcome variables? (iii) Are there any differences in the impact of studies of differing intervention duration on the outcome variables? (iv) Are there any differences in the impact of studies employing different modes of delivery on the outcome variables? (v) Are any benefits gained from the BSCIs maintained at follow-up? (vi) What are the clinical and research implications of the available evidence?

1.2 Method

1.2.1 Literature search strategy

A systematic literature search was conducted using PsycINFO, PubMeD, PsycARTICLES, CINAHL Plus with Full Text, Web of Science Core Collection, Open Dissertations, and Cochrane Database of Systematic Reviews (via EBSCO). To avoid missing relevant studies, no date or language restrictions were applied, and terms used for searching the electronic databases did not specify target outcomes for the intervention, and instead focused on the intervention itself. The following grouped terms were used: (Self N1 (compassion* OR kindness)) AND (intervention* OR practice* OR program* OR therap* OR technique* OR course* OR train* OR approach* OR strateg* OR treatment*). In addition, bibliographies, reference lists of included articles, and grey literature sources were hand-searched for any additional relevant articles.

1.2.2 Eligibility criteria

The decision to include studies was based on predetermined criteria. See Table 1 for detailed inclusion and exclusion criteria.

Table 1. Inclusion and exclusion criteria

	Inclusion criteria	**Exclusion criteria**
Population	Male and female participants of any age, race, gender, and country of origin or residence, who have either subclinical symptoms or a clinical diagnosis of any psychological disorder or self-reported symptoms of any psychological disorder. As the reviewed intervention is based on a relatively new psychotherapeutic approach, studies of non-clinical samples were also included.	None.
Interventions	Significant focus on the direct manipulation of self-compassion for the purpose of improving self-compassion and reducing self-criticism and/or shame and/or guilt; Intervention is derived from any theoretical model of self-compassion; Interventions of any intensity and frequency are considered; however, the cut-off for the duration of the entire intervention period has to be ≤ 4 weeks; Participants can be receiving the BSCI in conjunction with other interventions (e.g. psychosocial/physical support, yoga, and/or other psychotherapeutic interventions like CBT and mindfulness-based interventions).	Unclear description of the intervention; Studies of compassion-focused interventions which are exclusively focused on generating compassion towards others and/ or receiving compassion from others; Studies using predominantly mindfulness-based interventions to improve self-compassion (i.e. indirect focus on improving self-compassion);
Comparisons	All comparators including any other psychotherapy (e.g. CBT, mindfulness-based interventions), psycho-	None.

	pharmacological interventions, no treatment, and usual care.	
Outcomes of interest	Minimum of a self-compassion measure in addition to one or more of the following outcomes: shame (external/internal), guilt, and self-criticism; Outcomes can be either subjectively or objectively measured, and/ or used as a primary or secondary outcome measure.	Any study which does not use the combination of outcome measures stipulated in the inclusion criteria.
Setting	Not restricted by geographical location; Interventions can be delivered either individually or in a group, via single or multiple sessions, provided by a clinician or researcher in a hospital (inpatient and/or outpatient), community, laboratory, online, or university setting, or in the form of self-help interventions (e.g. via self-help books, CDs, online interventions, smartphone application) but without the support of a clinician or researcher.	None.
Study designs and publication type	Randomised and non-randomised controlled trials; Quasi-experimental design; Single-group pre-test post-test design; Individual case studies/case series; Interrupted time series design; Mixed-methods design; Peer-reviewed journal articles;	Any type of study without intervention such as qualitative studies, correlational studies, editorials, and opinion pieces, reports published as abstracts of conference proceedings only where insufficient details were reported to allow inclusion, book chapters, extracts, and reviews, theoretical articles, systematic

	Theses and dissertations (undergraduate, Masters and doctorate level); Only articles written in or translated clearly in English; Any unpublished trials to minimise publication bias.	literature reviews and meta-analyses.

1.2.3 Screening procedure

Search results from each database were imported into Endnote reference management software tool and duplicate articles were removed. The titles and abstracts of the remaining articles were screened by the main researcher to identify articles for full-text retrieval. To enhance rigour, 5% (*N* = 104) of all titles and abstracts discounted at this stage and chosen randomly, were independently reviewed by another trainee clinical psychologist and an agreement was reached in all cases. The full texts of the remaining papers were then screened by the main researcher and ineligible papers were excluded.

1.2.4 Data extraction

Data was extracted and tabulated to facilitate comparison and data synthesis, outlining study design, intervention, support, mode of delivery, comparison groups, participants' characteristics, duration, follow-up, outcome measures, and relevant key findings. See Table 2 for the data extracted from the included studies.

1.2.5 Quality assessment strategy

Quality assessment of the included studies was conducted using the Effective Public Health Practice Project (EPHPP, 2009) quality assessment tool. This is a generic tool used to evaluate a variety of experimental study designs such as randomised controlled trials (RCTs) and pre-test post-test studies. This tool has been considered suitable to be used in systematic reviews of effectiveness and has good psychometric properties (Armijo-Olivo, Stiles, Hagen, Biondo, Cummings, 2012). The tool assesses six domains: (i) selection bias; (ii) study design; (iii) confounders; (iv) blinding; (v) data collection method; and (vi) withdrawals/ dropouts. A global rating of the study was made based on each component rating. Studies with no weak ratings and

a minimum of four strong ratings were classified as strong; those with four strong ratings and one weak rating as moderate; and those with two or more weak ratings as weak (Thomas, Ciliska, Dobbins, & Micucci, 2004). All studies, regardless of their quality rating, were included in the review.

To establish whether the quality appraisal of the articles was consistent, each article was independently reviewed by the main researcher and another trainee clinical psychologist, using the EPHPP tool. Reviewers went through each criterion and compared the scores of each study, noting down any differences. Any discrepancies in quality ratings were resolved by discussion as per EPHPP guidelines.

1.2.6 Data synthesis

The method of data synthesis was determined by the nature of the included studies. The low-to-moderate quality data and heterogeneity across studies regarding study design, intervention type, and outcome measures rendered the use of a meta-analysis inappropriate. A narrative review was subsequently undertaken to review the findings.

To address the key review questions in a way that increases the usability of the review, the research evidence was grouped according to intervention type into six sections: guided meditation studies; self-compassionate writing studies; compassion-focused imagery (CFI)[7] studies; group-based multicomponent studies; individual-based multicomponent studies; and immersive virtual reality-based studies. Furthermore, within each section, results are reported according to methodological rigour (where applicable), beginning with controlled studies followed by non-controlled studies. This is because different study designs have fundamentally different methodological strengths and weaknesses and should be considered separately when conducting a narrative synthesis of data in systematic reviews (Ryan, 2013).

[7] *Compassion-focused imagery (CFI)* involves imagining *another mind* having compassionate feelings, motivations, and thoughts directed to oneself (Rockcliff et al., 2011).

1.3 Results of the systematic search

1.3.1 Selection of studies

The search yielded 3626 records, with two extra records sourced separately from Google Scholar and reviewing the reference lists of the included studies. Following removal of duplicate records, 2085 records remained. After screening the titles and abstracts, 1944 records were excluded. The remaining 141 articles were reviewed in full text. Following full-text verification, 24 articles were deemed eligible for inclusion in the review. Methodological quality was taken into consideration in the review but, given the likely dearth of literature in this field, quality was not used as a basis for exclusion. For a summary of the selection process, see the PRISMA[8] flow diagram in Figure 2 (Moher et al., 2009).

1.3.2 Study characteristics

The characteristics of the included studies are summarised in Table 2. The studies were all conducted over a fourteen-year period (2004 – 2018), representing 1653 participants. Fourteen were RCTs, nine were pre-test post-test studies, and one study was a case series. The majority were conducted in the UK or the US (17 of the 24), with the remainder conducted in Canada, Australia, Germany, Portugal, Romania, Norway and Denmark. Samples ranged from 9 to 262 participants, with ages spanning 18 to 65 years.

Seven studies comprised entirely female samples, and eleven predominantly female. Only one study comprised an entirely male sample, and five comprised predominantly male samples. Of the studies which reported ethnicity, most had mainly White participants, except for one study which comprised a predominantly Asian sample. The majority (14 of the 24) used non-clinical samples (undergraduates, community, or professional groups). Of those studies which used clinical populations, two had participants with major depressive disorder, one had participants with psychosis, two had participants with PTSD or were experiencing significant trauma-related distress, one had participants with substance-use disorder, and one had participants with a personality disorder. Of the remaining three studies, one study screened participants for social anxiety disorder, and two screened participants for eating-disordered symptoms.

[8] Preferred Reporting Items for Systematic Reviews and Meta-Analyses.

The BSCIs were varied in terms of duration, mode of delivery, and content. Interventions ranged in duration from single-trial inductions to 4-week interventions. A third of the interventions (8 out of 24) were delivered online, with the remaining interventions being delivered in groups, lab-based settings (clinic or university), home-based settings, virtual reality, via self-help written materials, or a combination of lab-based and online/self-help methods. One of the lab-based trials was delivered via immersive virtual reality. Half of the studies deployed some form of clinician support, either during the initial phase in preparation for independent practice or throughout the course of the intervention. Interventions in half of the studies included a psychoeducational component, with a relative majority of the self-compassion interventions comprising CFI. Other self-compassion interventions were undertaken in the form of writing tasks, guided meditation, and one study incorporated compassionate chair work[9] within its multicomponent group program. Clinical effectiveness at follow-up was evaluated in seven studies, with follow-up periods ranging from two weeks to six months.

[9] *Compassionate chair work* is used to increase flexible perspective-taking and facilitate self-compassion and involves sitting in different chairs to help get in touch with different, often conflicting parts of oneself (e.g., anxious, angry, self-critical, compassionate), and experiencing how each aspect feels in the here and now. The key focus is on the compassionate chair and developing the motivations, feelings, tolerance, and strengths of this part of the self to try to compassionately help the anxious, angry, or self-critical self, for example (Irons & Beaumont, 2017).

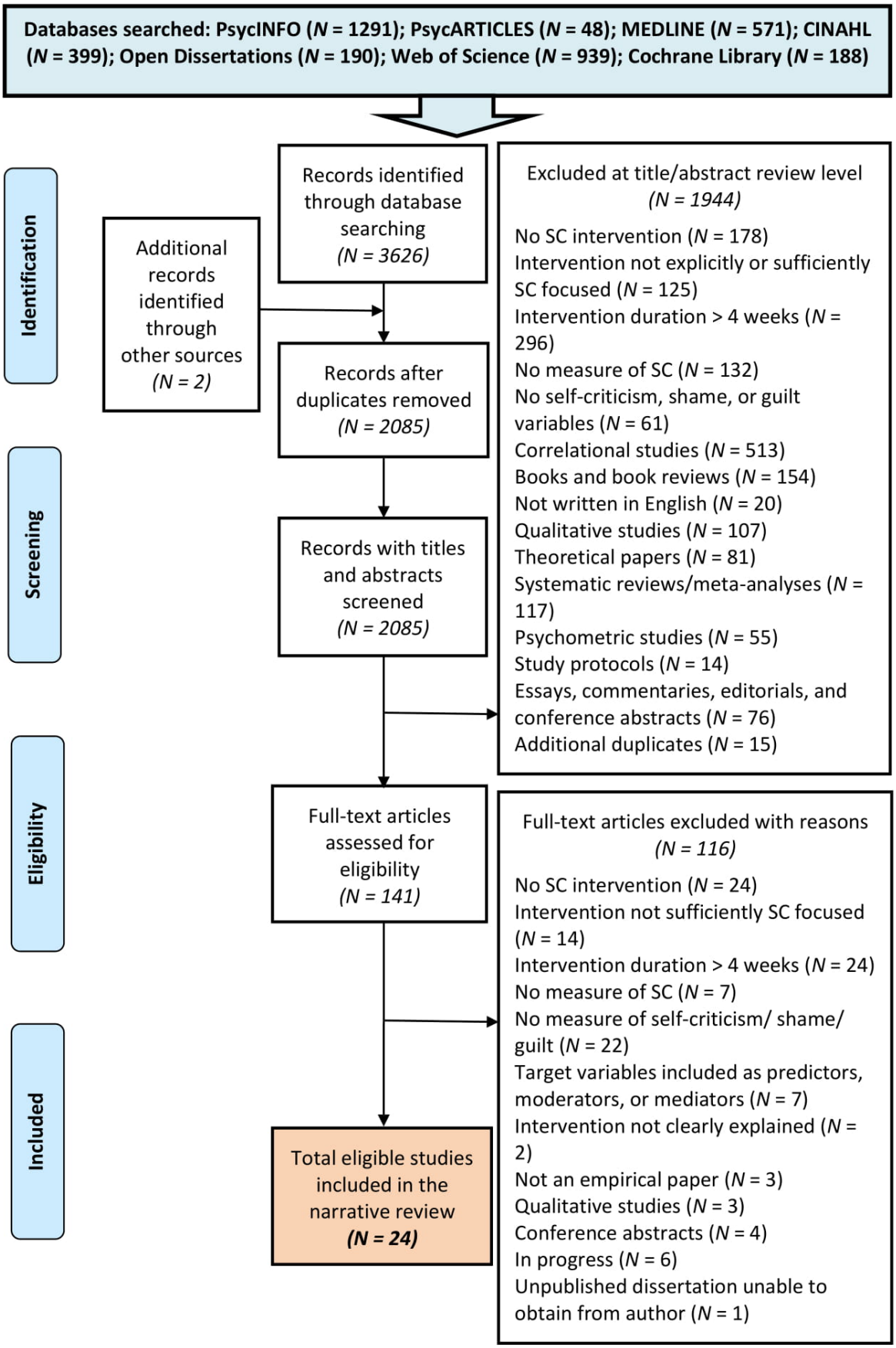


Figure 2. PRISMA flow chart of the literature search and article selection process

Table 2. Key characteristics of studies included in the current review

Authors (Year)	Study design	Intervention	CS	Setting	Comparison groups	Participants	Duration	F/U	Outcome Variables				Relevant key findings
									SC	SCR	SH	GU	
1. Albertson et al. (2015)	RCT	20-minute daily SC meditation podcasts (Compassionate Body Scan, Affectionate Breathing, and Loving-Kindness Meditation).	N	Online	Wait-list	*N* = 228, 100% adult women Age: 18 to 60 years 95% white and resided in the USA (80 %), Canada (10.4% Australia (4.4 %), the UK (4 %), or another country (1.2 %).	3 weeks	3 months	SCS		OBCS (Body shame sub-scale)		Ps in the intervention group reported greater gains in SC and body appreciation (p <.001) and reductions in body dissatisfaction (p <.001), body shame (p <.001), and contingent self-worth based on appearance (p <.01). At follow-up, SC, body dissatisfaction, body shame, body appreciation and contingent self-worth for appearance were significantly different than pre-test (p <.05) but not significantly different from post-test (p >.05).

Authors (Year)	Study design	Intervention	CS	Setting	Comparison groups	Participants	Duration	F/U	Outcome Variables				Relevant key findings
									SC	SCR	SH	GU	
2. Ascone, Sundag, Schlier & Lincoln (2017)	RCT	Ideal compassionate other imagery derived from Gilbert (2010a) and the Compassionate Mind Foundation's online material. The instructions were slightly modified by a native speaker.	Y	Lab	Control imagery: a parallel text describing a chair (neutral object) with the same structure and similar word number.	*N* = 51, 100% met diagnostic criteria for a psychosis-related condition. 36 inpatients and 15 outpatients. 70% male and 30% female.	1 session	N	SCS	FSCRS			No differential intervention effect on SC (p =.14). Significant effect for time on self-criticism (p <.001), but no group x time interaction (p =.742).
3. Beaumont, Irons, Rayner &	Pre-test post-test	"An Introduction to Compassion Focused Therapy" workshop	Y	Group	None	*N* = 28, 11 nurses and midwives, 10 counsellors/CBT	3 days	N	SCS	FSCS			Significant main effect of time on SC (p =.001). Significant main effect of time on self-critical judgment (SCS

Authors (Year)	Study design	Intervention	CS	Setting	Comparison groups	Participants	Duration	F/U	Outcome Variables				Relevant key findings
									SC	SCR	SH	GU	
Dagnall (2016)		Introduction to CFT theory; Compassion-focused exercises (e.g. CFI, compassion for self-criticism, and compassionate letter writing).				therapists) and 7 HCPs (smoking cessation workers, health care practitioners and lecturers in healthcare).							sub-scale) between pre and post-training (p <.001). No significant main effects of time on self-correction (FSCS sub-scale) (p =.756) and self-persecution (p =.570).
4. Cândea & Szentágotai-Tătar (2018)	RCT	Explanatory material about the SC intervention + developing a SC response to a recent negative event. Ps completed the	Y	Online + Lab	Group 1: Cognitive reappraisal group: same format as SC group but using cognitive	*N* = 136, socially anxious under-graduate psychology students. 120 females and 16 males.	2 weeks	N	SCS		TOSCA-3		Significant increases in SC in the SC group only (p <.001). Significant reductions in shame-proneness in the cognitive reappraisal (p <.001) and SC groups (p <.001) but not in the wait-list group.

Authors (Year)	Study design	Intervention	CS	Setting	Comparison groups	Participants	Duration	F/U	Outcome variables				Relevant key findings
									SC	SCR	SH	GU	
		same exercise 3 times a week, at a 2-day interval.			restructuring methods. Group 2: wait-list	Ages = 18 to 45 years (*M* = 21.85, *SD* = 4.49).							For state shame, the results indicate a significant main effect of time (p <.001) and time × group interaction (p =.046) but no effect of group. Post-hoc analyses revealed significant increases in state-shame in all three groups (p <.001 for wait-list and SC groups, and p =.006 for reappraisal group). Between-subjects pairwise comparisons indicated no significant differences.

Authors (Year)	Study design	Intervention	CS	Setting	Comparison groups	Participants	Duration	F/U	Outcome variables				Relevant key findings
									SC	SCR	SH	GU	
5. Dundas, Binder, Hansen & Stige (2017)	RCT	3 x 90 min sessions based on elements of MSC, CMT, and MBSR, including theoretical teaching about SC and mindfulness, group discussions, and experiential exercises. Daily between-session practice of SC and mindfulness meditation exercises using	Y	Group	Wait-list	M_{age} = 25 years (*SD* = 4.9) *N* = 158, university students 85% women	2 weeks	6 months	SCS-SF	HINT, FFMQ (non-judgment subscale)			Significant improvements for the intervention group in self-judgment (*p* <0.001), habitual negative self-directed thinking (*p* <0.001) and SC (*p* <0.001). SC was associated with reductions in self-judgment (*p* <.001) and habitual negative self-directed thinking (*p* <.001). Changes remained at 6-month follow-up for self-judgment (*p* <0.001) and

Authors (Year)	Study design	Intervention	CS	Setting	Comparison groups	Participants	Duration	F/U	Outcome variables				Relevant key findings
									SC	SCR	SH	GU	
		15-min audio guides.											habitual negative self-directed thinking (*p* <.001); as well as for SC (*p* <.001).
6. Falconer et al. (2016)	Case series	Three repetitions of an 8-minute scenario in which participants practised delivering compassion in one virtual body and then experienced receiving it from themselves in another virtual body.	Y	Virtual reality	None	*N* = 15, ps met diagnostic criteria for MDD. 10 females and 5 males. Age: 23-61 years (*M* = 32 years) All were White except for one Asian male.	3 weeks	N	SCCS (SC sub-scale)	SCCS (self-criticism subscale)			For SC, there was a significant linear increase in scores (*p* =.02) scores and no significant quadratic effect (*p* =.69). Likewise, for self-criticism, there was a significant linear decrease in (*p* <0.001) and no significant quadratic effect (*p* =.06).

Authors (Year)	Study design	Intervention	CS	Setting	Comparison groups	Participants	Duration	F/U	Outcome variables				Relevant key findings
									SC	SCR	SH	GU	
7. Gilbert & Irons (2004)	Pre-test post-test	3 x 1.5 hr CMT-based sessions to reduce self-criticism, including teaching on compassion and self-criticism, reflective discussions on daily records of self-criticism, and using CFI in response to self-criticism.	Y	Group	None	*N* = 9, ps had at least one diagnosed MDD episode, and regarded themselves as highly self-critical. 2 males and 7 females.	3 weeks	6 weeks	Ratings (1-10) of SC	Ratings (1-10) of SCR			Paired *t*-test showed a small, non-significant reduction in self-criticism (*p* =.22). Significant increase in the ease of generating compassionate images and self-soothing in a self-critical situation (*p* =.02).
8. Held & Owens (2015)	RCT	SC self-help workbook + practising SC	N	Self-help	Stress inoculation (SI) training:	*N* = 47, homeless male veterans	4 weeks	N	SCS			TRGI	Significant increase in SC from pre to post-test (*p* =.019). No statistically

Authors (Year)	Study design	Intervention	CS	Setting	Comparison groups	Participants	Duration	F/U	Outcome variables				Relevant key findings
									SC	SCR	SH	GU	
		exercises (i.e. learning to respond compassionately to one's own experiences, compassionate letter writing and using SC as a motivator) daily for at least 5-15 minutes.			SI self-help workbook + practising SI exercises (i.e. deep breathing, PMR, safe place imagery and distraction) daily for 5-15 minutes.	residing in transitional housing. Co-morbid SU: alcohol (67%), depressants other than alcohol (22%), stimulants (22%), opioids (7%), and hallucinogens (4%). All ps reported experiencing trauma.							significant interaction between the interventions and time of assessment (p =.594). Significant reduction in trauma-related guilt cognitions from pre- to post-test assessment in both SC (p =.001) and SI (p =.011) groups.

Authors (Year)	Study design	Intervention	CS	Setting	Comparison groups	Participants	Duration	F/U	Outcome Variables				Relevant key findings
									SC	SCR	SH	GU	
9. Held, Owens, Thomas & White (2018)	Pre-test post-test	4 x 60 min sessions consisting of teaching on self-compassion, self-criticism and mindfulness, compassionate statements to self and loved ones, compassionate chair work, and compassionate letter writing.	Y	Group	None	*N* = 19, all ps met diagnostic criteria for SUD. 13 males and 6 females. Age range = 21 to 54 years (*M* = 34.68, *SD* = 9.64)	4 weeks	N	SCS		TRSI	TRGI	Significant increases in total SCS, self-kindness, common humanity, and mindfulness subscale scores (p <.05). Significant reductions in over-identification (p <.05), isolation (p <.05) and a trending statistically significant reduction in self-judgment (p <.07). Significant reductions in global guilt, guilt cognitions and guilt distress (all p <.01). Significant decreases in

Authors (Year)	Study design	Intervention	CS	Setting	Comparison groups	Participants	Duration	F/U	Outcome Variables				Relevant key findings
									SC	SCR	SH	GU	
													total trauma-related shame and internalised shame (both p =<.05) but not external shame.
10. Johnson & O'Brien (2013): *Study 2*	RCT	Self-compassionate writing exercise undertaken in response to recall of a shaming event. The writing exercise was undertaken three times throughout the duration of the study.	N	Online	Group 1: shame-recall control group without any active processing of the shame-active processing of the shame-	N = 90, adults at a Western Canadian university. 15 males and 75 females. M_{age} = 19.12 years (range 17-37). Represented nine different countries.	1 week	2 weeks	SCS		TOSCA-3, SSG	TOSCA-3, SSG	Significant reductions in state shame in the SC writing group than the expressive writing condition (p =.008) and non-significantly less than the control condition. No time x condition interaction for shame and guilt. Significantly higher SCS scores in the SC writing

Authors (Year)	Study design	Intervention	CS	Setting	Comparison groups	Participants	Duration	F/U	Outcome Variables				Relevant key findings
									SC	SCR	SH	GU	
					related episode. Group 2: expressive-writing group.								group than the control group at 2-week follow-up (p =.05). Significant decrease in shame-proneness only in the SC condition (p =.013); however, difference between amount of reduction was non-significant between SC and expressive writing groups.
11. Kamboj et al. (2015)	Within-subjects cross-over	CFI exercise, i.e. listening to audio-recordings of the Ideal Compassionate Other Imagery, soothing rhythm breathing, and engagement with	Y	One-to-one (ps' home)	Ps took no drug prior to CFI (testing session 2). Testing sessions took place	N = 20, ecstasy users recruited from the local community 7 females and13 males. M_{age} = 25.5 ±	1 session	N	SCCS (SC subscale)	SCCS (self-criticism subscale), FSCRS			Significant reduction in self-criticism in response to ecstasy (p =.001) and a similar reduction in response to CFI (p =.015). On the CFI + ecstasy session there was an additional decrease in self-criticism (p =.03) reflecting a combined effect of CFI +

Authors (Year)	Study design	Intervention	CS	Setting	Comparison groups	Participants	Duration	F/U	Outcome Variables				Relevant key findings
									SC	SCR	SH	GU	
		the ideal compassionate being in imagery).			6-14 days apart.	3.59 years.							MDMA. Main effect of time (p <.001) and session (p =.001) but no time × session interaction (p = 0.13) on SC. Post-hoc analyses indicated an effect of ecstasy alone on SC but no additional effect of CFI on the CFI + MDMA session.
12. Kamboj et al. (2018)	Within-subjects cross-over	The CFI exercise was identical to that used in Kamboj et al. (2015; see above).	Y	One-to-one (ps' home)	Same as Kamboj et al. (2015; see above).	N = 25, MDMA users recruited from the local community. M_{age} = 28.45 ± 6.16 years.	1 session	N	SCCS (SC subscale)	SCCS (self-criticism subscale)			Significant main effects of time (p <0.001) and session (p =.017) on self-criticism but no significant time × session interaction (p =.089) indicating that CFI did not produce any additional reductions in self-criticism on the CFI + MDMA

Authors (Year)	Study design	Intervention	CS	Setting	Comparison groups	Participants	Duration	F/U	Outcome Variables				Relevant key findings
									SC	SCR	SH	GU	
						Data from 20 ps (12 males and 8 females) was retained as their ecstasy contained only MDMA (*N* = 18) or MDMA plus ≤ 33% glucose (*N* = 2).							session. Significant time × session interaction effect on SC (*p* =.006). Follow-up analyses showed similar increases in SC in response to MDMA (*p* =.008) and CFI (*p* =.023) respectively, and an additional, albeit small, increase on the MDMA + CFI session, reflecting the combined effects of MDMA and CFI on SC.
13. Kelly & Carter (2015)	RCT	Psycho-ed on BED, SC and the relevance of SC for BED, adverse role of self-criticism in BED,	N	Online	Group 1: Behavioural self-help + writing about their learning	*N* = 41, Canadian adults with BED. 34 females and 7 males	3 weeks	N	SCS	SCS (negative subscale)			Significantly greater improvements in SC in the SC group compared to the behavioural self-help and waitlist control groups (*p* <.05). Positive SC scores (self-kindness

Authors (Year)	Study design	Intervention	CS	Setting	Comparison groups	Participants	Duration	F/U	Outcome Variables				Relevant key findings
									SC	SCR	SH	GU	
		food planning assignment + daily practice of two CFI exercises (i.e., compassionate self and compassionate other) and self-compassionate letter writing in relation to BED.			learning experiences. Group 2: wait-list	M_{age} = 45 years (SD = 15). 75.6% Caucasian. Only 1 participant had received prior treatment for BED.							mindfulness, common humanity) improved in the SC group only, and this improvement was greater than that of the other two conditions (p <.05). No significant decrease in negative SCS scores (self-judgment, over-identification, isolation) in the SC group; however, there were significant increases in negative SCS scores in the control group only (p <.001).
14. Kelly & Waring (2018)	RCT	Self-compassionate letter writing: Ps wrote a compassionate	N	Online	Wait-list	N = 40, non-treatment seeking females with AN (75%) and	2 weeks	N	SCS		OAS, ESS		Significant condition × time interactions for both OAS (p <.01) and ESS scores (p <.01). Participants in the SC condition experienced a decrease in both

Authors (Year)	Study design	Intervention	CS	Setting	Comparison groups	Participants	Duration	F/U	Outcome variables				Relevant key findings
									SC	SCR	SH	GU	
		letter to someone else first and then wrote a compassionate letter directed toward themselves. Ps received an online link at 6 a.m. every day and were asked to spend 15–20 mins per day on this task.				atypical AN. 48.4% Asian, 44.1% Caucasian, and 7.5% other ethnicities. M_{age} = 21.6 years (*SD* = 3.97; range: 18–39).							OAS and ESS scores (p <.001) whereas those in the wait-list control condition did not experience significant changes in either OAS or ESS score (p <.10). Significant condition x time interaction for SC (p < .05). There was a significant increase in SCS scores in the intervention condition only (p <.01).
15. Kelman, Evare, Barrera,	RCT	Internet-based CMT: 45-minute didactic training	N	Online	Internet-based CBT: 45-minute didactic	*N* = 123, perinatal and intending to Become	2 weeks	N	SCS-SF	FSCRS			No significant time x condition interactions for inadequate self-criticism (p =.63), and hated self-criticism (p =.26). Significant

Authors (Year)	Study design	Intervention	CS	Setting	Comparison groups	Participants	Duration	F/U	Outcome variables				Relevant key findings
									SC	SCR	SH	GU	
Munõz & Gilbert (2018)		on CMT + practice cultivating the compassionate self. Ps listened to four audio meditations aimed at developing compassion towards the self and others.			training on CBT + practising cognitive restructuring, behavioural activation, interpersonal effectiveness, and sleep hygiene.	pregnant women. Age range: 18-54 years. 47.6% currently pregnant, 13.1% pregnant within the last year, 39.3% intending to become pregnant. 78.6% from the US, 21.4% from India.							main effect of time on inadequate self-criticism (p <.001), and hated self-criticism (p <.001). No main effect of group on inadequate self-criticism (p =.91) and hated self-criticism (p =.89). Main effect of time on SC scores (p <.001) but no main effect of group (p =.93). No significant time x condition interaction for SC (p =.06), although examination of means showed that ps in the CMT group trended towards greater increases in SC.

Authors (Year)	Study design	Intervention	CS	Setting	Comparison groups	Participants	Duration	F/U	Outcome variables				Relevant key findings
									SC	SCR	SH	GU	
16. Laidlaw et al. (2014)	Pre-test post-test	4-session workshop: teaching on compassion and compassion-related topics (e.g. attachment, shame) + compassion-focused exercises (mindful breathing, safe space imagery, LKM, CFI, and cultivating SC towards all aspects of oneself.	Y	Group	None	N = 9, university students. M_{age} = 25.11 years ± 7.85. 6 females and 3 males.	4 weeks	6 months	SCS	FSCRS			Ps reported improvements in SC and all three sub-scales of the FSCSR. Gains were maintained for up to 6 months and slightly extended (3 ps completed follow-up measures). No *p* values were reported.

Authors (Year)	Study design	Intervention	CS	Setting	Comparison groups	Participants	Duration	F/U	Outcome variables				Relevant key findings
									SC	SCR	SH	GU	
17. Matos et al. (2017)	RCT	2-hour group session: theoretical background on compassion + CMT practices (soothing rhythm breathing; mindfulness; developing the compassionate self; compassionate other imagery; using the compassionate self to work with self-criticism and	Y	Self-help	Wait-list	*N* = 93, community-dwelling adults. 9 (9.7%) males and 84 (90.3%) females. Age: 18 to 43 years (*M* = 23.34; *SD* = 4.16). 78.5% college students.	2 weeks	N	SCS, CAAS	FSCRS	OAS		Significant time x group interaction for the SC subscale of the CAAS (*p* =.024). Significant main effect of time on SCS self-judgment (*p* =.021). Significant time × group interaction for self-judgement (*p* =.002) with scores in the CMT group significantly decreasing from pre- to post-test. Significant main effect of time (*p* <.001) and time × group interaction (*p* =.010) on FSCRS self-criticism scores. There was a

Authors (Year)	Study design	Intervention	CS	Setting	Comparison groups	Participants	Duration	F/U	Outcome variables				Relevant key findings
									SC	SCR	SH	GU	
		life difficulties. Ps were expected to engage in the CMT practices regularly.											significant decrease in self-criticism in the CMT condition (p <.001) but not in the control group. Significant time × group interaction (p =.005) but non-significant main effect of time on shame (p =.139). Post-hoc analysis revealed a significant decrease in shame in the CMT condition (p =.003).
18. McEwan & Gilbert (2015)	Pre-test post-test	Ps practised CFI (compassionate other/self) for 5 min daily. Weekly imagery	N	Online	No control	N = 45, students from Derby university. 12 males and	2 weeks	6 months	SCS	FSCRS			Main effect of imagery with significant increases in SC (p =.000) and significant reductions in self-coldness (p =.010), and inadequate self-

Authors (Year)	Study design	Intervention	CS	Setting	Comparison groups	Participants	Duration	F/U	Outcome variables				Relevant key findings
									SC	SCR	SH	GU	
		experience diaries were also completed.				33 females. M_{age} = 30.73 years; *SD* = 9.92 years.							criticism (*p* =.001). Changes in these variables were significantly maintained at follow-up
19. Mitchell, Whittingham, Steindl & Kirby (2018)	Pre-test post-test	Video 1: Psycho-ed on SC during the transition to motherhood + brief SC exercises; Video 2: SC visualisation exercise. Ps accessed the videos as many times as they wished during the study.	N	Online	No control	*N* = 262, mothers who were ≤ 24 months post-partum. Age range: 18-44 years. Caucasian 41.2% Asian 4.2%.	4 weeks	N	SCS-SF		OAS		Statistically significant increase in the mean score for SC from pre- to post-test. In contrast, there was no change in mean score for shame in the mothering role (*p* =.193).

Authors (Year)	Study design	Intervention	CS	Setting	Comparison groups	Participants	Duration	F/U	Outcome variables				Relevant key findings
									SC	SCR	SH	GU	
20. Mosewich, Crocker, Kowalski & DeLongis (2013)	RCT	Part A: 10-min presentation on SC and its role in dealing with sport challenges; Part B: SC writing task in response to a negative sport event; Part C: Ps completed a series of writing tasks involving writing self-compassionately about difficult past sport	N	Online + self-help	Attention control training: same format as SC intervention but writing tasks related to general sport topics.	*N* = 51, female athletes competing in varsity sport. M_{age} = 20.28 years; *SD* = 2.25 (SC group); 20.27 years, *SD* = 1.08 (control group). 92% Caucasian, 4% Black, 2% Aboriginal, 2% Chinese, and 2% West	1 week	1 month	SCS	Ratings (1-10) of SCR.			Significant group × time interaction effects for SC and self-criticism (p <.01). Pairwise comparisons revealed no significant differences between groups at pre-test (T1) and significant differences at 1-week post-test (T2) and 1-month follow-up (T3) for both SC and self-criticism(p <.01). For the SC group, there were significant improvements between T1 and T2, and T1 and T3 for SC (p <.05 and p <.01, respectively) and self-

Authors (Year)	Study design	Intervention	CS	Setting	Comparison groups	Participants	Duration	F/U	Outcome variables				Relevant key findings
									SC	SCR	SH	GU	
		experiences and applying the SC skills to recent situations.				Asian.							criticism (p <.01). For the attention control group, there was a decrease in SC and an increase in self-criticism across the three time-points.
21. Naismith, Mwale & Feigenbaum (2017); *Study 2*	Pre-test post-test	5-min CFI exercise: Ps practised either CFI from memory ('Compassion flowing into oneself' i.e. recalling a time when they received compassion from	N	Self-help	None	N = 17, ps diagnosed with PD; 16 diagnosed with BPD and 1 with NPD. 15 females and 2 males. Age: 19-57 years (M = 34, SD = 10.6).	1 week	N	SCS-SF	SCS (self-criticism subscale)			Significant increases in SC from baseline to 1-week follow-up for those Ps (n = 15) who reported ≥ 5 practice attempts (p =.007). Change in SC (positive SCS items) was associated with practice frequency (p =.032). No significant changes in self-criticism from baseline to 1-week follow-up (p =.177).

Authors (Year)	Study design	Intervention	CS	Setting	Comparison groups	Participants	Duration	F/U	Outcome variables				Relevant key findings
									SC	SCR	SH	GU	
		another) and some practised CFI from imagination ('Creating a compassionate ideal' i.e. imagining a person, animal, or inanimate object offering them compassion).				White (82%), Asian/Asian British (6%), Mixed (6%), other (6%).							
22. Rycroft (2016)	RCT	CFT script comprising background information about	N	Self-help	Wait-list	*N* = 10, adults experiencing traumatic stress symptoms.	3 weeks	N	SCS-SF	FSCRS			No significant group x time interaction for SC and self-criticism. No significant main effects were found with regards to the SCS-SF scores.

Authors (Year)	Study design	Intervention	CS	Setting	Comparison groups	Participants	Duration	F/U	Outcome variables				Relevant key findings
									SC	SCR	SH	GU	
		compassion + instructions for practising compassion exercises (e.g. soothing rhythm breathing, CFI, focusing compassion on others) for at least 5 mins daily.				4 females and 6 males. Age = 28-65 years (*M* = 47.10, *SD* = 12.57).							Significant main effect of time for the FSCRS inadequate-self (p =.004) and hated self scores (p =.020). Pre-test was associated with an unweighted marginal mean FSCRS inadequate-self score .822 points higher than post-test, a statistically significant difference (p =.010).
23. Toole & Craighead (2016)	RCT	20-minute podcasts including a compassionate body scan (completed first	N	Online	Wait-list	*N* = 87, undergraduate female students not currently engaged in	6-8 days	N	SCS		OBCS (Body shame sub-scale)		Significant main effect of time for the SCS total score (p =.013) and no main effect of group (p =.501) or time x group interaction (p =.082). There was a significant main

Authors (Year)	Study design	Intervention	CS	Setting	Comparison groups	Participants	Duration	F/U	Outcome variables				Relevant key findings
									SC	SCR	SH	GU	
		in the lab and then sent to participants the following two days); an affectionate breathing exercise (sent on days 4 and 5), and a LKM directed toward the body (sent on days 6 and 7).				meditation-based practice.							effect of time on the SCS 'self-compassion factor' score (p =.031) and no main effect of group (p =.121) or time x group interaction (p =.714). Significant time x group interaction for the 'self-criticism' factor of the SCS. Greater reductions in the SC group compared to controls (p =.001). Post-hoc analyses showed that the pre-post reduction was only significant for the SC group (p =.001). No significant time x group interaction effect for body shame (p =.476).

Authors (Year)	Study design	Intervention	CS	Setting	Comparison groups	Participants	Duration	F/U	Outcome variables				Relevant key findings
									SC	SCR	SH	GU	
24. Tsivos (2015)	RCT	Ps were provided with information about the CFT model and the rationale behind CFI exercises. Ps then practised soothing rhythm breathing + 25-minute-guided audio of the ideal compassionate other imagery exercise.	Y	Lab + online	Group 1: neutral imagery control. Group 2: healthy comparison control: Ps completed questionnaires only.	*N* = 42, females with a global EDE-Q score > 2.5. A third sample (*N* = 24) of women with low eating disorder symptoms (global EDE-Q <1) formed a comparison sample. M_{age} (across all groups) = 23.45 years (*SD*	5-7 days	N	SCS	FSCRS	OAS		Significant group effect on external shame (OAS) (*p* =.005) and no group effect on self-criticism (*p* =.09) and SC (*p* =.24), after adjusting for baseline scores and age. Pairwise comparisons with Bonferroni adjustments for multiple comparisons indicated that the CFI group scored significantly lower on shame than the neutral imagery group (*p* =.006). No significant differences in external shame scores between the comparison and neutral imagery groups (*p*

Authors (Year)	Study design	Intervention	CS	Setting	Comparison groups	Participants	Duration	F/U	Outcome variables				Relevant key findings
									SC	SCR	SH	GU	
						= 4.3).							=.36) or the comparison and the CFI groups (*p* =1.00).

Note: SC = Self-Compassion; RCT = Randomised Controlled Trial; SCS = Self-Compassion Scale; SCS-SF = Self-Compassion Scale – Short Form; OBCS = Objectified Body Consciousness Scale; CS = Clinician Support; F/U = Follow-Up; SCR = Self-Criticism; SH = Shame; GU = Guilt; Ps = Participants; FSCRS = Forms of Self-Criticising/Self-Attacking and Self-Reassuring Scale; CFT = Compassion-Focused Therapy; CFI = Compassion-Focused Imagery; CBT = Cognitive Behaviour Therapy; FSCS = Functions of Self-Criticism Scale; HCP = Healthcare Professional; MSC = Mindful Self-Compassion; CMT = Compassionate Mind Training; MBSR = Mindfulness-Based Stress Reduction; HINT = Habit Index of Negative Thinking Scale; FFMQ = Five Facets Mindfulness Questionnaire; VR = Virtual Reality; SCCS = Self-Compassion and Self-Criticism Scale; MDD = Major Depressive Disorder; M = mean; SD = standard deviation; SI = stress inoculation; PMR = Progressive Muscle Relaxation; SUD = Substance Use Disorder; TRGI = Trauma-Related Guilt Inventory; TRSI = Trauma-Related Shame Inventory; TOSCA-3 = Test of Self-Conscious Affect-3; SSG = State Shame and Guilt Scales; T = time of measurement; MDMA = 3,4-Methylenedioxymethamphetamine; BED = Binge Eating Disorder; AN = Anorexia Nervosa; OAS = Other as Shamer Scale; ESS = Experiences of Shame Scale; CAAS = Compassionate Attributes and Action Scale; ANOVA = Analysis of Variance; PD = personality disorder; BPD = Borderline Personality Disorder; NPD = Narcissistic Personality Disorder; LKM = Loving Kindness Meditation; EDE-Q = Eating Disorders Examination Questionnaire.

1.3.3 Quality assessment

Using the EPHPP quality assessment tool (EPHPP, 2009), six studies were appraised as moderate in quality and the remainder were appraised as weak (Appendix A). The majority of studies used self-selecting and demographically homogeneous samples, whilst seven studies had significantly low sample sizes, which reduced generalisability of the findings and increased the risk of selection bias.

Of the included studies, eight studies used an active control condition, while the remaining studies used either a non-active or waitlist control condition, or no form of control. Although fourteen studies were described as randomised, methods of randomisation were reported in only five studies (Albertson et al., 2014; Falconer et al., 2016; Mitchell et al., 2018; Naismith et al., 2017; Toole & Craighead, 2016). Where differences between groups at baseline were identified in the RCTs, these were adequately reported and accounted for in the statistical analyses in most studies. Across all studies, blinding for both participants and outcome assessors was particularly weak, which may have increased the risk of reporting and detection biases. Only one study (Toole & Craighead, 2016) explicitly reported the use of methods to blind participants to the research question.

Attrition rates were varied, with six studies (Gilbert & Irons, 2004; Kamboj et al., 2015; Kamboj et al., 2018; Laidlaw et al., 2014; Mosewich et al., 2013; Toole & Craighead, 2016) providing no explicit reporting of dropout data and the remaining studies reporting dropout rates ranging from 2.4% (Tsivos, 2015) to 68.9% (Naismith et al., 2017). Reasons for dropouts were given in only four of the studies (Albertson et al., 2014; Ascone et al., 2017; Kelly & Carter, 2015; Rycroft, 2016), while three studies failed to report withdrawals and dropouts.

Manipulation checks were used in a small number of the interventions, while adherence to the interventions was not reliably assessed in most studies. In contrast, data collection (e.g., use of validated measures, etc.) was generally strong. The findings surmised in this review are interpreted in light of these potential sources of bias.

1.3.4 Analysis of the studies

1.3.4.1 Measurement of self-compassion

The most commonly used measure of trait self-compassion across the studies was the Self-Compassion Scale (SCS; Neff, 2003a, b) based on Neff's definition of self-compassion. The more

recently developed Compassionate Attributes and Action Scales (CAAS: Gilbert et al., 2017), based on Gilbert's definition of compassion, was only used once (Matos et al., 2017), whereas four studies used a measure of state self-compassion (Falconer et al., 2016; Gilbert & Irons, 2004; Kamboj et al., 2015; Kamboj et al., 2016).

While the differences in self-compassion outcomes across studies are unlikely to be related to the type of outcome measures used, the issue of the appropriateness of measurement of self-compassion needs to be considered. The fact that some studies with positive outcomes used the 'self-compassion' factor of the SCS rather than the total SCS score as a measure self-compassion raises important conceptual issues. Although some researchers (López et al., 2015; Muris, 2015) have suggested a two-factor structure of the SCS ('self-compassion' and 'self-criticism'), Neff (2015) insisted that it would not be theoretically coherent to use the two-factor model. This is because self-compassion represents the relative balance of compassionate and uncompassionate responses to suffering (Neff, 2015), thus both the presence and lack of self-compassion need to be considered when measuring the trait. Therefore, particular caution is required in interpreting the results of these studies.

Furthermore, all of the included studies measured self-compassion using self-report. The reliance on self-report measures could be affected by several sources of response bias, including social desirability bias, acquiescence bias[10], and extreme responding[11]. However, it is not possible to determine to what extent these biases were minimised or accounted for. Self-reports also assume that respondents "have access to the psychological property that the researcher wishes to measure" and that the participants "are willing to report that property" (Judd & McClelland, 1998, p. 202). Then again, it is questionable whether the participants in the reviewed studies had sufficient self-knowledge to be able to accurately portray what the self-compassion measure was attempting to establish.

1.3.4.2 Guided meditation studies

Two RCTs evaluated the effectiveness of online unsupported guided meditation in increasing self-compassion and reducing body image concerns, including body shame (Albertson et al., 2015; Toole & Craighead, 2017). The meditations were based on Neff's definition of self-

[10] The tendency to agree irrespective of the question.
[11] A form of response that drives respondents to only select the most extreme options or answers available (Furnham, 1986).

compassion and, as such, aimed to elicit self-kindness, common humanity, and mindfulness. Albertson et al.'s (2015) 3-week trial produced significant improvements in both self-compassion and body shame compared to the waitlist condition. Furthermore, improvements remained significant at the 3-month follow-up. Conversely, Toole and Craighead (2017), which sought to replicate Albertson et al.'s study using a 1-week intervention, reported no significant improvements in either self-compassion or body shame compared to the waitlist condition.

Several reasons might account for the outcome differences in these two RCTs. Toole and Craighead's (2017) findings might be accountable to the shorter intervention duration and reduced power to detect treatment effects due to a smaller sample. Participants in Toole and Craighead's trial were also blinded to the research question; therefore, the superior outcomes in Albertson et al.'s (2015) study could be partly explained by performance bias. Given that only Albertson et al.'s study advertised for participants with body image concerns, it is also possible that participants may have been experiencing higher body image distress and may have, therefore, been more motivated to engage in the training. Of note, Toole and Craighead's study reported a specific post-test improvement in scores on the 'self-criticism' factor of the SCS. Considering that factor scores had not yet been proposed at the time of Albertson et al.'s trial, it is possible that the 'self-criticism' factor may have been driving the improvements in the total SCS score reported in Albertson et al.'s trial. Furthermore, the 'self-compassion' factor items showed a non-specific response, increasing in both the intervention and control groups, suggesting that those items may be more sensitive to demand characteristics. Lastly, participants in Toole and Craighead's study reported lower practice frequency, which may have impacted on the outcomes. Nonetheless, practice frequency was based on self-report in both trials which may have been susceptible to social desirability bias. Thus, the findings need to be interpreted with caution.

1.3.4.3 Self-compassionate writing studies

Four RCT studies (Cândea & Szentágotai-Tătar, 2018; Johnson & O'Brien, 2013; Kelly & Waring, 2018; Mosewich et al., 2013) utilised an online writing intervention of varied duration. Two studies used clinical samples comprising highly socially anxious undergraduates who scored above the cut-off score on the LSAS-SR[12] (Cândea & Szentágotai-Tătar, 2018), and women who met DSM-V[13] (American Psychiatric Association, 2013) criteria for AN or atypical AN as assessed

[12] Liebowitz Social Anxiety Scale: Self-Report Version (LSAR-SR; Fresco et al., 2001).
[13] Diagnostic and Statistical Manual of Mental Disorders, Fifth Edition (DSM-V).

by semi-structured interview (Kelly & Waring, 2018). Ongoing intervention support in the form of personalised online feedback was provided in one trial (Cândea & Szentágotai-Tătar, 2018). In another trial (Mosewich et al., 2013), brief psychoeducation on self-compassion was provided alongside an opportunity to practice the writing task with initial support. All RCTs reported improvements in self-compassion in the self-compassion group at the post-test stage (Cândea & Szentágotai-Tătar, 2018; Kelly & Waring, 2018), 1-week post-test (Mosewich et al., 2013) and 2-week post-test (Johnson & O'Brien, 2013). Improvements in self-compassion and self-criticism were maintained at 1-month follow-up in one trial (Mosewich et al., 2013).

All three RCTs evaluating the effects of the intervention on shame reported improvements in shame-proneness immediately after training (Cândea & Szentágotai-Tătar, 2018; Kelly & Waring, 2018) and at 2-week post-test (Johnson & O'Brien, 2013). However, two studies indicated that improvements were not statistically different than the active control groups (Cândea & Szentágotai-Tătar, 2018; Johnson & O'Brien, 2013), suggesting that non-specific factors may have contributed to the reductions in shame-proneness in the self-compassion groups. Two studies also measured state shame immediately after training (Cândea & Szentágotai-Tătar, 2018; Johnson & O'Brien, 2013). However, one study reported no significant improvements (Cândea & Szentágotai-Tătar, 2018) and the other study reported improvements that were not significantly different than the no-writing control condition (Johnson & O'Brien, 2013). The latter study also measured state guilt, but no significant differences were found across conditions. While the RCTs that reported positive outcomes had some significant methodological flaws, including small, self-selecting, and homogeneous samples, lack of blinding, reliance on self-report to measure frequency of practice (Mosewich et al., 2013), and no active control group (Kelly & Waring, 2018), there is no strong evidence of clinical ineffectiveness.

1.3.4.4 Compassion-focused imagery (CFI) studies

Four controlled (Ascone et al., 2017; Kamboj et al., 2015; Kamboj et al., 2018; Tsivos, 2015) and three pre-test post-test studies (Gilbert & Irons, 2004; McEwan & Gilbert, 2015; Naismith et al., 2017) evaluated the effects of CFI as the main intervention using clinical and non-clinical samples. The trials varied in duration and level of clinician support, and only one trial delivered an exclusively self-administered intervention (McEwan & Gilbert, 2015).

Controlled studies

Of the three controlled studies which delivered a single session of CFI, only one study (Kamboj et al., 2018) found significant improvements in self-compassion in the CFI condition compared to the control condition. The fourth controlled study found no significant differences in self-compassion across conditions, despite implementing a longer intervention (Tsivos, 2015). However, it should be noted that the only study reporting significant gains in self-compassion (Kamboj et al., 2018) had no active control group and therefore, these findings need to be considered provisional. Furthermore, most of the other studies used a trait rather than a state measure of self-compassion (Ascone et al., 2017; Tsivos, 2015); therefore, more time and a greater dose of the intervention may have been required to detect an observable change in trait self-compassion.

Regarding self-criticism, of the three controlled studies that delivered a single dose of CFI, only one study (Kamboj et al., 2015) reported significant reductions in state self-criticism compared to the control condition. Interestingly, this study had found no significant differences in state self-compassion across conditions, suggesting that other factors may have been operating in reducing state self-criticism. The fourth controlled study (Tsivos, 2015) reported no group effect of CFI on self-criticism; however, significant reductions in external shame were reported in the CFI group compared to the active control group.

Non-controlled studies

These studies delivered CFI over 1-week (Naismith et al., 2017), 2-week (McEwan & Gilbert, 2015) and 3-week periods (Gilbert & Irons, 2004). All studies reported significant improvements in self-compassion, and improvements were maintained at 6-month follow-up in one study (McEwan & Gilbert, 2015). However, despite the reported improvements, these results carry little weight due to the non-controlled nature of the designs used in the studies. Furthermore, similar to the controlled studies, the sample sizes were small, thus increasing the likelihood of a type-2 error skewing the results.

Regarding self-criticism, of the three non-controlled studies, only one study reported significant reductions in self-criticism scores at post-training, and improvements were maintained at the 6-month follow-up (McEwan & Gilbert, 2015). However, this was a non-controlled pilot study which used a student sample to assess the feasibility of an online unsupported practice of CFI, thus limiting the external validity of the study and the possibility of drawing any firm conclusions about specific intervention effects.

1.3.4.5 Group-based multicomponent studies

One RCT (Dundas et al., 2017) and three pre-test post-test studies (Beaumont et al., 2016; Held et al., 2018; Laidlaw et al., 2014) evaluated a multicomponent group intervention which integrated didactic teaching on compassion and self-compassion with self-compassion skills training. Only one study included a clinical sample comprising individuals attending a substance use disorder treatment program (Held et al., 2018).

Controlled studies

The only RCT (Dundas et al., 2017) in this category reported significant improvements in self-compassion and self-criticism compared to the waitlist condition. Improvements for both self-compassion and self-criticism were maintained at the 6-month follow-up.

Non-controlled studies

The pre-test post-test studies showed significant improvements in self-compassion at post-test (Beaumont et al., 2016; Held et al., 2018; Laidlaw et al., 2014). Improvements were also maintained at the 6-month follow-up in one study; however, no statistical significance data was reported (Laidlaw et al., 2014). It should be noted that, despite reporting successful interventions, these studies are subject to numerous and critical methodological weaknesses, including small sample sizes, no comparison conditions, and significant attrition rates.

With respect to self-criticism, two studies reported no statistically significant improvements at the post-test stage (Beaumont et al., 2016; Held et al., 2018). The third study reported positive improvements with further improvement at the 6-month follow-up; however, statistical significance data was missing (Laidlaw et al., 2014).

One study also evaluated the effects of group training on shame and guilt (Held et al., 2018). Although no significant reductions in external shame were reported, the findings demonstrated significant improvements in trauma-related shame, internal shame[14], and trauma-related guilt. However, given that this study did not include an active control condition, coupled with the fact that participants were also attending an intensive outpatient substance use disorder treatment program, it is not possible to determine the specific effects of the self-compassion

[14] *Internal shame* relates to a tendency to attend to the negative aspects of the self, to have global self-judgments of the self as bad, inferior and flawed (Gilbert, 1998; Tangney & Dearing, 2002).

training. Furthermore, reported improvements in this study could be due to increased abstinence from substances, which may have been the driving force behind increased symptom severity at baseline.

1.3.4.6 Individual multicomponent studies

Five RCTs (Kelly & Carter, 2015; Held & Owens, 2015; Kelman et al., 2018; Matos et al., 2017; Rycroft, 2016) and one pre-test post-test study (Mitchell et al., 2018) evaluated a multicomponent individual intervention incorporating psychoeducation and self-compassion skills training. Half of the studies delivered the training online (Kelly & Carter, 2015; Kelman et al., 2018; Mitchell et al., 2018), and the other half through self-help written and audio arrangements (Held & Owens, 2015; Matos et al., 2017; Rycroft, 2016). Most studies were unsupported, with only one study delivering initial support in the form of a 2-hour group session focusing on introducing the concept of compassion and the compassion practices (Matos et al., 2017). Duration varied from two to four weeks, and none of the studies included follow-ups.

Controlled studies

Three RCTs found statistically significant improvements in self-compassion at post-test (Held & Owens, 2015; Kelly & Carter, 2015; Matos et al., 2017). In contrast, the other two RCTs reported no differential changes in self-compassion across conditions (Kelman et al., 2018; Rycroft, 2016), although examination of means in one of these studies indicated that the self-compassion group trended towards greater increases in self-compassion compared to the active control condition (Kelman et al., 2018).

Four RCTs also evaluated the intervention effects on self-criticism (Kelly & Carter, 2015; Kelman et al., 2018; Matos et al., 2017; Rycroft, 2016). Three studies reported significant improvements in the self-compassion training conditions; however, these reductions were not significantly different than the waitlist (Rycroft et al., 2016) and active treatment conditions (Kelly & Carter, 2015; Kelman et al., 2018). In contrast, one RCT reported significantly greater reductions in self-criticism compared to the waitlist condition (Matos et al., 2017). Of note, the majority of studies reporting unfavourable outcomes used clinical samples (Kelly & Carter, 2015; Rycroft, 2016), suggesting that self-criticism may be more difficult to shift in clinical samples.

One RCT also measured shame (Matos et al., 2017), whereas one other RCT measured guilt (Held & Owens, 2015). The RCT assessing shame found significant improvements in external shame compared to the waitlist condition (Matos et al., 2017). The RCT measuring guilt reported

significant improvements in trauma-related guilt in their sample of homeless male veterans; however, these reductions were not superior to the active control group (Held & Owens, 2015). Furthermore, it should be stated that, in the absence of a true control group, the results in the latter study might have been confounded by the fact that participants were receiving additional services alongside the self-compassion intervention.

Non-controlled studies

The only pre-test post-test study in this category exhibited significant pre-post improvements in self-compassion (Mitchell et al., 2018). However, no significant changes in external shame were reported. Interestingly, despite delivering a shorter intervention, the RCT which also measured external shame (Matos et al., 2017) produced better outcomes in relation to external shame. It should be noted, however, that participants in the pre-test post-test study were directed to focus on their feelings and experiences related to their new mothering role when completing the external shame measure, which may have created an additional source of external shame. It is also possible that the CMT intervention in the RCT may have influenced external shame more strongly.

1.3.4.7 Immersive virtual reality-based studies

One case series evaluated the effects of self-identification with virtual bodies within immersive virtual reality on self-compassion and self-criticism in individuals with major depression (Falconer et al., 2016). In this trial, the intervention consisted of an 8-minute scenario in which participants practised delivering compassion in one virtual body and then experienced receiving it from themselves in another virtual body. The findings indicated that three repetitions of this scenario led to a significant linear increase in self-compassion and a significant linear decrease in self-criticism from baseline to post-training. However, these results are subject to methodological weaknesses, including a small sample and no active control condition. Also, the repeated use of the outcome measures across numerous time points may have reduced the validity of the measure.

1.4 Discussion and conclusion

This review aimed to provide a critical overview and synthesis of the findings of both published and unpublished experimental studies about the impact of BSCIs on self-compassion, self-criticism, shame, and guilt. None of the reviewed studies failed to provide some degree of

evidence suggesting improvements in either all or some of the target outcome variables. However, the evidence has numerous critical methodological limitations, which are discussed below. Implications of the present findings for the clinical use of BSCIs are discussed, and directions for needed clinical research are identified.

1.4.1 Overall impact of BSCIs on the outcome variables

1.4.1.1 Impact on self-compassion

The 14 RCTs included in this review produced mixed findings for self-compassion. Some studies reported significant improvements compared to either a waitlist or active control condition (Albertson et al., 2015; Cândea & Szentágotai-Tătar, 2018; Dundas et al., 2017; Johnson & O'Brien, 2013; Kelly & Carter, 2015; Kelly & Waring, 2018; Matos et al., 2017; Mosewich et al., 2013), and others reported either no differential improvements across conditions (Held & Owens, 2015; Kelman et al., 2018; Toole & Craighead, 2016) or no significant improvements in both the intervention and control conditions (Ascone et al., 2017; Rycroft, 2016; Tsivos, 2015). Although these trials included both clinical and non-clinical samples, there was no evidence suggesting that the interventions were more effective to some presentations than others. This is an intriguing finding given the inverse association between self-compassion and psychopathology found in MacBeth and Gumley's (2012) meta-analysis, suggesting that clinical samples may experience more difficulties in taking a self-compassionate stance and may thus require longer-term interventions.

Of note, the studies reporting the 'best' outcomes had multiple methodological weaknesses (Albertson et al., 2015; Cândea & Szentágotai-Tătar, 2018; Dundas et al., 2017; Johnson & O'Brien, 2013; Kelly & Carter, 2015; Kelly & Waring, 2018; Matos et al., 2017; Mosewich et al., 2013). Only one study was awarded a 'moderate' quality rating (Mosewich et al., 2013), while the remaining studies received a 'weak' rating. One consistent weakness was the self-selecting and homogeneous samples, which increased the risk of selection bias and limited external validity. There were also no attempts to blind participants and outcome assessors, and the self-report methods of assessing practice frequency in some studies (Albertson et al., 2015; Matos et al., 2017; Mosewich et al., 2013) may have increased the risk of detection and performance biases.

All non-controlled studies reported significant gains in self-compassion from baseline to post-test. However, the absence of an active treatment condition precludes definitive conclusions

about specific intervention effects. In addition, the majority of these studies had a small sample size (Beaumont et al., 2016; Gilbert & Irons, 2004; Held et al., 2018; Laidlaw et al., 2014; Naismith et al., 2017). Consequently, it is difficult to make any statement about the significance of the results beyond the sample included. Increasing sample sizes would be beneficial in terms of rigour as it would augment the power of the study, reduce the margin of error, and increase generalisability of the findings.

1.4.1.2 Impact on self-criticism

The findings across the studies were, again, somewhat mixed for self-criticism. Some controlled studies reported significant improvements compared to either a waitlist or an active control condition (Dundas et al., 2017; Kamboj et al., 2015; Matos et al., 2017; Mosewich et al., 2013). Others reported outcomes that were not superior to either the active control or waitlist condition (Ascone et al., 2017; Kamboj et al., 2018; Kelman et al., 2018; Rycroft, 2018), whereas one study produced no significant improvements in both the intervention and control conditions (Tsivos, 2015). The non-controlled studies (Beaumont et al., 2016; Gilbert & Irons, 2004; Held et al., 2018; Laidlaw et al., 2014; McEwan & Gilbert, 2015; Mitchell et al., 2018; Naismith et al., 2017) reported a similar pattern of findings; however, specific intervention effects cannot be determined due to a lack of an active control condition. Compared with the overall self-compassion outcomes, it seems that the interventions were overall more effective in increasing self-compassion than reducing self-criticism. This is not surprising given that self-criticism can be deeply entrenched (Gilbert & Procter, 2006) and may, therefore, require a more intense and continuous self-compassionate responding to change. However, it should be noted that most of the studies which reported the least favourable outcomes for self-criticism had very small sample sizes (Ascone et al., 2017; Kamboj et al., 2018; Rycroft, 2016). Thus, there may not have been sufficient power to detect differences.

A closer look at the pattern of findings also revealed that the studies which reported the less positive outcomes for self-criticism included clinical samples (Ascone et al., 2017; Rycroft, 2018, Tsivos, 2015). These findings contrast with the pattern of self-compassion findings discussed earlier on, whereby outcomes did not seem to differ across clinical and non-clinical populations. One possibility for these contrasting findings could be imputed to the potentially higher prevalence of self-criticism in clinical samples given its transdiagnostic nature. Thus, it might take longer to properly assimilate self-compassion as a skill and for it to then generate noticeable effects on self-criticism.

Of note, some studies utilised measures of self-criticism that raise some important conceptual issues. For instance, the 'self-criticism' factor of the SCS (Kelly & Carter, 2015; Naismith et al., 2017) and the 'non-judgment' subscale of the FFMQ (Dundas et al., 2017) were used in separate studies to measure self-criticism. However, while the 'self-criticism' factor of the SCS comprises self-judgment, over-identification and isolation, the 'non-judgment' subscale of the FFMQ only captures self-judgment; thus, it is possible that these two measures could have been measuring different constructs. Furthermore, Neff (2015) argues against using the two-factor solution of the SCS for theoretical reasons. It is, therefore, imperative that these findings are interpreted with conspicuous caution.

1.4.1.3 Impact on shame

Another aim of this review was to evaluate the outcomes of the self-compassion interventions in relation to shame. Some of the RCTs reported significant improvements in various facets of shame compared to the waitlist condition (Albertson et al., 2015; Kelly & Waring, 2018; Matos et al., 2017; Tsivos et al., 2015). Others reported reductions in both state and shame-proneness that were not superior to the control conditions (Cândea & Szentágotai-Tătar, 2018; Johnson & O'Brien, 2013), whereas one study reported no differential improvements in shame across conditions (Toole & Craighead, 2016). Given that shame is associated with causal attributions that reflect a focus on an intractable and enduring sense of 'bad self' (Kim et al., 2011; Tracy & Robins, 2004), it is promising that some studies produced significant outcomes, notwithstanding the brevity of the interventions.

Of note, the pre-test post-test studies (Held et al., 2018; Mitchell et al., 2018) reported better outcomes for internal than external shame. It is possible that the focus of the self-compassion training on helping individuals find compassion for and reduce blaming themselves might have influenced internal shame more strongly. Another possibility is that external shame might be more difficult to shift because it reflects evolutionary anxieties related to the possibility of social rejection (Lewis, 1992). However, the reasons for these differences in findings remain unclear.

1.4.1.4 Impact on guilt

Only two RCTs (Held & Owens, 2015; Johnson & O'Brien, 2013) and one pre-test post-test study (Held et al., 2018) examined the intervention effects on guilt. As guilt may be viewed less negatively than shame due to its association with prosocial and reparative behaviours (Tangney &

Dearing, 2002), it is possible that guilt may have been overlooked by researchers, notwithstanding its potentially maladaptive side (Tracey, Robins, & Tangney, 2007). The two RCTs reported no significant differential improvements in either state or guilt-proneness (Johnson & O'Brien, 2013) and trauma-related guilt (Held & Owens, 2015) across the intervention and active control conditions. In the case of the pre-test post-test study (Held et al., 2018), participants exhibited significant reductions in trauma-related guilt; however, again, the lack of an active control condition precludes firm conclusions about the specific effects of the intervention.

Although these studies did not produce any robust evidence of improvements over and beyond other interventions, there is equally no strong evidence of ineffectiveness. From a clinical standpoint, it is also encouraging that the interventions were able to produce reductions in trauma-related guilt in two of the studies, thus suggesting that BSCIs may be a feasible alternative for individuals who are plagued by trauma-related guilt.

1.4.2 Comparison between intervention types

The reviewed studies delivered various types of interventions based on either Neff's definition of self-compassion or Gilbert's CFT approach, or a combination of both. Overall, the studies produced comparable outcomes in regard to self-compassion. This might reflect the extent to which the different theoretical models complement each other in terms of working towards similar aims.

In regard to self-criticism, the CFI interventions seemed to produce the least favourable outcomes. Half of the CFI studies reported no significant improvements in self-criticism (Falconer et al., 2016; Gilbert & Irons, 2004; Naismith et al., 2017; Tsivos, 2015) and in the case of the RCTs, most studies reported improvements which were not superior to the control conditions (Ascone et al., 2017; Kamboj et al., 2018; Tsivos, 2015). CFI studies of clinical samples (Falconer et al., 2016; Gilbert & Irons, 2004; Naismith et al., 2017; Tsivos, 2015) also seemed to report less favourable outcomes compared with non-clinical samples (Kamboj et al., 2015; Kamboj et al., 2018; McEwan & Gilbert, 2015). One possibility that might explain these outcome differences is related to attachment insecurity. Attachment insecurities are prevalent in clinical populations (Mikulincer & Shaver, 2007) and, because CFI stimulates attachment-based emotions related to loss and sadness (Bowlby, 1980), clinical populations may be more likely to find CFI difficult to engage with. Another possibility is that clinical samples are more likely to experience higher emotional distress, which may inhibit successful engagement with imagery-based practice (Pauley & McPherson, 2010).

Interestingly, however, the CFI studies produced comparable self-compassion outcomes across clinical and non-clinical samples as well as in comparison with studies of other intervention types. One possibility for these contrasting outcomes is that the clinical samples could have been biased to report higher self-compassion due to demand characteristics. Another explanation is that mere exposure to self-compassionate written or audio material might have motivated participants to respond more self-compassionately. Then again, it should be noted that the sample sizes across the CFI studies were considerably small. Thus, the current findings should be interpreted with caution and ideally re-evaluated in a larger sample size.

Studies of similar intervention types that measured shame produced mixed findings, with some studies reporting more promising outcomes than others. However, while the reasons behind these differences remain unclear, the available evidence does not suggest that certain intervention types produced better outcomes than others. In regard to guilt, the multicomponent individual (Held & Owens, 2015) and group-based interventions (Held et al., 2018) seemed to exhibit better outcomes than the writing tasks (Johnson & O'Brien, 2013). However, these observations are based on very few studies with rather significant attrition rates. Thus, it is not possible to draw any definitive conclusions.

Of note, half of the studies in the current review included a psychoeducational component within their intervention, which largely comprised of theoretical teaching on self-compassion and compassion-related topics (Beaumont et al., 2016; Dundas et al., 2017; Gilbert & Irons, 2004; Held et al., 2018; ; Kelly & Carter, 2015; Kelman et al., 2018; Laidlaw et al., 2014; Matos et al., 2017; Mitchell et al., 2018; Mosewich et al., 2013; Rycroft, 2016; Tsivos, 2015). The review's findings indicated no added beneficial effect of incorporating psychoeducation on self-compassion, self-criticism, shame, and guilt outcomes. However, given that these findings are exclusively based on statistical data, it is not possible to ascertain whether adding psychoeducation to the applied elements of the interventions may help to optimise participants' overall experience of the brief intervention, thus highlighting the need for more qualitative research in this area.

Significantly, the findings revealed important differences in attrition rates across intervention types. The multicomponent group-based interventions had the highest average rate of attrition compared to the other intervention types. It is possible that attrition in the group-based interventions could have been due to difficulties arising from group participation. Given that this type of intervention required significant effort from participants in terms of needing to physically attend the sessions, it is also possible that the perceived functionality of the intervention and interactivity may not have been sufficient to engage participants and support

adherence. Interestingly, despite producing the least favourable self-criticism outcomes and representing the highest attrition rate across the studies (68.9%; Naismith et al., 2017), the CFI studies reported the lowest average attrition rate. It should be stated, however, that three of the CFI studies (Ascone et al., 2017; Kamboj et al., 2015; Kamboj et al., 2018) were single-session studies which are likely to have low attrition. Then again, even after eliminating the single-session trials, the CFI studies represented a comparatively low attrition rate across the studies, suggesting CFI's tolerability as an intervention in both clinical and non-clinical samples. In light of earlier discussion regarding CFI's poor self-criticism outcomes and potential issues around engagement with imagery-based practice, this is a rather ambiguous finding as one would expect higher attrition rates among participants who might not be gaining much clinical benefit from the intervention. It is possible that, despite any challenges, participants might have still felt that the intervention was benefitting them in some way and therefore, felt motivated enough to persist with the intervention.

1.4.3 Comparison between clinician-supported and unsupported interventions

Collectively, the clinician-supported intervention studies (Ascone et al., 2017; Beaumont et al., 2016; Cândea & Szentágotai-Tătar, 2018; Dundas et al., 2017; Falconer et al., 2016; Gilbert & Irons, 2004; Held et al., 2018; Kamboj et al., 2005; Kamboj et al., 2018; Laidlaw et al., 2014; Matos et al., 2017; Tsivos et al., 2015) produced self-compassion outcomes that were comparable to the unsupported studies (Albertson et al., 2015; Held & Owens, 2015; Johnson & O'Brien, 2013; Kelly & Carter, 2015; Kelly & Waring, 2018; Kelman et al., 2018; McEwan & Gilbert, 2015; Mitchell et al., 2018; Mosewich et al., 2013; Naismith et al., 2017; Rycroft, 2016; Toole & Craighead, 2016) across both controlled and non-controlled studies. Nevertheless, a different pattern of outcomes seemed to emerge with respect to self-criticism. Of the six supported controlled studies (Ascone et al., 2917; Dundas et al., 2017; Kamboj et al., 2015; Kamboj et al., 2018; Matos et al., 2017; Tsivos, 2015), three reported significant improvements in self-criticism in the self-compassion condition compared to the control conditions (Dundas et al., 2017; Kamboj et al., 2015; Matos et al., 2017). In contrast, of the four unsupported controlled studies (Kelly et al., 2015; Kelman et al., 2018; Mosewich et al., 2013; Rycroft, 2016), only one trial (Mosewich et al., 2013) reported significant improvements in self-criticism compared to the control condition. However, it should be stated that the majority of supported RCTs lacked an active treatment condition, as opposed to the non-supported RCTs, most of which included an active treatment condition. Therefore, it is not possible to make definitive conclusions about the comparative merits of supported BSCIs. Of the six pre-test post-test studies that measured self-criticism (Beaumont et al., 2016; Gilbert &

Irons, 2004; Held et al., 2018; Laidlaw et al., 2014; McEwan & Gilbert, 2015; Mitchell et al., 2018; Naismith et al., 2017), there was no evidence of any added benefits of incorporating support.

While considering the methodological limitations of the reviewed studies, the available evidence seems to indicate that there is no strong evidence to suggest that clinician-supported interventions might be more likely to generate better outcomes compared to unsupported interventions, and vice versa. Furthermore, overall outcomes across the dependent variables did not seem to be related to whether support was offered throughout the intervention or only at the start of the intervention; nor did support seem to influence attrition rates across the studies. However, since it was not possible to review the evidence meta-analytically, these findings need to be treated tentatively. Meta-analyses of supported and unsupported psychological interventions for depression (Andersson & Cuijpers, 2009; Richards & Richardson, 2012; Spek et al., 2007) have, in fact, reported greater retention and superior effects for supported interventions. Then again, these meta-analyses included studies of both brief and longer interventions, thus it is possible that clinician support might become more pertinent to the outcomes of longer interventions.

1.4.4 Comparison between interventions of differing duration

Overall, it seemed that there was a trending pattern of improvement in self-compassion outcomes that corresponded with increased intervention duration across the controlled studies. The controlled studies which yielded the most promising self-compassion outcomes included interventions that were undertaken over either a two- or three-week period (Albertson et al., 2015; Dundas et al., 2017; Kelly & Carter, 2015; Kelly & Waring, 2018; Matos et al., 2017). It is possible that interventions briefer than two weeks might be perceived as less credible and, therefore, people might feel less invested in the intervention. Conversely, adherence and motivation might start to taper off after three weeks. The available evidence suggests that the highest attrition rates were reported in the 1-week and 4-week intervention studies (Held & Owens, 2018; Naismith et al., 2017), thus lending support to the hypothesis that two- and three-week long interventions might lead to better engagement and self-compassion outcomes. However, once again, the methodological weaknesses across these studies need to be considered when interpreting these results, and it is likely that other factors might have influenced this pattern of outcomes. In the context of the non-controlled studies, intervention duration did not seem to have any differential impact on self-compassion outcomes. However, none of these

studies included an active control condition. Thus, it is not possible to eliminate the alternative hypothesis that the findings are due to non-specific effects.

In regard to self-criticism, there were conflicting findings across the controlled studies. Studies of differing durations reported significant differential improvements in the self-compassion condition, whereas others saw improvements that were not significantly different than the control groups. Conversely, a somewhat unequivocal pattern of findings emerged for the non-controlled studies, with the relative majority of significant outcomes falling into the 4-week duration category (Laidlaw et al., 2014; McEwan & Gilbert, 2015). Studies of longer duration also seemed to produce better shame- and guilt-related outcomes in both clinical and non-clinical samples (Albertson et al., 2015; Held & Owens, 2015; Held et al., 2018). These findings seem to suggest that longer interventions may be required to generate observable changes in self-criticism, shame, and guilt. Then again, because the therapeutic effects of self-compassion improvements may become more manifest over time, it is possible that the briefer interventions may still be effective at generating reductions in self-criticism, shame, and guilt; however, this is not possible to ascertain in the absence of follow-ups.

1.4.5 Comparison between different modes of intervention delivery

The current review also aimed to evaluate whether there were any differences in the outcomes of studies using different modes of intervention delivery. The online-based studies (Albertson et al., 2015; Johnson & O'Brien, 2013; Kelly & Carter, 2015; Kelly & Waring, 2018; Kelman et al., 2018; McEwan & Gilbert, 2015; Mitchell et al., 2018; Toole & Craighead, 2016) and the group-based studies (Beaumont et al.,2016; Dundas et al., 2017; Gilbert & Irons, 2004; Held et al., 2018; Laidlaw et al., 2014) seemed to exhibit comparable self-compassion and self-criticism outcomes which, taken as a whole, were also relatively better than the outcomes reported in studies utilising other modes of delivery (i.e. self-help, lab-based, home-based, virtual reality, or a combination of lab-based and online/self-help methods). Overall, these findings are encouraging in terms of optimising the reach and delivery of self-compassion interventions given that delivering interventions using an online format seem to provide an equally effective, albeit more cost-effective, convenient, and efficient provision of care than face-to-face delivery formats (Andersson & Titov, 2014; Cuijpers et al., 2009), such as group-based interventions. However, in contrast to the online studies, the majority of the group-based studies in the current review comprised non-RCTs and therefore, more group-based RCTs need to be conducted before firmer conclusions about the comparable merits of these modes of delivery can be made.

Most of the self-compassion interventions which aimed to reduce shame were delivered in an online format (Albertson et al., 2015; Johnson & O'Brien, 2013; Kelly & Waring, 2018; Mitchell et al., 2018; Toole & Craighead, 2016). In regard to guilt, the only three studies which measured guilt were delivered in an online, group, and self-help format, respectively (Johnson & O'Brien, 2013; Held & Owens, 2015; Held et al., 2018). Interestingly, in contrast to the impact on self-compassion outcomes, it seems that the online interventions produced fewer positive outcomes in terms of reducing shame and guilt. Given that shame and guilt are usually evoked during interpersonal interactions (Haidt, 2003), it is possible that these emotions may be more amenable to change within an interpersonal context of intervention delivery. Nonetheless, it needs to be pointed out that there was a highly uneven distribution of studies that measured shame and guilt across the various modes of delivery, thus limiting the extent to which meaningful comparisons can be made between studies employing different modes of delivery.

1.4.6 Sustainability of results

Of the reviewed studies, only four RCTs (Albertson et al., 2015; Dundas et al., 2017; Johnson & O'Brien, 2013; Mosewich et al., 2013) and three pre-test post-test studies (Gilbert & Irons, 2004; Laidlaw et al., 2014; McEwan & Gilbert, 2015) included a follow-up, which invariably limits the conclusions that could be drawn from the available evidence. All seven studies included in this category reported that improvements were maintained at follow-up irrespective of length of follow-up and intervention type. These findings align with earlier reports of longer self-compassion interventions, such as the MSC training program, which established that gains in self-compassion and wellbeing were maintained at six-month and one-year follow-up (Neff & Germer, 2013).

However, while the lasting effects of changes in the current studies even after a brief intervention are somewhat encouraging, there are several methodological issues that need consideration. First, the intervention duration in most of the seven studies ranged between three and four weeks (Albertson et al., 2015; Dundas et al., 2017; Gilbert & Irons, 2004; Laidlaw et al., 2014; McEwan & Gilbert, 2015) and, therefore, it is not possible to generalise these findings to studies of briefer interventions. It is also possible that the relative lack of follow-up in studies of briefer interventions may reflect the researchers' assumption that the effect of very brief interventions would be relatively short-lived. Second, the studies which included a follow-up were, for the most part, studies of non-clinical samples (Albertson et al., 2015; Dundas et al., 2017; Johnson & O'Brien, 2013; Laidlaw et al., 2014; McEwan & Gilbert, 2015; Mosewich et al.,

2013), which raises the question of whether these outcomes would generalise to clinical samples. Third, apart from one RCT (Mosewich et al., 2013), none of the follow-up data in the other RCTs was controlled for. Therefore, participants may have accessed other treatments during follow-up and consequently impacted the results. Furthermore, given the lack of a control group, it is not possible to determine whether the follow-up outcomes in the non-controlled studies reflected specific durable effects of the self-compassion intervention or the influence of extraneous factors. Fourth, only two studies (Albertson et al., 2015; Johnson & O'Brien, 2013) assessed shame or guilt and, therefore, it is not possible to ascertain whether the brief interventions would have had any lasting impact on these outcome variables. Given the enduring and deleterious nature of shame and maladaptive guilt (Tangney et al., 2007), it would seem appropriate that efforts should be made to evaluate the longer-term impact of brief interventions on these variables.

1.4.7 Strengths and limitations of the review

The review has several strengths such as its breadth of research questions, and its use of explicit search strategies based on a comprehensive multi-database search, and detailed and clearly stated criteria for selecting suitable studies. The use of broad search combinations may have also reduced the risk of relevant literature being missed, whereas the inclusion of unpublished studies (Rycroft, 2016; Tsivos, 2015) may have helped to minimise publication bias. A number of randomly chosen articles excluded by the main researcher following screening of titles and abstracts were also reviewed independently by another trainee which may have reduced sampling bias. The thorough methodological assessment of the included studies using the EPHPP quality assessment tool was another strength of this review given the tool's robust psychometric properties (Armijo-Olivo et al., 2012). Furthermore, quality assessment of all included studies was undertaken by another trainee which enhanced the reliability and validity of the assessment outcomes. Finally, to the author's knowledge, this is the first literature review to be conducted on the impact of BSCIs on self-compassion, self-criticism, shame, and guilt.

This review has, nevertheless, some limitations. First, even though the systematic literature search was fairly extensive, it does not rule out the possibility that studies could have been overlooked or published in non-English language journals, which may have caused a selection bias. The search process would have benefitted from having a second researcher complete the process to ensure that the process is transparent and replicable. Second, qualitative studies were not included but might have provided useful qualitative data on the acceptability and feasibility of BSCIs. Third, the nature of the included studies precluded a meta-analysis of the data, which

would have increased the sample size and thus the power to study effects of interest (Borenstein, Hedges, Higgin, & Rothstein, 2009). Fourth, the evidence suffered from critical methodological limitations including a lack of non-intervention or active treatment comparisons; small, self-selecting and homogeneous samples; no blinding procedures; diversity in outcome measures; low retention rates; lack of formal manipulation checks; and unreliable methods of tracking practice frequency. Furthermore, despite the low retention rates reported in a third of the studies, no analysis of any differences between dropouts and completers was made, while intention-to-treat analyses were sporadic. Finally, the multicomponent trials included elements that were not exclusively related to self-compassion. Thus, it is difficult to make definitive claims about the specific impact of the self-compassion interventions on outcomes. All of these limitations make the conclusions of this review tentative. Accordingly, further higher quality research is needed to overcome these limitations and be able to draw firmer conclusions from study outcomes.

1.4.8 Implications for clinical practice

Self-criticism, shame, and guilt have been described as transdiagnostic processes and can accentuate and maintain a range of mental health disorders (Clark, 2012; Vaillant, 1997). The findings from the reviewed studies were generally mixed, and there is no robust evidence to support the effectiveness of BSCIs. However, the notable methodological weaknesses across the studies indicate that the studies do not necessarily reflect the actual relationship between the intervention and the outcome variables. Furthermore, the differences between statistical and clinical significance should not be ignored; for instance, outcome measures may not necessarily detect clinically significant results. It is, therefore, appropriate to make suggestions regarding clinical practice.

Using the current evidence, it seems that the interventions generated the 'best' outcomes for self-compassion, although there is also some evidence of a positive effect on the other variables. Results also suggest that CFI interventions may be particularly difficult for those with attachment insecurities. Previous research has indicated that these individuals might benefit more from 'self-self' than 'other-self' imagery (Gee, 2012); therefore, clinicians need to be aware of the effects that different CFI tasks may have on individuals who have insecure attachment experiences. Furthermore, on the subject of intervention types, the multicomponent group interventions were represented by the highest average attrition rate. These results may point towards a need to ensure a respectable balance between delivering the psychoeducation and self-compassion skills and being mindful of group dynamics and engagement issues. In addition,

there is no indication of any significant differences in the studies of clinician-supported and unsupported interventions in relation to the outcome variables, thus providing some evidence to suggest that unsupervised practice is feasible.

Although further research with robust methodology is needed and would add weight to the current evidence, the lack of strong evidence of ineffectiveness in the current review suggests that it would be appropriate that relevant stakeholders considered offering this approach as an alternative option. Evidence suggests that nine out of ten adults with mental health problems in the UK are supported in primary care (NHS Digital, 2018). Large demands on services warrant a model of efficient and effective support and, therefore, the incorporation of BSCIs within established psychological therapy initiatives such as the Improving Access to Psychological Therapies[15] programme might be worth considering.

1.4.9 Conclusions and recommendations for future research

Overall, the current review has provided some indication that BSCIs may help to cultivate self-compassion and reduce self-criticism, shame, and maladaptive guilt to some degree. However, the evidence was limited, and of low quality, thus caution should be exercised when interpreting the findings. In this regard, several key avenues for future research are suggested. More robustly designed empirical research with larger clinical and non-clinical samples is required to replicate and expand upon these findings. Given that the benefits of BSCIs may be observed over time, more follow-up studies are needed. It would also be beneficial to include more men and older people (> 65 years) in future studies as these are underrepresented in the current research literature and to identify who would benefit most from enhanced self-compassion. Research suggests that women may exhibit higher self-criticism and shame-proneness than men (DeVore & Pritchard, 2013; Galhardo, Cunha, & Pinto-Gouveia, 2013); thus, future research should account for these potential differences. Given the widely varying attrition rates reported, qualitative research should also be undertaken on the broad acceptability of BSCIs from the perspective of both clinical and non-clinical groups. Future studies should also strictly adhere to self-compassion focused training to discern the extent to which the self-compassion interventions uniquely contribute to clinically significant outcomes, as well as continue to compare the unique impact of different types of intervention and delivery formats. This would help to ascertain not

[15] The *Improving Access to Psychological Therapies (IAPT)* programme began in 2008 in England and provides evidence-based treatments for individuals with mild to moderate anxiety and depressive disorders in accordance to the NICE guidelines.

only which intervention types add more value, but which medium of delivery is most beneficial within short-term therapeutic contexts. Analysing the association of sub-components of self-compassion with the study outcomes would also provide insight into which aspects of self-compassion are most closely related to effectiveness and help to design more effective interventions. In addition, the review has highlighted some theoretical and practical issues related to outcome measurement, suggesting a need for a more consistent approach to outcome measurement and more reliable methods of evaluating adherence.

In conclusion, despite the numerous limitations of this review, there is some indication that the BSCIs may offer an accessible and feasible therapeutic alternative for clinical and non-clinical groups experiencing high self-criticism, shame, and guilt. As compassion-focused approaches become more widely disseminated and growing numbers of clinicians and researchers develop understanding and skills in its methods and philosophy, increasing outcome research that uses more rigorous methods is required to evaluate and optimise the reach and delivery of brief interventions.

Chapter 2 Empirical paper: Comparative effects of brief self-compassion and mindfulness meditation training on body image concerns in older adults

2.1 Introduction

2.1.1 Body image and body dissatisfaction

Body image is a multidimensional construct that incorporates subjective attitudinal and perceptual experiences about one's body (Cash & Pruzinsky, 1990). Central to the attitudinal dimension of body image is the person's evaluations of and satisfaction or dissatisfaction with their physical characteristics (Cash, 1994).While the prevalence of body dissatisfaction is difficult to quantify due to inconsistencies relating to the definition and measurement of the concept across studies (Cash, 2002b), there is evidence suggesting that a high proportion of individuals struggle with body image concerns. For instance, in a recent body image survey conducted in the UK by the Mental Health Foundation (2019) of 4,505 adults, it was found that 20% (15% of men and 25% of women) felt shame, 34% (25% of men and 43% of women) felt down or low, and 19% (12% of men and 26% of women) felt disgusted in the previous year because of their body image. Significantly, these findings suggest higher numbers compared to the 2013 British Social Attitudes Survey, where 5% of men and 10% of women reported being dissatisfied with their appearance (Government Equalities Office, 2014).

A core element of body dissatisfaction is the rigid, critical, and negative cognitions regarding the individual and their body image (Stewart, 2004). Body dissatisfaction has been linked to various negative consequences for both men and women including depression, anxiety, eating disorders, lower self-esteem, interpersonal difficulties, decreased physical activity and lower quality of life (Corning, Krumm, & Smitham, 2006; Jarry & Berardi, 2004; Neumark-Sztainer et al., 2006; Strachan & Cash, 2002; Tiggemann & Lynch, 2001).

2.1.2 Body dissatisfaction, actual-ideal body image discrepancies and self-discrepancy theory

In the context of body image, attention is generally paid to how one sees one's body (actual/own) and how one would ideally like their body to be (ideal/own), with the latter reflecting an internalisation of sociocultural body-related ideals. For many people, these ideals emphasise the desirability for thinness for women (Wiseman, Gray, Mosimann, & Ahrens, 1992), and a lean and muscular body for men (Pope, Phillips, & Olivardia, 2000).

Self-discrepancy theory (SDT; Higgins, 1987) provides a theoretical framework for conceptualising the relationship between actual-ideal body image discrepancies and body dissatisfaction. SDT proposes that there are three domains of self. The 'actual' self reflects the individual's perceptions of his or her own attributes or characteristics; the 'ideal' self refers to the attributes that the individual wishes to possess or that the individual aspires to have; and the 'ought' self reflects the attributes that the individual believes she or he has an obligation to possess. SDT also proposes that these selves can be conceptualised from one's own perspective, as well as from the perspective of significant others.

According to SDT, discrepancies between the actual and ideal selves are likely to generate dejection-related emotions, such as dissatisfaction, because one's hopes and wishes have not been met. There is, in fact, empirical evidence that discrepancies between how women see themselves and how they would ideally like to be generate body dissatisfaction (Heron & Smyth, 2013). In the case of men, studies assessing self-discrepancies with respect to muscularity tend to find that men select an ideal body type that is more muscular than their actual body. Importantly, just as with women, a higher level of self-discrepancy among men tends to be associated with negative emotional and behavioural outcomes, including body dissatisfaction (Pope et al., 2000).

2.1.3 Body dissatisfaction in older adulthood

While most of the extant body image research has focused on young people (Clarke & Korotchenko, 2011), there are numerous reasons for negative body image to persist in later life. Normative age-related physical changes can contribute to body dissatisfaction as people's bodies become more discrepant from Western sociocultural ideals of youthfulness, thinness, and muscularity (Bordo, 1993; Lamb, Jackson, Cassiday, & Priest, 1993; Lien, Pope & Gray 2001, as cited in Baker & Gringart, 2012). There is substantial evidence to suggest that body dissatisfaction in women often remains stable across the lifespan (Lewis & Cachelin, 2001; Pruis & Janowsky,

2010; Tiggemann, 2004; Tiggemann & Lynch, 2001; Webster & Tiggemann, 2003). Other research studies have found significant body weight and shape preoccupation in older women who had normal weight (Allaz, Bernstein, Rouget, Archinard, & Morabia, 1998), and that societal influences had predicted body image concerns in older adult women (Pruis & Janowski, 2010). This suggested that societal influence remains a key consideration in the body image of older adults. Furthermore, older women are still susceptible to eating disorders, including a continuation of those who have suffered their entire lives, as well as late-onset eating disorders (Mangweth-Matzek et al., 2006).

However, other researchers have found that one's interest in appearance declined with age (Cash, Winstead, & Janda, 1986; Pliner, Chaiken, & Flett, 1990), and older adults became more accepting of age-related changes in appearance (Thompson et al., 1998). In a body image survey undertaken on 2,002 Swedes, Öberg and Tornstam (1999) found that women's body image significantly improved with age. Reboussin et al. (2000) also found that age was positively related to body satisfaction. Furthermore, there is some evidence to suggest that, compared to younger women, older women may experience less anxiety regarding their appearance (Tiggemann & Lynch, 2001) and have a lower drive for thinness and less restricted eating (Lewis & Cachelin, 2001).

Importantly, however, the above studies employed body image measures that focused on appearance and neglected other aspects that can be important to the body image of older adults, such as body function, health, and fitness. For instance. Paxton and Phythian (1999) found that the way older women viewed their bodies was significantly influenced by the way they evaluated their health, and that physical fitness was a significant determinant of how older men viewed their bodies. Reboussin et al. (2000) also found a clear distinction between body function and appearance for older adults and concluded that they may value the former more than the latter. Similarly, in their review of the body image experiences of Western seniors, Roy and Payette (2012) found that, while seniors shared a similar body ideal with Western younger age categories, they attributed more importance to body competence than physical appearance. Furthermore, in their study of Australian men and women aged 68 to 89 years, Baker and Gringart (2009) found that loss of functional abilities and health concerns were important aspects that contributed to the evaluation of the body. Significantly, there is evidence that poor body image can affect older adults' emotional, psychological, and physical wellbeing (Baker, 2010; Marshall, Lengyel, & Menec, 2014), thereby highlighting the importance of developing ways of addressing this issue.

2.1.4 Mechanisms of change – how can self-compassion and mindfulness improve body image concerns?

In recent years, there has been growing interest in the role of self-compassion and mindfulness in improving body image. Neff (2003b) conceptualises self-compassion as comprising three distinct, yet mutually enhancing elements, namely self-kindness, common humanity, and mindfulness. Self-kindness involves treating oneself kindly in times of adversity, rather than being self-critical. Common humanity recognises that painful experiences are part of our shared humanity. Mindfulness involves taking a non-judgmental and balanced approach to difficult thoughts and emotions, rather than over-identifying with them. Although mindfulness is a core component of self-compassion, these two constructs are fundamentally different. Whereas mindfulness focuses on present moment awareness, and on responding non-judgmentally to thoughts and feelings (Kabat-Zinn, 2003), self-compassion entails the active component of engaging in self-compassionate action (Germer, 2009).

From a theoretical standpoint, self-compassion and mindfulness have the potential to improve body dissatisfaction for various reasons. Self-kindness directly targets negative self-evaluation, which is central to body dissatisfaction, thus reducing the impact of self-criticism and increasing acceptance of one's body. Common humanity considers one's physical appearance from an inclusive perspective which alleviates body dissatisfaction and any associated shame. Mindfulness should facilitate a more balanced relationship with the distressing thoughts and emotions related to one's body, as opposed to obsessing about disliked body features, thus promoting flexibility through the decrease of automatic responses contributing to distress (Albertson, Neff, & Dill-Shackleford, 2015; Baer, 2003). Self-compassion also fosters beliefs in which self-worth is intrinsic, which may help to lessen the valence of actual-ideal body image discrepancies and subsequently improve body dissatisfaction (Albertson et al., 2015). There is, in fact, clear empirical evidence of inverse associations between self-compassion, mindfulness, and body image concerns, including body dissatisfaction and actual-ideal self-discrepancies (Daye, Webb, & Jafari, 2014; Ferreira, Pinto-Gouveia, & Duarte, 2013; Mosewich et al., 2011; Przezdziecki et al., 2012; Tylka, Russell, & Neal, 2015; Wasylkiw, MacKinnon, & MacLellan, 2012).

2.1.5 Self-compassion and mindfulness interventions for body image concerns

Despite clear evidence of an association between self-compassion, mindfulness, and body image concerns, very few studies have examined the role of self-compassion and mindfulness interventions in ameliorating body image. Albertson et al. (2015) demonstrated that a 3-week

online self-compassion training was effective in increasing self-compassion and reducing body dissatisfaction in a sample of 228 women aged 18 to 60 years. Given the high dropout rate of 52% in Albertson et al.'s trial, Toole and Craighead (2017) replicated the study using a 1-week intervention with a sample of 87 female college students. However, no significant improvements were found in either self-compassion or body dissatisfaction, presumably owing to the shorter duration of the trial and smaller sample size.

In regard to mindfulness interventions, two studies showed that brief training in mindfulness-based acceptance was successful in producing in-session improvements in body dissatisfaction in female university students (Atkinson & Wade, 2012; Wade, George, & Atkinson, 2009). Adams et al. (2013) also found that participants listening to a mindfulness meditation podcast whilst trying on a bathing suit generated less body dissatisfaction compared to those who were instructed to remain in silence. Furthermore, Delinsky and Wilson (2006) found that adding mindfulness training to mirror exposure led to significantly greater improvements in body satisfaction and weight and shape concerns, compared with a non-directive body image treatment control group. Therefore, brief self-compassion and mindfulness interventions may hold promise as a potentially effective intervention to address body image concerns.

2.1.6 Rationale and aims of the current research

Despite the on-going rapid increase in ageing populations in both developed and developing countries (United Nations, 2013), and the literature suggesting that body image concerns are significant in older adulthood and impact on psychological wellbeing (Baker & Gringart, 2009), no research to date (to the author's knowledge) has examined body image interventions in older adults. As discussed above, brief self-compassion and mindfulness interventions may hold promise as potentially effective interventions to address body image concerns, and may offer greater scalability, cost-effectiveness, flexibility, and convenience compared to the traditional 8-week Mindful Self-Compassion (Neff & Germer, 2013) and Mindfulness-Based Stress Reduction (Kabat-Zinn, 1982) programs.

In order to build on the existing literature, the main aim of the current study was to compare the impact of a brief, self-directed self-compassion and mindfulness training in reducing actual-ideal body image discrepancies and improving body image satisfaction in a sample of older women and men and using a non-meditation control group (relaxation training) as a comparison. Given that the study has sought to recruit a non-clinical sample of older adults, it also assessed whether a negative body image induction task was effective in activating body dissatisfaction

before and after the training, and whether the experimental manipulations offered greater protection against the negative effects of the induction task.

2.1.7 Research hypotheses

Based on the research aims and the available literature, three main hypotheses were tested as follows:

H_1: Participants in the experimental groups will report greater improvements in self-compassion, mindfulness, trait body image satisfaction, and actual-ideal body image discrepancies compared to the non-meditation control group, with those receiving the self-compassion training showing the greatest improvements in self-compassion and the body image variables over the course of the intervention.

H_2: Prior to training, participants in all groups will report lower state body image satisfaction following the negative body image induction task.

H_3: Following training, participants in the experimental groups will experience lower state body dissatisfaction compared to those in the non-meditation control group following the negative body image induction task, with those in the self-compassion group reporting the lowest state body dissatisfaction.

2.2 Method

2.2.1 Design

The study employed a randomised controlled design with one between-subjects factor (group) and one within-subjects factor (time). The between-subjects factor had three levels: self-compassion, mindfulness, and non-meditation control. The within-subjects factor had two levels: pre-test and post-test. The dependent variables were self-compassion, mindfulness, actual-ideal body image discrepancies, and trait body image satisfaction. The negative body image induction task added a further independent variable, i.e. pre-induction and post-induction, and the dependent variable was state body image satisfaction.

2.2.2 Participants and recruitment

The current study aimed to recruit a minimum of 126 participants, based on power calculations using G*Power (Faul, Erdfelder, Buchner, & Lang, 2009) that showed a minimum of 21 participants per group were required to achieve a power set at the conventional level of 0.8. (p = .05) in a mixed-model ANOVA, and assuming an intermediate effect size (f = .25) between the three groups and an estimated correlation among repeated measures of .80. It was decided to recruit twice the required sample as an attrition rate of roughly 50% was expected based on a similar study by Albertson et al. (2015). Inclusion and exclusion criteria are displayed in Table 3.

Table 3. *Inclusion and exclusion criteria*

Inclusion criteria	**Exclusion criteria**
▪ Aged ≥ 65 years; ▪ Be able to read and write in English; ▪ Have access to an audio device (e.g. CD player, mp3 player) if opting for the paper version of the study; ▪ Have Internet access if opting for the online version of the study; ▪ Be able to practice the brief intervention regularly for a continuous period of two weeks.	▪ Current or previous history of an eating disorder.

Prospective participants were recruited from the University's older adults' research recruitment database (Psyweb), online adverts as well as adverts in the community, by contacting organisations known to be accessed by older adults (e.g., U3A and Age UK), and by word-of-mouth connections. Participants who completed the study were offered a chance to enter into a prize draw as compensation for their time and participation in the study.

An initial pool of 168 participants enrolled in the online study. An additional two participants requested a paper version of the study; however, neither of these participants returned their questionnaires for unknown reasons. Of the 168 participants, 103 participants were randomly allocated to a group and completed the study (37 in the self-compassion group, 34

in the mindfulness group, and 32 in the control group; see Table 8 for demographic details). Of the participants who did not complete the study, 5 participants signed the online consent form but did not proceed any further with the study, whereas 60 participants (17 from the self-compassion group, 21 from the mindfulness group, 22 from the control group) did not complete the post-test measures. Reasons for dropping out of the study were communicated to the researcher via email and included finding the study time-consuming, technical issues, finding the podcasts repetitive, unexpected caring commitments, health-related issues, or for unstated reasons (see Table 4).

Table 4. Number and percentage of participant dropouts by dropout reason for each group

	Self-compassion (*N* = 17)	Mindfulness (*N* = 21)	Control (*N* = 22)
Time-consuming	2 (11.8%)	1 (4.8%)	3 (13.6%)
Technical issues	3 (17.6%)	5 (23.8%)	5 (23.8%)
Repetitive	2 (11.8%)	2 (9.5%)	3 (13.6%)
Caring commitments	0	1 (4.8%)	1 (4.5%)
Health-related issues	2 (11.8%)	1 (4.8%)	0
Reason not stated	8 (47%)	11 (52.4%)	10 (45.5%)

Note: N = total number of participants who dropped out. Column percentages appear in parentheses next to group frequencies

2.2.3 Measures

Demographic data. Participants completed demographic questions to determine age, gender, and ethnicity. To ensure that participants in the three groups had equivalent meditation experience, the following question was administered: "Have you ever practised, or are you currently practising, any intervention to improve your mental wellbeing, such as meditation, yoga, tai chi?" If participants answered 'yes', they were then asked to specify the type of intervention they were currently practising or had practised previously.

Self-Compassion Scale (SCS; Neff, 2003a, b). The SCS is a 26-item measure assessing trait self-compassion (Appendix M) and includes six subscales: a 5-item self-judgment subscale, a 4-

item common humanity subscale, a 4-item isolation subscale, a 4-item mindfulness subscale[16], and a 4-item over-identification subscale. Items are rated on a scale ranging from 1 (almost never) to 5 (almost always). A total score is computed by adding all subscales together and creating a grand mean. The SCS has demonstrated good internal consistency (α = .77 to .78) and test–retest reliability (r = .80 to .93) across subtests (Neff, 2003a). In the current sample, the measure showed good internal consistency (α = .60 to .90 for the total score, and .63 to .90 for the subscales). Table 5 shows the Cronbach's alpha reliability coefficients for all dependent variables at each assessment time point for the three groups.

The Five Facets Mindfulness Questionnaire – Short Form (FFMQ-SF; Bohlmeijer, ten Klooster, Fledderus, Veehof, & Baer, 2011). The FFMQ-SF is designed to measure trait mindfulness and consists of 24 items representing five interrelated but distinct facets of mindfulness: observing, describing, acting with awareness, non-reactivity to inner experience, and non-judging of inner experience (Appendix N). Items are rated on a 5-point Likert scale (1 = never or very rarely true; 5 = very often or always true). Total scores are between 24 and 120 and higher scores indicate higher trait mindfulness. FFMQ-SF is a reliable and valid instrument for use in both clinical and non-clinical populations (Bohlmeijer et al., 2011). Recent evidence also supports the use of the FFMQ-SF with older adults (Brady, Kneebone, & Bailey, 2019). In the current sample, the measure demonstrated good internal consistency (α = .86 to .89 for the total score, and .66 to .92 for the subscales).

Body Image States Scale (BISS; Cash, Fleming, Alindogan, Steadman, & Whitehead, 2002). The BISS is a six-item measure of individuals' momentary evaluation and affect about various dimensions of their physical appearance (Appendix J). Items are rated on a 9-point Likert scale ranging from 'extremely satisfied' to 'extremely dissatisfied'. The BISS demonstrates acceptable test-retest reliability of r = .69 in university women. Convergent validity was demonstrated by a positive correlation between scores on the BISS and a trait measure of body satisfaction (r = .78), and negative correlations between BISS and measures of body dissatisfaction and BMI (r = -.28 to -.56; Cash et al., 2002). In the current sample, the measure demonstrated good internal consistency (α = .89 to .95).

[16] The items on this subscale are exclusively related to one's ability to maintain a balanced awareness of one's difficult experiences, rather than an awareness of general life experiences, as is the case with the Five Facets Mindfulness Questionnaire – Short Form (FFMQ-SF).

Body-Image Ideals Questionnaire (BIQ; Cash & Szymanski, 1995). The BIQ is a 22-item attitudinal body image assessment questionnaire assessing the self-perceived discrepancies from internalised ideals and the importance of these ideals for 11 physical characteristics (Appendix K). These items are rated first on a 4-point Likert scale of perceived incongruence to personal ideals for these characteristics and then rated on the importance of these ideals. For the first part, items are scored from "Exactly as I am" (0) to "Very unlike me" (3). For the second part, items are scored from "Not important" (0) to "Very important" (3). Scores can range from -3 to +9, with higher scores reflecting greater self-ideal discrepancy. Research has established the BIQ as an internally consistent (r = .81 for males; and r = .76 for females) and valid measure of body image discrepancies. It had good internal consistency in the current study (α = .72 - .85).

Body Image Scale for Older Adults (BIS-OA; Baker & Gringart, 2009). The BIS-OA is a self-report measure that comprises 19 items that measure body image satisfaction specific to older adults (Appendix L). The BIS-OA is the first quantitative measure that has been specifically developed to assess body image satisfaction in older adulthood (Baker & Gringart, 2009). It is based on a multidimensional integrative model of body image in older adults which takes into consideration the role of appearance as well as health and functional abilities in determining older adults' body image satisfaction (Baker & Gringart, 2012). The measure is rated on a 6-point Likert scale (1 = strongly disagree; 6 = strongly agree). Total scores range from 19 to 114 with higher scores indicating greater body satisfaction. The measure consists of four sub-scales: body-self relations, body image management, lifestyle, and health evaluation. The BIS-OA is both reliable and valid (Baker & Gringart, 2009) and demonstrated good internal consistency in the current sample (α = .79 - .85).

Manipulation check questions. In order to determine whether the manipulations generated the intended effect, manipulation check questions measuring state self-compassion, mindfulness, and relaxation were administered before and after the manipulations on practice day 7 (mid-intervention) and day 14 (final day of the intervention), respectively. The three questions included: i) to what extent do you feel kind and well-disposed towards yourself right now? (state self-compassion); ii) how much do you feel that your attention is focused on the present moment? (state mindfulness); and iii) how relaxed do you feel right now? (state relaxation). These questions were rated on a scale from 0 to 100, with higher scores representing higher levels of the state-based variable.

Frequency of practice and subjective appraisal of the intervention. To measure frequency of practice and their experience thereof, Qualtrics® XM survey software was programmed to track

the number of times participants accessed the podcasts and the time spent listening to each podcast. Participants were also asked to rate the quality of their practice experience (How would you rate your experience with today's practice?) on a 7-point Likert scale (1 = extremely negative; 7 = extremely positive) and provide optional written feedback.

Table 5. Cronbach's alpha (α) values for all dependent variables across groups and time points

		Pre-test/pre-induction	Post-induction (pre-test)	Pre-induction (post-test)	Post-test/post-induction
SCS Total	Self-compassion	.77	-	-	.60
	Mindfulness	.86	-	-	.88
	Control	.90	-	-	.78
Self-kindness	Self-compassion	.76	-	-	.85
	Mindfulness	.80	-	-	.88
	Control	.87	-	-	.90
Self-judgment	Self-compassion	.86	-	-	.86
	Mindfulness	.86	-	-	.83
	Control	.84	-	-	.82
Common humanity	Self-compassion	.63	-	-	.71
	Mindfulness	.83	-	-	.80
	Control	.66	-	-	.79
Isolation	Self-compassion	.75	-	-	.64
	Mindfulness	.84	-	-	.86
	Control	.90	-	-	.90
Mindfulness	Self-compassion	.71	-	-	.86
	Mindfulness	.71	-	-	.83
	Control	.84	-	-	.78
Over-identification	Self-compassion	.75	-	-	.82
	Mindfulness	.78	-	-	.79
	Control	.75	-	-	.74

FFMQ-SF Total	Self-compassion	.88	-	-	.87
	Mindfulness	.86	-	-	.87
	Control	.89	-	-	.88
Observe	Self-compassion	.71	-	-	.78
	Mindfulness	.66	-	-	.67
	Control	.77	-	-	.84
Describe	Self-compassion	.84	-	-	.92
	Mindfulness	.87	-	-	.90
	Control	.86	-	-	.90
Act-aware	Self-compassion	.87	-	-	.82
	Mindfulness	.86	-	-	.80
	Control	.83	-	-	.78
Non-react	Self-compassion	.74	-	-	.74
	Mindfulness	.78	-	-	.78
	Control	.76	-	-	.76
Non-judge	Self-compassion	.85	-	-	.73
	Mindfulness	.82	-	-	.83
	Control	.86	-	-	.84
BISS	Self-compassion	.89	.93	.89	.92
	Mindfulness	.89	.92	.92	.94
	Control	.93	.91	.93	.95
BIQ	Self-compassion	.81	-	-	.77
	Mindfulness	.83	-	-	.82
	Control	.72	-	-	.85
BIS-OA	Self-compassion	.79	-	-	.80
	Mindfulness	.82	-	-	.85
	Control	.83	-	-	.80

Note: BISS (Body Image States Scale), BIQ (Body Image Ideals Questionnaire), BIS-OA (Body Image Scale for Older Adults), SCS (Self-Compassion Scale), FFMQ-SF (Five Facets Mindfulness Questionnaire – Short Form).

2.2.4 Negative body image induction task

The negative body image induction task aimed to assess whether the self-compassion training offered greater protection against exposure to the induction task. Previous studies which utilised negative body image induction tasks were largely based on young females and involved presenting participants with photographs or magazine advertisements depicting thin models and instructing them to compare themselves to the models (Jansen et al., 2016; Rivière, Rousseau, & Douilliez, 2018; Wade, George, & Atkinson, 2009). However, given that body functioning and health concerns contribute significantly to body image in older adults (Reboussin et al., 2000), using photographs or magazine advertisements may not be appropriate as these may be more relevant to physical appearance than body functioning and health concerns. A writing-based approach was, therefore, employed. Participants wrote continuously for five minutes about aspects of their body that they disliked and compared those aspects to those of other people (Appendix G). In this way, while participants still focused on and compared their disliked body parts with those of other people, the writing procedure allowed participants to focus on any disliked aspect of their body, including body functioning and health concerns.

Prior to the start of the current research, a pilot study of the induction task was undertaken in order to test its effectiveness in lowering state body satisfaction. The pilot study sampled 9 males and 25 females (M_{age} = 36.76 (*SD* = 9.46), Range = 17-63) who were randomly allocated to either the negative body image writing group or a control writing group. Due to the laborious process of recruiting older adults, it was not possible to recruit older adults into the pilot study. The BISS was administered before and after the induction task. ANOVA results showed a significant interaction effect ($F(1,32) = 5.92$, $p = .02$) with post-hoc comparisons indicating greater reductions in state body image satisfaction in the negative body image writing group. The writing procedure was, therefore, deemed appropriate for the purpose of inducing negative body image in the current research.

2.2.5 Procedure

The study received appropriate ethics and governance approval from the University of Southampton (ERGO ID: 41640; Appendix B). All participants accessed an information and consent page via a link to the study's website hosted on Qualtrics® XM survey platform and informed consent was obtained from each participant prior to participation (Appendix D).

After providing electronic consent, participants completed demographic questions and the BISS. Next, they undertook the negative body image induction task following which they completed again the BISS. Participants then completed a body image repair task (Appendix H) aimed to address any discomfort that might have arisen following the induction. The body image repair task required participants to read a series of sequentially presented positive statements about body image and self-acceptance. The next procedure entailed completing the remaining baseline measures in the following order: BIQ, BIS-OA, SCS, and FFMQ-SF. Once the baseline measures were submitted, Qualtrics® XM triggered an algorithm creating a randomisation assignment that considered the distribution of previous allocations so that groups would be approximately the same size. Participants were randomised to one of three groups: self-compassion, mindfulness, or non-meditation control. Participants were blinded to group assignment, although they were clearly aware that they were doing something positive for themselves.

Participants received two automated emails over the intervention period, namely immediately following submission of the baseline measures, and at the beginning of the second week. The two automated emails contained the links to two different podcasts for each respective week. It was recommended that participants listened to the podcasts daily, or if daily practice was not possible, at least a minimum of four times weekly.

The podcasts were approximately 10 minutes in length and were recorded by a female trainee clinical psychologist. The self-compassion training consisted of practising the compassionate body scan in the first week and loving-kindness meditation with a special emphasis on the self in the second week. The mindfulness training comprised the mindful body scan in the first week and mindful breathing in the second week. The non-meditation control group practised a relaxing visualisation exercise in the first week and a controlled breathing exercise in the second week. Copies of the scripts for each practice are found in Appendices O to T.[17]. These meditations constitute briefer versions of the meditations used in similar body image studies (Albertson et al., 2015; Mantzios & Wilson, 2014; Toole & Craighead, 2016). As some older

[17] The self-compassion and mindfulness meditations were based on meditation resources taken from the Centre for Mindfulness Studies website (https://www.mindfulnessstudies.com/) and Dr Chris Germer's (co-founder of the Mindful Self-Compassion training programme) website (https://chrisgermer.com/). Authors granted permission for use of these resources in the current thesis provided that appropriate attribution is offered.

adults may experience cognitive difficulties related to concentration and focus (Deary et al., 2009), the use of briefer practices was considered more appropriate to optimise engagement.

Participants in each of the three conditions were able to access researcher support by email, text message, or phone on an as-required basis over the intervention period. The purpose of enabling access to researcher support was to (i) provide technical assistance; (ii) provide support with the completion of the pre and post measures; (iii) minimise attrition by providing encouragement and motivational support in case participants experienced any issues relating to their engagement with the interventions; and (iv) resolve any other issues or queries that may occur over the duration of the study. As participants were expected to listen to the practices on a regular basis, access to research support was available daily, including weekends, and text messages and emails were answered on the same day.

At the end of the two-week intervention period, participants received an automated email giving them access to the post-test measures and the debriefing statement (Appendix I). Post-test procedures followed the same order as the pre-test phase, and participants were required to undertake once again the negative body image induction task to evaluate the effects of the training. Finally, participants were offered entry into the prize draw.

Participants who opted for the paper version of the study were provided with a study pack containing the participant information sheet (Appendix E), consent form (Appendix F), a demographics form, copies of the measures, and guidelines explaining the induction and body image repair tasks. The study pack also contained a CD with the relevant practices and a daily log form to record the amount of practice. The pack also contained a step-by-step guide describing the stages of the intervention process. Participants were instructed to return the completed documentation to the researcher using a self-addressed envelope which was also included in the pack. See Figure 3 for a flowchart detailing the study procedure and participant flow.

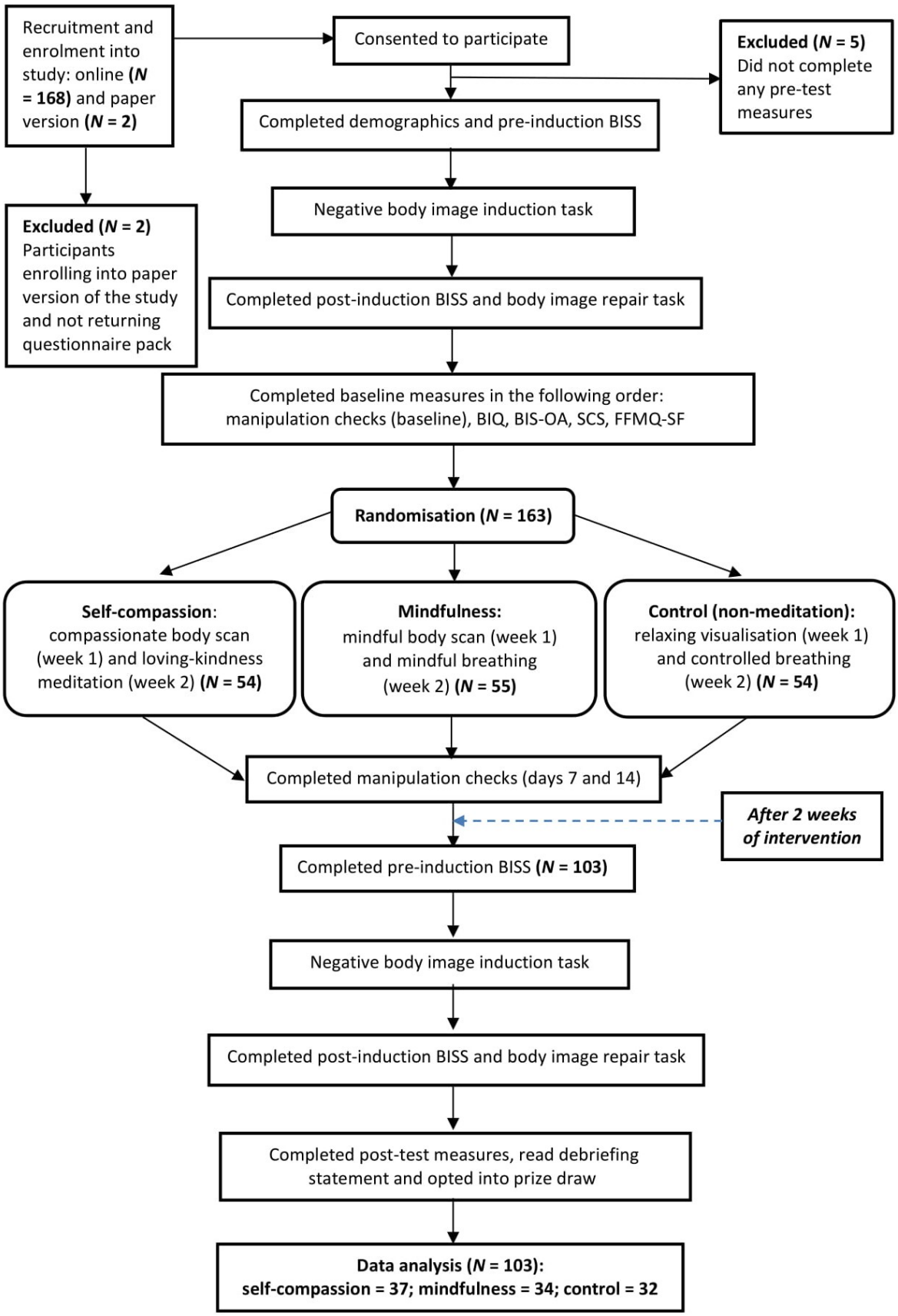


Figure 3. Flowchart detailing the study procedure and participant flow

2.2.6 Data analyses

Statistical analyses were conducted using SPSS Version 25 (IBM Corp., 2017). A significance level of $\alpha < .05$ was used in all data analyses. Descriptive statistics were used to describe data for all categorical and continuous variables. All outcome variables were checked to ensure assumptions for a mixed-model ANOVA were met. Visual inspection of Normal *Q-Q* plots indicated approximately normal data distributions for the dependent variables in all groups. Furthermore, data were examined for outliers (i.e. scores with *z*-scores exceeding +/-3.29; Tabachnik & Fidell, 2007) on the dependent variables. Six single outliers were identified among the five dependent variables on all measurement points. Following inspection of the dataset, it was not clear whether these outliers were genuine or a result of incorrect completion of the measures. As such, the outliers were retained and adjusted to the next highest or lowest score that was not an outlier (Field, 2013). Finally, the assumption of homogeneity of variance was met for each group combination and measurement points on all dependent variables ($p > .05$).

One-way ANOVAs and Pearson chi-square (χ^2) tests were initially conducted to examine baseline between-group differences to determine whether randomisation was effective in creating group equivalence. Next, to examine the manipulation checks, separate 2 (Time: pre- and post-manipulation) x 3 (Group) mixed ANOVAs were performed for state self-compassion, mindfulness, and relaxation, for practice days 7 and 14, respectively.

To determine the effects of training on self-compassion, mindfulness, actual-ideal body image discrepancies, and trait body image satisfaction (H_1), separate 2 (Time: pre-test and post-test) x 3 (Group) mixed ANOVAs were performed for each variable.

2 (Time: pre- and post-induction at baseline) x 3 (Group) mixed ANOVAs were conducted to examine whether the negative body image induction task was effective in reducing state body image satisfaction (H_2). To investigate whether the self-compassion training offered greater protection against the negative body image induction task on state body image satisfaction (H_3), a 2 (Time) x 3 (Group) mixed ANOVA was conducted using pre-post induction change scores. Change scores were computed by subtracting the pre-induction score from the post-induction score, such that negative change scores reflected pre-post reduction in state body image satisfaction. In addition, prior to computing the mixed ANOVA based on change scores, one-way ANOVAs were performed to check if pre-induction state body image satisfaction scores differed significantly across pre-test and post-test. This was done because, given that the manipulations could have led to an improvement in pre-induction scores at post-test, it would not have been

appropriate to use change scores to test for interaction effects as this could have obscured any meaningful intervention effects. As the one-way ANOVAs showed no significant differences between pre-induction scores across pre-test and post-test ($p > .05$), performing the ANOVA using change scores was deemed appropriate.

Exploratory correlational analyses were also undertaken using the two-tailed Pearson correlation to explore the associations between (i) self-compassion, mindfulness, and the body image variables; and (ii) pre-post changes in self-compassion and mindfulness and pre-post changes in the body image variables. Pre-post change scores were computed by subtracting the pre-test score from the post-test score. Therefore, positive change scores reflected pre-post improvements in SCS self-compassion (including self-kindness, common humanity, and mindfulness subscales), FFMQ-SF mindfulness (including all five subscales), and BIS-OA trait body image satisfaction scores, whereas negative change scores reflected pre-post improvements in SCS self-judgment, isolation, and overidentification scores, BIQ actual-ideal body image discrepancies scores, and pre-post reduction in BISS state body image satisfaction change scores (i.e. reduction in the negative impact of the induction task on state body image satisfaction). Data were also checked to ensure that the assumptions for a Pearson correlational analysis were met which, in addition to checking for normality and outliers, involved visually inspecting scatterplots to test whether linearity existed between the variables (Field, 2013).

2.3 Results

2.3.1 Main analyses

2.3.1.1 Hypothesis 1: Effects of training on self-compassion, mindfulness, actual-ideal body image discrepancies and trait body image satisfaction

A 2 (Time: pre-test and post-test) x 3 (Group) mixed ANOVA was performed to assess whether post-test scores in self-compassion, mindfulness, actual-ideal body image discrepancies, and trait body image satisfaction were significantly different. Means and standard deviations for each variable before and after the training for each group and the training effects are shown in Table 6.

Table 6. Pre-test and post-test mean scores and standard deviations for the dependent variables for each group (including the SCS and FFMQ-SF subscale scores) and training effects analysed with 2 (Time) x 3 (Group) mixed ANOVA

	Self-compassion		Mindfulness		Control		*F*	*p*
	Pre-test Mean (*SD*)	Post-test Mean (*SD*)	Pre-test Mean (*SD*)	Post-test Mean (*SD*)	Pre-test Mean (*SD*)	Post-test Mean (*SD*)		
SCS Total[a]	3.01 (.30)	3.03 (.30)	3.09 (.41)	3.08 (.45)	2.97 (.38)	2.92 (.38)	.237	.789
Self-kindness	3.06 (.68)	3.15 (.77)	3.27 (.73)	3.24 (.78)	2.90 (.91)	2.95 (.89)	.163	.850
Self-judgment	3.23 (.77)	3.26 (.78)	3.38 (.88)	3.36 (.85)	3.21 (.80)	3.24 (.67)	.042	.959
Common humanity	3.52 (.60)	3.68 (.74)	3.79 (.81)	3.63 (.87)	3.30 (.82)	3.20 (.80)	1.28	.283
Isolation	3.50 (.82)	3.60 (.68)	3.58 (.87)	3.54 (.98)	3.45 (.92)	3.50 (.82)	.207	.813
Over-identification	3.36 (.79)	3.35 (.85)	3.49 (.82)	3.43 (.89)	3.25 (.75)	3.35 (.73)	.346	.708
Mindfulness	3.63 (.68)	3.58 (.82)	3.93 (.63)	3.81 (.69)	3.54 (.87)	3.48 (.74)	.070	.932
FFMQ-SF Total	81.27 (12.63)	81.78 (11.31)	87.18 (11.44)	86.53 (12.17)	79.78 (12.01)	79.97 (11.79)	.096	.909
Non-react	15.49 (3.47)	15.81 (3.04)	16.21 (3.10)	15.88 (3.53)	15.28 (2.82)	15.91 (3.26)	.699	.500
Observe	15.57 2.54)	15.46 (2.68)	16.88 (2.17)	17.15 (2.23)	15.94 (2.65)	15.69 (2.90)	.357	.701
Act-aware	17.11 (3.83)	16.78 (3.70)	17.47 (3.99)	17.47 (3.50)	17.13 (3.41)	16.50 (3.31)	.306	.737
Describe	17.73 (4.73)	18.11 (4.37)	19.68 (3.91)	18.97 (4.54)	17.16 (3.73)	17.09 (4.13)	.675	.512

Non-judge	15.22 (5.03)	15.46 (3.89)	16.71 (4.51)	17.03 (4.96)	13.78 (4.67)	14.25 (3.98)	.025	.975
BIQ	2.02 (1.42)	1.96 (1.33)	1.63 (1.53)	1.54 (1.43)	2.32 (1.14)	2.41 (1.58)	.222	.801
BIS-OA	79.89 (10.38)	80.89 (9.71)	81.32 (10.99)	81.53 (11.86)	77.25 (10.92)	76.38 (10.35)	.299	.742

Note: SCS (Self-Compassion Scale), FFMQ-SF (Five Facets Mindfulness Questionnaire-Short Form), BIS-OA (Body Image Scale for Older Adults), BIQ (Body-Image Ideal Questionnaire).

ªOverall self-compassion (SCS) scores were calculated by reverse coding the negative subscale items before calculating subscale means – self-judgment, isolation, and over-identification – then computing a grand mean of all six subscale means.

Against prediction, there was no interaction effect between time and group (F(2,100) = .237, p = .789, $\eta 2_{partial}$ = .005), and no main effect of time (F(1,100) = .123, p = .726, $\eta 2_{partial}$ = .001) or group (F(2,100) = 1.63, p = .201, $\eta 2_{partial}$ = .032) on self-compassion (Figure 4)[18].

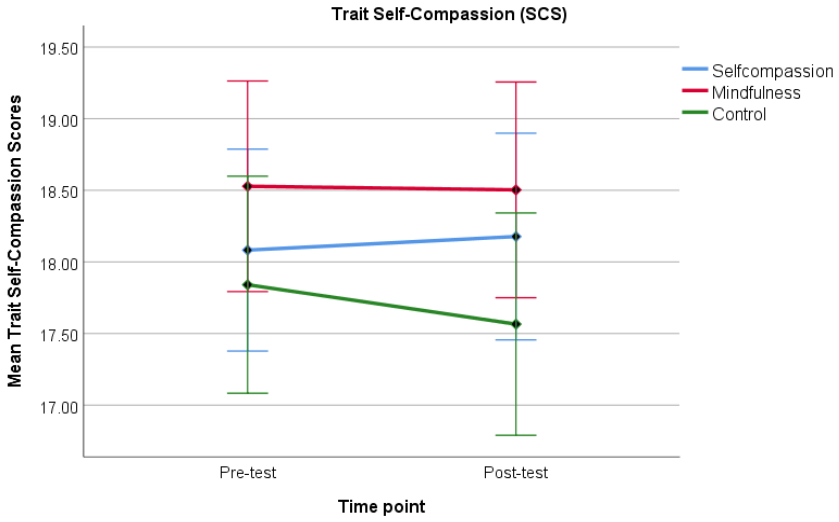


Figure 4. Pre-post effects of training on trait self-compassion (SCS) for each group. Error bars = +/-1SEM

Similarly, there was no significant time by group interaction (F(2,100) = .096, p = .909, $\eta 2_{partial}$ = .002) or main effect of time (F(1,100) = .00, p = .987, $\eta 2_{partial}$ = .000) on mindfulness. However, there was a main effect of group, with Tukey's post-hoc tests indicating that participants in the mindfulness group reported higher mindfulness scores throughout the intervention (F(2,100) = 4.09, p = .020, $\eta 2_{partial}$ = .076) (Figure 5)[19].

[18] Using the Reliable Change Index (RCI), five participants (13.5%) in the self-compassion group, three participants (8.8%) in the mindfulness group, and three participants (9.4%) in the control group showed reliable improvement on the SCS trait self-compassion scores from pre to post-intervention (RCI > 1.96).

[19] Three participants (8.1%) in the self-compassion group, four participants (11.8%) in the mindfulness group, and three participants (18.8%) in the control group showed reliable improvement on the FFMQ-SF trait mindfulness scores from pre to post-intervention (RCI > 1.96).

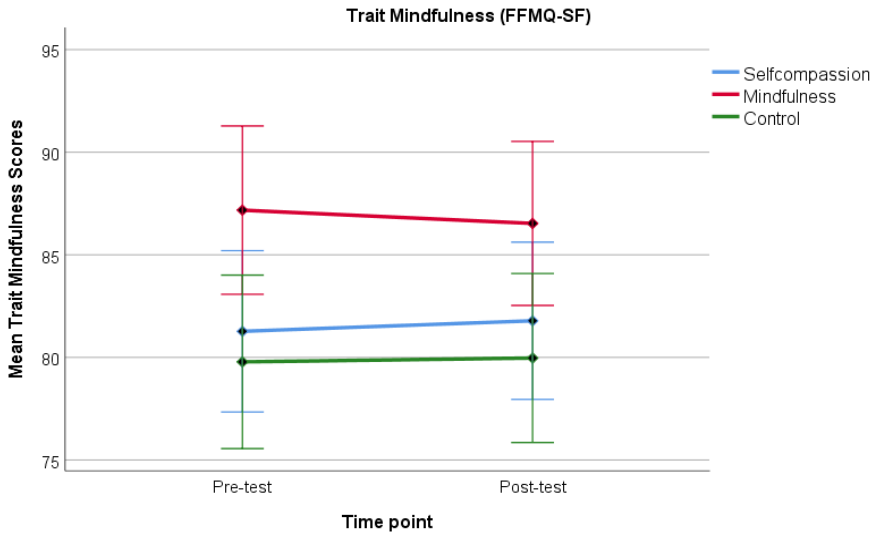


Figure 5. Pre-post effects of training on trait mindfulness (FFMQ-SF) for each group. Error bars = +/-1SEM

There was a marginally significant main effect of group ($F(2,100) = 3.09$, $p = .05$, $\eta 2_{partial} = .058$), and no main effect of time ($F(1,100) = .031$, $p = .861$, $\eta 2_{partial} = .000$), or time by group interaction ($F(2,100) = .22$, $p = .801$, $\eta 2_{partial} = .004$) on actual-ideal body image discrepancies scores (Figure 6)[20].

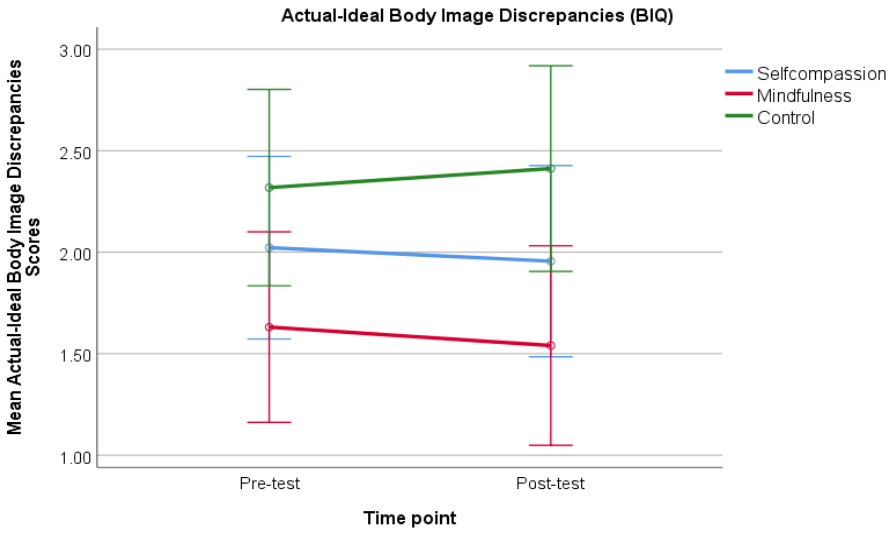


Figure 6. Pre-post effects of training on actual-ideal body image discrepancies (BIQ) for each group. Error bars = +/-1SEM

[20] Four participants (10.8%) in the self-compassion group, two participants (5.9%) in the mindfulness group, and two participants (6.3%) in the control group showed reliable improvement on the BIQ actual-ideal body image discrepancies scores from pre to post-intervention (RCI > 1.96).

For trait body image satisfaction, there was no significant time by group interaction ($F(2,100) = .299$, $p = .742$, $\eta 2_{partial} = .006$), and no main effect of group ($F(2,100) = 2.16$, $p = .121$, $\eta 2_{partial} = .041$), or time ($F(1,100) = .012$, $p = .912$, $\eta 2_{partial} = .000$) (Figure 7)[21].

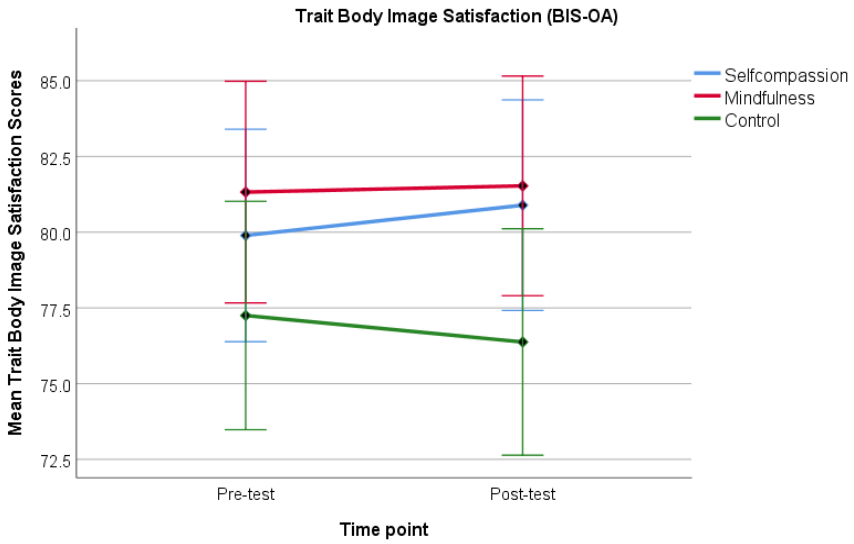


Figure 7. Pre-post effects of training on trait body image satisfaction (BIS-OA) for each group. Error bars = +/-1SEM

Exploratory mixed ANOVAs were also conducted to examine whether there were any differential effects of the training at the subscale level of the SCS and the FFMQ-SF measures. However, no significant time by group interactions were found for either the SCS or FFMQ-SF subscale scores (Table 5).

2.3.1.2 Hypothesis 2: Effects of the negative body image induction task on state body image satisfaction

The second hypothesis investigated whether the negative body image induction task was effective in lowering state body image satisfaction prior to training. Paired samples *t*-tests showed that the induction task generated significant reductions in state body image satisfaction in the control group only ($t(31) = 2.78$, $p = .009$), suggesting that the induction was largely ineffective (Figure 8).

[21] Seven participants (18.9%) in the self-compassion group, four participants (11.8%) in the mindfulness group, and two participants (6.3%) in the control group showed reliable improvement on the BIS-OA trait body image satisfaction scores from pre to post-intervention (RCI > 1.96).

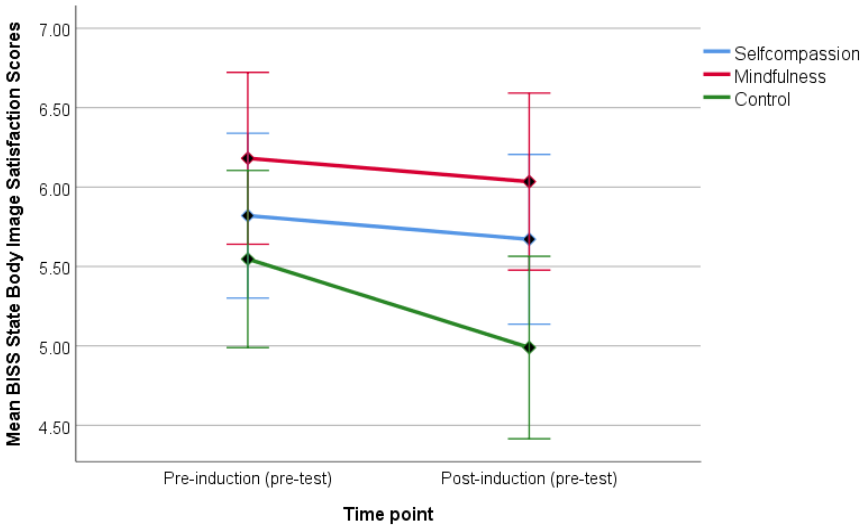


Figure 8. *Mean BISS state body image satisfaction scores before and after the induction task at baseline in each group. Error bars = +/-1SEM*

2.3.1.3 Hypothesis 3: Effects of training on the impact of the negative body image induction task on state body image satisfaction

A 2 (Time: BISS change scores at pre-test and post-test) x 3 (Group) mixed ANOVA was performed to test whether the self-compassion training offered greater protection against the negative body image induction task compared to the mindfulness and control interventions. Means and standard deviations of pre-test and post-test BISS change scores are displayed in Table 7.

Table 7. *Means and standard deviations for Body Image State Scale (BISS) change scores before and after the induction task at baseline and post-test for each group*

	Self-compassion (*N* = 37) Mean (*SD*)	Mindfulness (*N* = 34) Mean (*SD*)	Control (*N* = 32) Mean (*SD*)
Pre-test	-.15 (.80)	-.15 (.77)	-.52 (1.01)
Post-test	-.09 (.91)	-.09 (.94)	-.26 (1.02)

Note: SD = standard deviation. A greater negative change score indicates a greater decrease in BISS state body image satisfaction score at post-induction (i.e., greater increase in body dissatisfaction).

There was no evidence of a main effect of time ($F(1,100) = .953$, $p = .331$, $\eta 2_{partial} = .009$) or group ($F(2,100) = 1.89$, $p = .157$, $\eta 2_{partial} = .036$), and no time by group interaction ($F(2,100) = .275$, $p = .760$, $\eta 2_{partial} = .005$). This suggests that there were no significant differences in the extent to which exposure to the negative body image induction task affected scores in state body image satisfaction across the groups following the training (Figure 9).

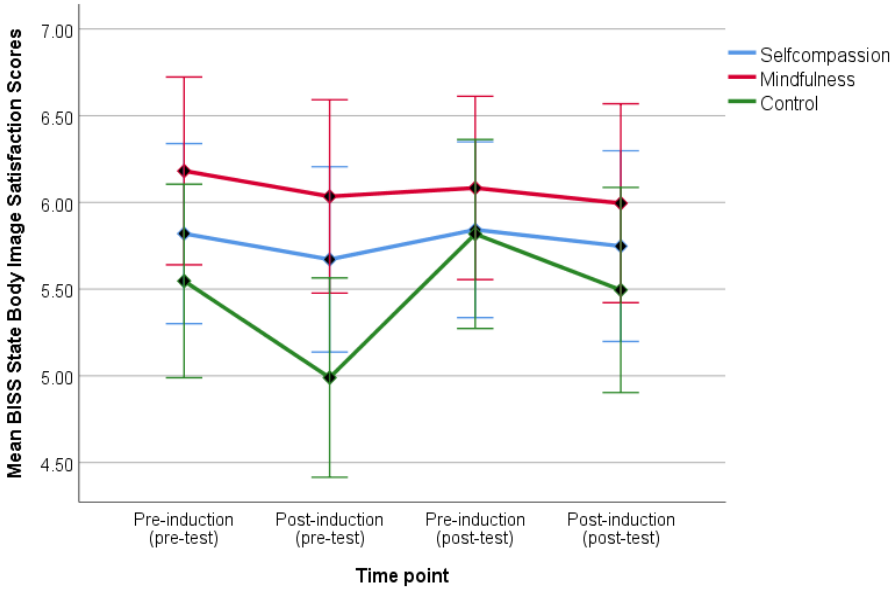


Figure 9. *Mean BISS state body image satisfaction scores at pre- and post-induction at baseline and post-test. Error bars = +/-1SEM*

2.3.2 Exploration of potential confounding variables

2.3.2.1 Group comparisons

To examine baseline group differences, Pearson chi-squared (χ^2) tests were conducted on the demographic variables and current and previous meditation. No significant between-group differences in these variables were found (Table 8). One-way ANOVAs also showed no significant between-group differences in self-compassion and the body image variables ($p > .05$). However, there was a significant between-group baseline difference in mindfulness ($F(2,100) = 3.54$, $p = .033$). Tukey's post-hoc tests revealed that participants in the mindfulness group scored higher in mindfulness than those in the control group ($M_{diff} = 7.40$, $p = .038$). This pattern indicated that random assignment failed to equate groups with respect to initial mindfulness scores and that participants who were assigned randomly to the mindfulness group started the study significantly more mindful than participants in the other two groups.

It was possible that having more participants with meditation experience in the mindfulness group (*N* = 16) compared to the self-compassion (*N* = 13) and control (*N* = 10) groups could have contributed to the higher baseline mindfulness in the mindfulness group and potentially influenced the pattern of results. In light of this, all analyses were re-run without the current and previous meditators. As no significant differences in the pattern of results were found, the current and previous meditators were included in the reported analyses to enhance statistical power. Means and standard deviation scores of baseline measures for each group are displayed in Table 9.

Given the dropout rate of 36.8% in the current study, χ^2 tests and independent samples *t*-tests were conducted to examine whether there were any differences between completers and non-completers that could explain the dropout rate. However, no significant differences were found between completers and non-completers with respect to age group (χ^2 (5) = 4.12, *p* = .533), gender (χ^2 (1) = 1.84, *p* = .175), ethnicity (χ^2 (5) = 7.28, *p* = .20), current meditation (χ^2 (1) = .001, *p* = .976), and prior meditation experience (χ^2 (1) = .014, *p* = .906), or baseline self-compassion (*t*(161) = .354, *p* = .724), mindfulness (*t*(161) = .475, *p* = .635), actual-ideal body image discrepancies (*t*(161) = -.314, *p* = .754), state body image satisfaction (*t*(161) = 1.98, *p* = .06) and trait body image satisfaction (*t*(161) = 1.74, *p* = .084). Interestingly, also, there was no significant difference between the three groups in baseline mindfulness scores when an intention-to-treat analysis was run utilising the entire sample of completers and non-completers, suggesting that those who dropped out of the mindfulness group had lower mindfulness (*F*(2,160) = 1.05, *p* = .352).

One-way ANOVAs were also computed to explore whether baseline scores differed across age and gender. No significant differences between the age groups were found (*p* > .05). In regard to gender, independent samples *t*-tests showed trending statistically significant differences in actual-ideal body image discrepancies (*t*(101) = -1.70, *p* = .072) and trait body image satisfaction scores (*t*(101) = -1.68, *p* = .067), with women reporting on average lower trait body image satisfaction and greater actual-ideal body image discrepancies scores than men.

Table 8. Results of Pearson x^2 test and descriptive statistics for the demographic variables for each group

	Self-compassion (*N* = 37)	Mindfulness (*N* = 34)	Control (*N* = 32)	$\chi 2$
Age group				
65-69 years	9 (24.3%)	10 (29.4%)	11 (34.4%)	5.17
70-74 years	17 (45.9%)	10 (29.4%)	9 (28.1%)	(.88)
75-79 years	5 (13.5%)	5 (14.7%)	5 (15.6%)	
80-84 years	2 (5.4%)	5 (14.7%)	4 (12.5%)	
85-89 years	3 (8.1%)	3 (8.8%)	3 (9.4%)	
> 90 years	1 (2.7%)	1 (2.9%)	0	
Gender				
Male	15 (40.5%)	8 (23.5%)	11 (34.4%)	2.36
Female	22 (59.5%)	26 (76.5%)	21 (65.6%)	(.31)
Ethnicity				
White British	35 (94.6%)	30 (88.2%)	28 (87.5%)	4.79
White Irish	0	1 (2.9%)	0	(.57)
Any other White background	2 (5.4%)	3 (8.8%)	3 (9.4%)	
Any other mixed/multiple ethnic background	0	0	1 (3.1%)	
Previous meditation				
Yes	9 (24.3%)	12 (35.3%)	7 (21.9%)	1.74
No	28 (75.7%)	22 (64.7%)	25 (78.1%)	(.42)
Current meditation				
Yes	4 (10.8%)	4 (11.8%)	3 (9.4%)	.10
No	33 (89.2%)	30 (88.2%)	29 (90.6%)	(.95)

Note: Column percentages appear in parentheses next to group frequencies. P-values appear in parentheses below the chi-square (χ^2) values.

Table 9. Means and standard deviations for the dependent variables for each group at baseline

	Self-compassion (*N* = 37) Mean (*SD*)	Mindfulness (*N* = 34) Mean (*SD*)	Control (*N* = 32) Mean (*SD*)
SCS	3.01 (.30)	3.09 (.41)	2.97 (.38)
FFMQ-SF	81.27 (12.63)	87.18 (11.44)	79.78 (12.01)
BISS	5.07 (.30)	5.17 (.28)	5.13 (.45)
BIQ	2.02 (1.42)	1.63 (1.53)	2.32 (1.14)
BIS-OA	79.89 (10.38)	81.32 (10.99)	77.25 (10.92)

Note: SD = standard deviation, SCS (Self-Compassion Scale), FFMQ-SF (Five Facets Mindfulness Questionnaire-Short Form), BISS (Body Image States Scale), BIQ (Body-Image Ideal Questionnaire), BIS-OA (Body Image Scale for Older Adults).

2.3.2.2 Manipulation efficacy

To examine whether the manipulation had the expected differential impact on the state variables, 2 (Time: pre- and post-manipulation) x 3 (Group) mixed ANOVAs were performed. It was predicted that the self-compassion group would exhibit greater post-manipulation state self-compassion compared to the other two groups, and the mindfulness group would exhibit greater state mindfulness compared to the control group on both manipulation check days (i.e., days 7 and 14).

For manipulation check day 7, the results indicated a main effect of time on state mindfulness ($F(1,36) = 13.70$, $p = .001$, $\eta 2_{partial} = .276$) and state relaxation ($F(1,36) = 26.89$, $p = < .001$, $\eta 2_{partial} = .428$), but not state self-compassion ($F(1,36) = 1.28$, $p = .266$, $\eta 2_{partial} = .034$). Figures 11 and 12 show that across participants, state mindfulness and state relaxation scores were higher at post-manipulation, respectively. However, there was only a marginally significant effect of group on state mindfulness ($F(2,36) = 3.28$, $p = .05$, $\eta 2_{partial} = .154$), and no interactions between time and group were observed on either state mindfulness ($F(2,36) = .365$, $p = .703$, $\eta 2_{partial} = .019$), state relaxation ($F(2,36) = 1.47$, $p = .244$, $\eta 2_{partial} = .075$), or state self-compassion ($F(2,36) = 1.93$, $p = .160$, $\eta 2_{partial} = .097$). Therefore, although all day 7 practices had a positive immediate effect on mindfulness and relaxation, there was no significant evidence that the different practices had effects specific to their aims.

For manipulation check day 14, there was a main effect of time on state self-compassion ($F(1,36) = 36.15$, $p < .001$, $\eta 2_{partial} = .501$), state mindfulness ($F(1,36) = 27.91$, $p < .001$, $\eta 2_{partial} = .437$) and state relaxation ($F(1,36) = 36.75$, $p < .001$, $\eta 2_{partial} = .505$). As illustrated in the figures below, participants across groups had higher post-manipulation scores in all state variables. In addition, there was a main effect of group on state mindfulness ($F(2,36) = 4.53$, $p = .018$, $\eta 2_{partial} = .201$), with Tukey's post-hoc comparisons indicating greater state mindfulness in the mindfulness group compared to the control group. However, there was no indication of any interaction effects between time and group on either state self-compassion ($F(2,36) = 2.31$, $p = .114$, $\eta 2_{partial} = .114$), state mindfulness ($F(2,36) = .177$, $p = .838$, $\eta 2_{partial} = .010$) or state relaxation ($F(2,36) = 2.56$, $p = .091$, $\eta 2_{partial} = .125$). Overall, these results suggest that, on both day 7 and day 14, whilst the state variables generally increased during the day's practice, the practices did not produce differential effects.

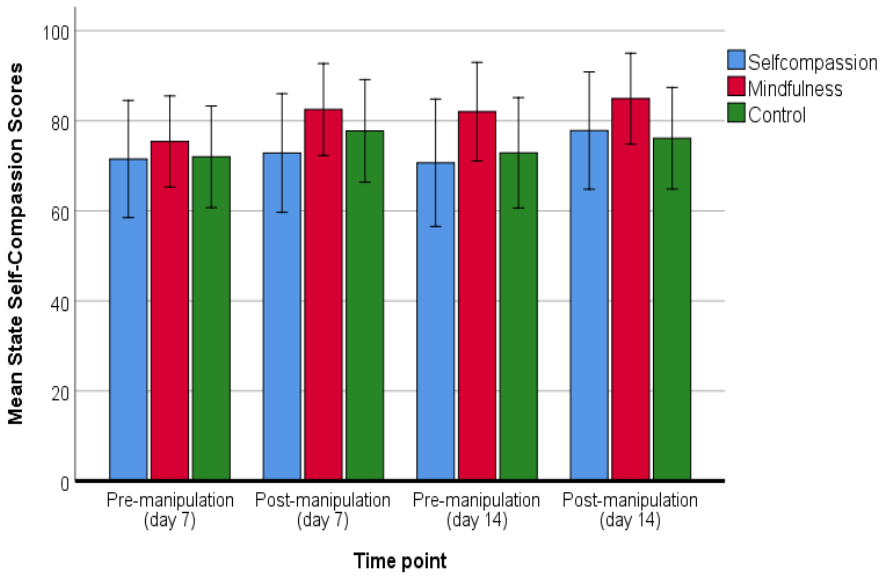


Figure 10. Mean state self-compassion scores before and after the manipulation on practice days 7 and 14. Error bars = +/-1SEM

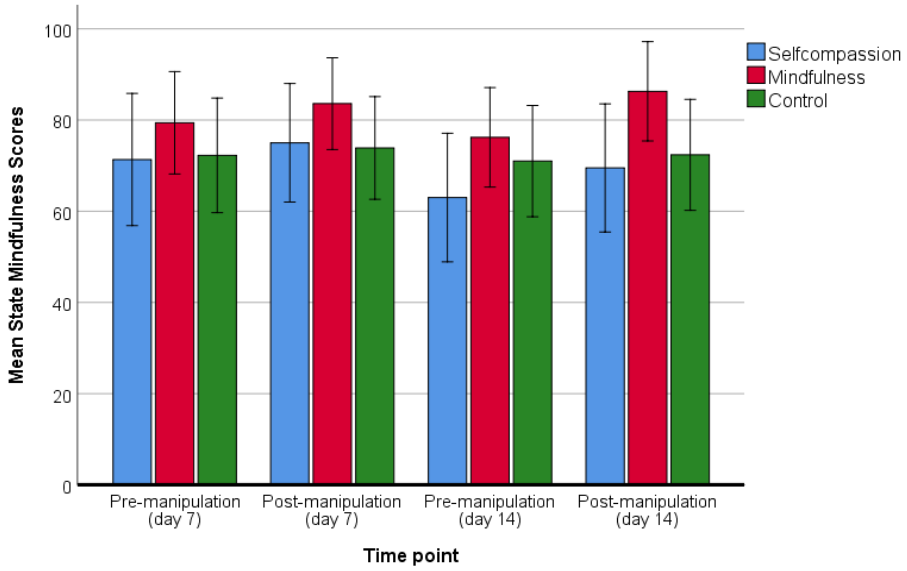


Figure 11. Mean state mindfulness scores before and after the manipulation on practice days 7 and 14. Error bars = +/-1SEM

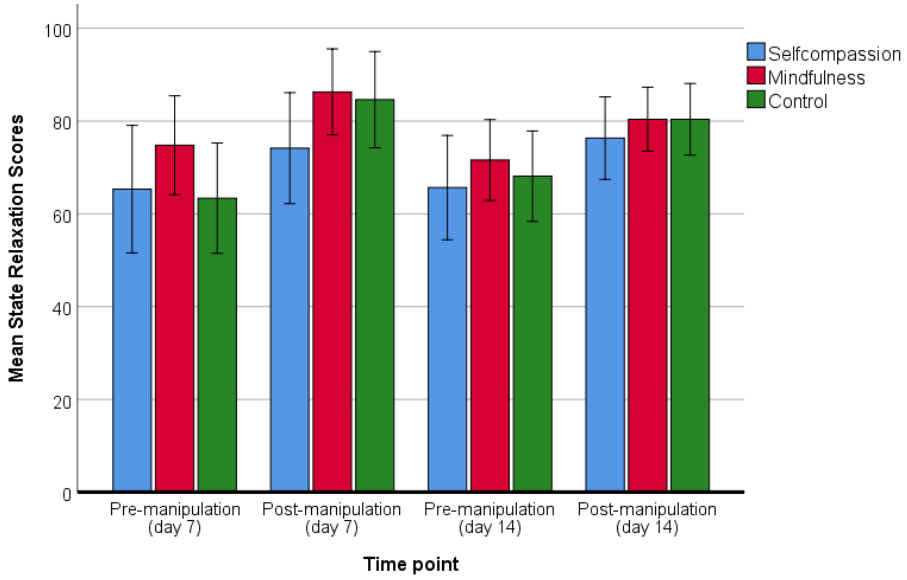


Figure 12. Mean state relaxation scores before and after the manipulation on practice days 7 and 14. Error bars = +/-SEM

2.3.3 Exploratory analyses

2.3.3.1 Associations between self-compassion, mindfulness, and the body image variables

Pearson's correlation analyses were conducted to explore whether self-compassion and mindfulness were positively correlated with state and trait body image satisfaction and negatively

correlated with actual-ideal body image discrepancies at both pre-test and post-test. The results showed some statistically significant medium to strong correlations between self-compassion, mindfulness, and some of the body image variables, respectively, with the majority of significant correlations being observed in the mindfulness and control groups. Given that calculating multiple correlations increases the risk of a type-1 error (Field, 2013), the statistically significant correlations in the current analyses are only suggestive. Pearson correlations between all main dependent variables at pre-test and post-test are shown in Table 10.

2.3.3.2 Associations between pre-post changes in self-compassion and mindfulness and changes in the body image variables

To explore whether pre-post changes in self-compassion and mindfulness were associated with changes in the body image variables, two-tailed Pearson correlation analyses were performed. The correlation analyses showed no significant associations between pre-post changes in self-compassion and mindfulness and changes in the body image variables in either the self-compassion or mindfulness groups. However, medium to strong correlations between changes in self-compassion and mindfulness, and some of the body variables were observed in the control group. Similarly, when further correlation analyses were conducted to test whether there were any associations between changes in the SCS and FFMQ-SF subscale scores and the body image variables, there was clear evidence of more significant correlations in the control group. Surprisingly, the results also revealed that improvements in trait body image satisfaction and actual-ideal body image discrepancies in the control group were positively associated with increased self-judgment, isolation, and over-identification. Table 11 shows Pearson correlations between change scores in self-compassion and mindfulness (including changes in subscale scores) and change scores in the body image variables for each group.

Table 10. Pearson correlations between self-compassion, mindfulness, and the body image variables for each group at baseline and post-test

	Self-compassion (*N* = 37)						Mindfulness (*N*= 34)						Control (*N* = 32)					
	Pre-test			Post-test			Pre-test			Post-test			Pre-test			Post-test		
	BISS	BIS-OA	BIQ	BISS	BIS-OA	BIQ	BISS	BIS-OA	BIQ	BISS	BIS-OA	BIQ	BISS	BIS-OA	BIQ	BISS	BIS-OA	BIQ
SCS	-.253	-.022	.124	-.136	-.141	-.092	.184	.138	-.384*	.201	.431*	.138	.228	-.080	.300	-.111	-.026	.252
FFMQ-SF	.141	.181	-.309	.351*	.300	.025	.061	.299	-.171	.414*	.292	-.437**	.281	.584**	-.411	.324	.583**	-.576**

Note: BISS (Body Image States Scale), BIS-OA (Body Image Scale for Older Adults), BIQ (Body-Image Ideal Questionnaire), SCS (Self-Compassion Scale), FFMQ-SF (Five Facets Mindfulness Questionnaire-Short Form).
BISS scores represent the pre-induction scores at both pre-test and post-test.
** Correlation is significant at the 0.05 level (2-tailed).*
*** Correlation is significant at the 0.01 level (2-tailed).*

Table 11. Pearson correlations between pre-post change scores for self-compassion and mindfulness (including changes in subscale scores) and pre-post change scores for the body image variables for each group

	Self-compassion			Mindfulness			Control		
	BISS	BIS-OA	BIQ	BISS	BIS-OA	BIQ	BISS	BIS-OA	BIQ
SCS Total	.019	-.286	.121	-.177	-.160	.054	-.397*	-.108	.113
Self-kindness	.100	.247	.112	.057	.172	.119	.117	.420	-.437*
Self-judgment	-.004	.395*	.029	.107	.210	-.155	.444*	.584**	-.482**
Common humanity	.272	.056	.124	-.093	.203	-.046	.120	.277	-.337
Isolation	.481**	.262	-.117	.113	.388*	-.141	.554**	.461**	-.532**
Mindfulness	.333*	.360*	-.064	-.236	.273	-.124	.209	.445*	-.442*
Over-identification	.138	-.434**	.093	.168	.224	.051	.655**	.520**	-.618**
FFFMQ-SF Total	.415	.298	-.230	-.301	.199	.022	.332	.583**	-.509**
Non-react	.202	.246	-.120	-.029	.231	-.079	.328	.401*	-.483**
Observe	.344*	.365*	.207	.139	.041	-.213	.289	.426*	-.291
Act-aware	.122	-.067	-.190	-.068	.253	.080	.152	.396*	-.403*
Describe	-.024	-.026	-.085	-.359*	-.101	-.033	.108	.348	-.322
Non-judge	.405*	.235	-.355*	-.297	.047	.213	.291	-.469**	-.384*

Note: Improvements in SCS self-compassion (both the total score and the self-kindness, common humanity, and mindfulness subscales), FFMQ-SF mindfulness (both the total score and all subscales), and BIS-OA trait body image satisfaction scores are evidenced by an increase in pre-test to post-test change score (i.e., positive

change score). Conversely, improvements in BIQ actual-ideal body image discrepancy, BISS state body image satisfaction, and SCS subscales for self-judgment, isolation, and over-identification, are evidenced by a decrease in pre-test to post-test change score (i.e., negative change scores).
** Correlation is significant at the 0.05 level (2-tailed).*
*** Correlation is significant at the 0.01 level (2-tailed).*

2.3.4 Adherence effects and acceptability of the intervention

2.3.4.1 Effects of frequency of practice on pre-post changes in self-compassion, mindfulness and the body image variables

One-way ANOVAs were initially conducted to examine whether frequency of practice differed across groups. The results showed no significant between-group differences for both weeks 1 and 2, and overall throughout the intervention (Table 12).

Bivariate correlations were conducted to explore whether frequency of practice was associated with pre-post changes in the dependent variables. Only data related to the number of times that participants listened to the entire podcasts (based on the timings recorded in Qualtrics® XM) were entered in the analyses. As illustrated in Table 13, the results suggested a significant negative association between frequency of practice and self-judgment in the self-compassion group only ($r(35) = -.417$, $p = .010$), and positive associations with FFMQ-SF's 'observe' and 'act aware' subscale scores in the mindfulness ($r(32) = .35$, $p = .043$) and control groups ($r(30) = .44$, $p = .011$), respectively.

Table 12. Means and standard deviations of frequency of practice and one-way ANOVA output for each group

	Self-compassion (*N* = 37) Mean (*SD*)	Mindfulness (*N* = 34) Mean (*SD*)	Control (*N* = 32) Mean (*SD*)	*F*	*p*
Week 1	4.27 (1.74)	4.74 (1.60)	4.28 (1.57)	.97	.382
Week 2	4.03 (1.68)	4.50 (2.03)	4.21 (1.94)	.79	.456
Average of week 1 and week 2	4.15 (1.54)	4.62 (1.56)	4.28 (1.47)	.88	.419

Note: Standard deviations appear in parentheses next to the means.

Table 13. Pearson correlations between pre-post changes in the dependent variables (including changes in subscale scores) and overall frequency of practice over the 2-week intervention period for each group

	Overall frequency of practice		
	Self-compassion (*N* = 37)	Mindfulness (*N* = 34)	Control (*N* = 32)
SCS Total	-.132	-.079	-.159
Self-kindness	.194	-.081	-.335
Self-judgment	-.417*	.202	-.069
Common humanity	.242	.123	-.082
Isolation	.193	.126	-.012
Mindfulness	.028	.218	-.124
Over-identification	.101	.059	-.124
FFMQ-SF Total	.156	.250	-.264
Non-react	.199	.215	-.058
Observe	-.087	.349*	-.188
Act-aware	.270	-.186	.443*
Describe	-.278	.294	-.090
Non-judge	.141	.149	-.212
BISS	-.224	-.262	.085
BIQ	.246	-.236	.160
BIS-OA	.052	.133	.015

Note: SCS (Self-Compassion Scale), FFMQ-SF (Five Facets Mindfulness Questionnaire-Short Form), BISS (Body Image States Scale), BIS-OA (Body Image Scale for Older Adults), BIQ (Body-Image Ideal Questionnaire).
** Correlation is significant at the 0.05 level (2-tailed).*

2.3.4.2 Subjective appraisal of the intervention

After listening to each podcast, participants in all groups rated their experience of listening to the podcast on a 7-point Likert scale (1 = extremely negative; 7 = extremely positive). One-way ANOVAs revealed significant between-group differences in mean ratings in both the first ($F(2,102) = 43.23$, $p < .001$) and second week ($F(2,102) = 27.02$, $p < .001$), and overall throughout the

intervention period ($F(2,102) = 53.70$, $p < .001$). Tukey's post-hoc tests showed that the non-meditation interventions were rated more highly than the self-compassion and mindfulness interventions, whereas no significant differences in mean ratings were found between the mindfulness and self-compassion groups in either week 1, week 2, or over the intervention period. The means and standard deviations of intervention appraisal ratings for each group and the one-way ANOVA output are displayed in Table 14.

Table 14. Means and standard deviations of intervention appraisal ratings and one-way ANOVA output for each group

	Self-compassion (N = 37) Mean (SD)	Mindfulness (N = 34) Mean (SD)	Control (N = 32) Mean (SD)	F	p
Week 1	5.30 (.37)	5.43 (.37)	6.05 (.31)	43.23	<.001
Week 2	5.08 (.53)	5.27 (.39)	5.83 (.35)	27.02	<.001
Average of week 1 and week 2	5.22 (.31)	5.35 (.33)	5.95 (.28)	53.70	<.001

2.4 Discussion

2.4.1 Summary of findings

The primary aims of the study were to compare the impact of brief self-compassion and mindfulness training on self-compassion, mindfulness, actual-ideal body image discrepancies and body image satisfaction in older adults, and to assess whether the self-compassion training offered greater protection against a negative body image induction task compared to the mindfulness and control groups. Contrary to the first hypothesis, the manipulations did not appear to impact the dependent variables of interest following training. In regard to the second and third hypotheses, the induction task did not achieve the desired reduction in baseline state body image satisfaction. Therefore, it was not possible to determine the differential post-training effects of the experimental manipulations in terms of mitigating the impact of the induction task.

2.4.2 Findings in context

Contrary to the first hypothesis, the experimental manipulations did not generate the predicted improvements in self-compassion, mindfulness, and the body image variables. Current findings are inconsistent with Albertson et al.'s (2015) study which showed that brief online self-compassion training improved self-compassion and body dissatisfaction in a sample of 18 to 60-year-old women. Similarly, the lack of change in body satisfaction observed in the mindfulness group is inconsistent with the findings reported in Atkinson and Wade (2012) and Wade et al. (2009) which found that brief mindfulness-based approaches significantly reduced body dissatisfaction in their samples of female undergraduates. These results suggest that brief meditation interventions may hold more promise for younger adults in improving body image concerns, or that interventions of a longer duration may be required to achieve observable shifts in older adults. Of note, however, participants in the current study reported moderate levels of trait body image satisfaction at baseline, whereas those in previous studies seemed to exhibit lower levels of body image satisfaction. Furthermore, in the current study, baseline mean scores for self-compassion, mindfulness, and actual-ideal body image discrepancies were similar to normative data for the SCS (Neff, 2003), FFMQ-SF (Brady, Kneebone, & Bailey, 2019), and BIQ (Cash and Szymanski, 1995), respectively, using non-clinical samples. Hence, it is possible that the potential for any meaningful improvement in post-test scores may have been limited due to the non-clinical nature of the current sample, possibly creating a ceiling effect.

Furthermore, although the manipulation checks showed trends for improvements in state self-compassion, state mindfulness, and state relaxation over the course of the manipulations, no differential effects were observed. While a more intense dose of the intervention may have been required to generate differential effects on the state variables, it is possible that the overall pre- to post-manipulation increases in the state variables across participants may reflect demand characteristics, or non-specific effects of the manipulations, such as increases in positive affect. Given the small sample of participants who completed the manipulation checks, there may have also not been sufficient statistical power to detect any between-group differences. Another possibility is that the state measures may have lacked the sensitivity to capture momentary fluctuations in the variables.

The study also aimed to determine whether the induction task was effective in lowering body image satisfaction, and whether the self-compassion training offered greater protection against the effects of the induction. Unfortunately, however, although changes in state body image satisfaction were noted to occur in the anticipated direction following the induction at

baseline, these changes reached statistical significance in the non-meditation control group only, indicating that the induction was largely ineffective. One explanation for these results could be that the participants in the control group may have been somewhat more vulnerable to the impact of the induction given that they initiated the study with the lowest mean score in trait body image satisfaction and the highest mean score in actual-ideal body image discrepancies, suggesting that they may have been more concerned about their body image compared to the other groups. In addition, the control group had the lowest baseline mean scores for self-compassion and mindfulness scores, thus it is possible that participants in the other groups may have had more dispositional psychological resource to counteract the adverse effects of the induction.

Of note, also, participants in the pilot study demonstrated a greater mean reduction in state body image satisfaction from pre- to post-induction (M_{diff} = -1.00) compared to those in the present study (self-compassion M_{diff} = -0.15; mindfulness M_{diff} = -0.15; control M_{diff} = -0.52), suggesting that the induction had a greater impact in the pilot study. Considering the younger age of the pilot study sample, it is possible that the noted differences in the effectiveness of the induction task may be related to age. In fact, it has been argued that older adults have better emotion regulation skills as a result of years of life experiences and are able to regulate their emotions in a way that would avoid negative experiences (Charles & Carstensen, 2008; Charles, Piazza, Luong, & Almeida, 2009). Therefore, they may have been able to regulate the negative effects of the induction more effectively. It is also possible that older people psychologically process negative experiences differently when writing about them than younger people do. One final explanation might be that the BISS may not be appropriate for measuring state body image satisfaction in older adults as it does not capture body satisfaction states related to body functioning and health – aspects which are central to the body image of older adults (Baker & Gringart, 2012; Reboussin et al., 2000). Given that the BISS has been only validated with young and middle-aged adults (Cash et al., 2002), it would be important to investigate its validity with older adults.

Despite the lack of significant training effects on the outcome variables, the exploratory analyses revealed an intriguing pattern of associations between pre-post increases in the 'non-compassionate' subscales of the SCS (i.e., self-criticism, isolation, and over-identification) and improvements in trait body image satisfaction and actual-ideal body image discrepancies, which were present only in the control group. These results are inconsistent with previous work showing that self-compassion, rather than 'non-compassion', is associated with desirable psychological

outcomes in older adults (Allen, Goldwasser, & Leary, 2012; Allen & Leary, 2013; Brown, Huffman, & Bryant, 2018; Phillips & Ferguson, 2012). While it is unclear why improvements in the body image variables were associated with increases in the 'non-compassionate' elements of the SCS, it might be that these findings reflect response bias or perhaps participants' lack of self-knowledge to be able to accurately portray what the SCS was attempting to determine. Nonetheless, these explanations are disconfirmed by the good internal consistency found for both the 'non-compassionate' SCS subscales and body image measures, as well as the fact that mean scores for the variables in question were similar to those reported in validation studies. Alternatively, it might be that this pattern of associations mirrors the belief that one needs to be hard on oneself to reach desired goals (e.g., improved body image), thus reflecting fears of self-compassion[22] (Gilbert, Clarke, Hempel, Miles, & Irons, 2004). Hence, it is possible that participants may have interpreted the 'non-compassionate' SCS items in a "positive" manner, and that the self-compassion and mindfulness manipulations may have disrupted this mechanism.

Of note, frequency of practice was not associated with pre-post changes in most of the outcome variables. These findings corroborate those found in Albertson et al.'s (2015) and Toole and Craighead's (2016) studies which failed to provide evidence for practice effects. Interestingly, however, the current study found a significant inverse association between self-judgment and frequency of practice, which was present only in the self-compassion group. This finding suggests that fluctuations in self-judgment might be more responsive to exposure to self-compassion than mindfulness interventions, thus resonating with previous studies showing a negative association between self-compassion and self-criticism (Gilbert & Procter, 2006; Neff, Rude, & Kirkpatrick, 2007).

Finally, the analyses revealed that the self-compassion and mindfulness practices were rated as "slightly positive" on average, whereas the relaxation practices in the control group were rated as "moderately positive". It is possible that the relaxation practices might have felt more familiar to the participants given their widespread and longstanding use within stress management and thus, they may have felt more confident engaging with this type of practice. Conversely, given that self-compassion and mindfulness are relatively novel approaches, combined with the fact that the majority of participants in the experimental groups had no

[22] Commonly cited fears of self-compassion include: "I fear that if I develop compassion towards myself then I will become someone I don't want to be"; "I fear I will become a weak person"; "I don't deserve it"; "If I am nice to myself, I won't get anything done" (Gilbert et al., 2004).

meditation experience, it is possible that participants found it more difficult to engage with the meditation practices, and hence rated them less positively than relaxation.

2.4.3 Strengths and limitations

A noteworthy strength of the study was the use of a randomised controlled design, which controlled for most confounding variables by baseline factors. Additional strengths included the use of an active control group, adequately powered sample, blinding of participants to group assignment, objective tracking of frequency of practice, and inclusion of manipulation checks to test whether self-compassion and mindfulness were being generated as intended. Furthermore, to the best of my knowledge, this study is the first of its kind in its application of brief self-guided online meditation training for improving body satisfaction in a sample of older men and women.

Alongside the strengths of the study, a number of limitations need to be highlighted. The sample comprised self-selecting volunteers, presumably well-educated, and predominantly White British, which limits the generalisability of the findings. The recruitment of a non-clinical sample might have also limited the potential for observable improvements within the brief intervention period due to a ceiling effect. Another limitation was that the induction task was not trialled on an older adult sample, which might have reduced its applicability to the current sample. Finally, as it may take time to properly assimilate self-compassion and mindfulness skills, the brevity of the intervention may have obscured the potential for any observable effects.

2.4.4 Implications for clinical practice

Despite recruiting a non-clinical sample, some participants reported significant body image concerns in the induction task. As body image concerns are often seen on a continuum of satisfaction and dissatisfaction with one's body (Thompson, Heinberg, Altabe, & Tantleff-Dunn, 1999), the current findings have thus some relevance to clinical samples. However, on the basis of the current findings, the use of brief interventions to address body image concerns in older adults would not be recommended and suggested implications for clinical practice need to be considered with caution.

The fact that overall participants in the current study scored within the normative range on the body image measures suggests that body image remains relevant to older adults. Given the potential psychological and physical implications of body image issues in older adulthood (Baker, 2010; Marshall, Lengyel, & Menec, 2014), it is thus important that healthcare professionals

consider these issues in their assessment and formulation of the older person's needs, so that they can intervene appropriately.

Given the frequency of practice within the current study and the fact that attrition was lower than that reported in similar body image studies (e.g. Albertson et al., 2015), as well as other self-guided online interventions (e.g. Christensen, Griffiths, & Jorm, 2004; Waller & Gilbody, 2009), the findings suggest that online meditation training is acceptable to older adults. This has important implications as this kind of online intervention may enable providers to engage older adults who may feel reluctant to access face-to-face psychological services due to stigma and ageist attitudes. Furthermore, older adults who are frail or housebound can be prevented from accessing mental health services which is often designed for those who are mobile (Pettit et al., 2017). It should be noted, however, that several emails, phone calls, and text messages were received from participants over the duration of the study, not only to request technical support or discuss any issues or queries relating to the completion of the measures and/or their engagement with the practices, but also to provide general feedback on their experience of listening to the podcasts. . It is thus likely that older adults may benefit from supplementing online meditation interventions with collaborative clinician support. Clinician support may be also particularly helpful for those older adults with impaired cognitive abilities in order to prevent disengagement.

Importantly, several participants also made suggestions in favour of incorporating initial background information about the practices as well as providing a wider repertoire of practices. These suggestions carry important clinical implications as the inclusion of a psychoeducational component and access to a more diverse range of practices may have helped to improve the design of the online intervention and, in turn, facilitate better engagement and adherence, optimise participants' experience of the brief intervention, and potentially contribute to better outcomes (Cavanagh et al., 2013). Importantly, also, some of the participants' feedback implied an active resistance to engage with the ideas of self-compassion, which might be due to fears of self-compassion (Gilbert et al., 2004). It would be, therefore, important to emphasise this in the initial background information to provide reassurance to participants who have these experiences, facilitate access to their self-compassion, and optimise the efficacy of the online intervention.

2.4.5 Future research

Future research could be improved by addressing limitations of the current study. These include addressing limits of the current sample by using a more diverse sample (e.g. different

ethnic and socioeconomic backgrounds, those with physical health issues and care home residents), and ideally targeting older adults with clinically relevant symptoms of body image distress, including those with current or previous histories of eating disorders. Although it was not feasible to pilot-test the induction task using an older adult sample in the current study, it would be helpful for future studies to implement an induction task that would have been previously trialled on older adults. It may be also beneficial for future research to further extend the current intervention period, perhaps to three or four weeks, as well as include a follow-up to examine the sustainability of any significant outcomes. Future methods of improving the content and appeal of the brief intervention and optimising the older participant's experience also need to be explored and evaluated. Finally, moving forward within this area, there is scope for conducting qualitative research around the experience of self-guided meditation practice, as well as examining the impact of other compassion-based practices, such as compassion-focused imagery employed in compassion-focused therapy (Gilbert, 2010).

2.4.6 Conclusions

In conclusion, the current study did not find evidence for any significant effects of the brief online meditation training on self-compassion, mindfulness, actual-ideal body image discrepancies, and body image satisfaction in older adults, or any superior protective effect of the self-compassion training against the impact of the negative body image induction task. While this study presented with a number of strengths, the current findings need to be interpreted in light of its methodological limitations. Future research should replicate the current study using a larger and more demographically diverse sample of older adults and including those presenting with significant and clinically relevant symptoms of body image distress to further broaden the scope of body image intervention research with older adults. The issue of the appropriateness of current body image measurements should also be addressed to ensure that experiences of body image distress in older adults are being properly captured. While the older adults, in the current study, seemed to find the online self-guided approach relatively acceptable, it would be beneficial to explore ways of optimising the self-guided meditation experience for the older adult, such as through clinician support. Given the global trend of population ageing and the fact the UK will experience a significant increase in the proportion of older adults over the next decades, it is vital to continue to design and evaluate interventions that can effectively meet the needs of older adults in relation to their body image and overall psychosocial health.

Appendices

Appendix A Quality Assessment

Authors (Year)	Selection bias	Design	Confounders	Blinding	Data collection methods	Withdrawals/ dropouts	Global rating	Additional notes
1. Albertson et al. (2015)	Weak	Moderate	Strong	Weak	Strong	Weak	Weak	Self-selecting and demographically homogeneous sample (white women from English-speaking Western countries). Attrition rate 52%. No blinding for ps and outcome assessors. Self-report method of assessing frequency of practice may not be reliable.
2. Ascone et al. (2017)	Moderate	Strong	Moderate	Moderate	Moderate	Strong	Moderate	Manipulation check of negative emotion induction exercise based solely on a physical stress marker. No blinding for outcome assessors.
3. Beaumont et al. (2016)	Moderate	Moderate	N/A	Weak	Strong	Weak	Weak	Small and demographically homogenous sample (all ps were university employees). No control group. No blinding for ps and outcome assessors. 64% follow-up rate. Withdrawals/ drop-outs data not explicitly described.

Authors (Year)	Selection bias	Design	Confounders	Blinding	Data collection methods	Withdrawals/ dropouts	Global rating	Additional notes
4. Cândea & Szentágotai-Tătar (2018)	Weak	Strong	Weak	Weak	Strong	Moderate	Weak	Self-selecting and demographically homogeneous sample (mostly female university students). Baseline differences in demographic variables between groups not stated. No blinding for outcome assessors. Blinding status of ps not clear.
5. Dundas et al. (2017)	Weak	Strong	Moderate	Weak	Strong	Moderate	Weak	Self-selecting and demographically homogeneous sample (mostly female university/ college students). Some baseline differences between groups (e.g., personal growth-related self-efficacy) not controlled for. No blinding for ps and outcome assessors. 74% follow-up rate. Intention-to-treat analysis.
6. Falconer et al. (2016)	Moderate	Moderate	N/A	Weak	Moderate	Moderate	Moderate	Small sample size. No control group. No blinding for ps and outcome assessors. Repeated use of the SCCS may have reduced validity of the measure. Inconsistent reporting of drop-out data.

Authors (Year)	Selection bias	Design	Confounders	Blinding	Data collection methods	Withdrawals/ dropouts	Global rating	Additional notes
7. Gilbert & Irons (2004)	Moderate	Moderate	N/A	Weak	Weak	Strong	Weak	Small sample size. No control group. No blinding for ps and outcome assessors. Data collection method using an interval contingent diary format may have been open to retrospective bias. Self-report measures not reported.
8. Held & Owens (2015)	Moderate	Moderate	Weak	Weak	Strong	Weak	Weak	Small sample size. 43% attrition. No non-intervention control group. No blinding for outcome assessors. Blinding status of ps not clear. Potential confounding variables (e.g. psychotherapy and/or medication received as part of TAU) not controlled for. No method of assessing intervention adherence used. Reduced intervention integrity as the SC intervention group included a CBT-type self-monitoring exercise. Social desirability effects may have impacted on self-report assessment outcomes.

Authors (Year)	Selection bias	Design	Confounders	Blinding	Data collection methods	Withdrawals/ dropouts	Global rating	Additional notes
								No reliable method of assessing frequency of practice.
9. Held, et al. (2018)	Moderate	Moderate	N/A	Weak	Strong	Weak	Weak	Small sample size. High attrition rate 62%. No control group. No blinding for ps and outcome assessors.
10. Johnson & O'Brien (2013)	Weak	Moderate	Strong	Weak	Moderate	Moderate	Weak	Self-selecting and relatively homogeneous sample (mostly female university students). Blinding status of ps and outcome assessors not clear. 33% attrition rate.
11. Kamboj et al. (2018)	Weak	Moderate	N/A	Weak	Moderate	Strong	Weak	Similar to Kamboj et al. (2015) with the exception that the composition of the MDMA consumed by ps was properly assessed.

Authors (Year)	Selection bias	Design	Confounders	Blinding	Data collection methods	Withdrawals/ dropouts	Global rating	Additional notes
12. Kamboj et al. (2015)	Weak	Moderate	N/A	Weak	Moderate	Strong	Weak	Small and self-selecting sample. Ps not likely to be representative in terms of response to MDMA. Poor analysis of drug composition and use. Potentially unreliable self-report of drug use. No control group. No blinding for ps and outcome assessors. Contextual factors associated with naturalistic drug use (i.e. ps being tested in their own homes) may have influenced behaviour in intervention.
13. Kelly & Carter (2015)	Weak	Moderate	Strong	Weak	Moderate	Strong	Weak	Self-selecting and demographically homogenous sample (female Caucasians). No blinding for ps and outcome assessors. Self-report of binge eating frequency and intervention-specific practice compliance may have been susceptible to reporting bias. Intention-to-treat analyses. Inclusion of food planning and monitoring in intervention conditions may compromise intervention integrity.

Authors (Year)	Selection bias	Design	Confounders	Blinding	Data collection methods	Withdrawals/ dropouts	Global rating	Additional notes
14. Kelly & Waring (2018)	Weak	Moderate	Strong	Weak	Moderate	Weak	Weak	Self-selecting and homogeneous sample (university students) may not be representative of non-treatment seeking individuals with AN. No active treatment control condition. No blinding for ps and outcome assessors. Unclear psychometric support for one of the outcome measures. Withdrawals and drop-outs data not described.
15. Kelman et al. (2018)	Weak	Moderate	Strong	Moderate	Moderate	Moderate	Moderate	Self-selecting sample. 39% attrition rate. Blinding status of outcome assessor not clear. Intention-to-treat analysis.
16. Laidlaw et al. (2014)	Weak	Moderate	N/A	Weak	Strong	Weak	Weak	Self-selecting and small sample. 44% not returning final questionnaires. No control group. Significant missing data. No blinding for ps and outcome assessors. No method of assessing frequency of practice between sessions.

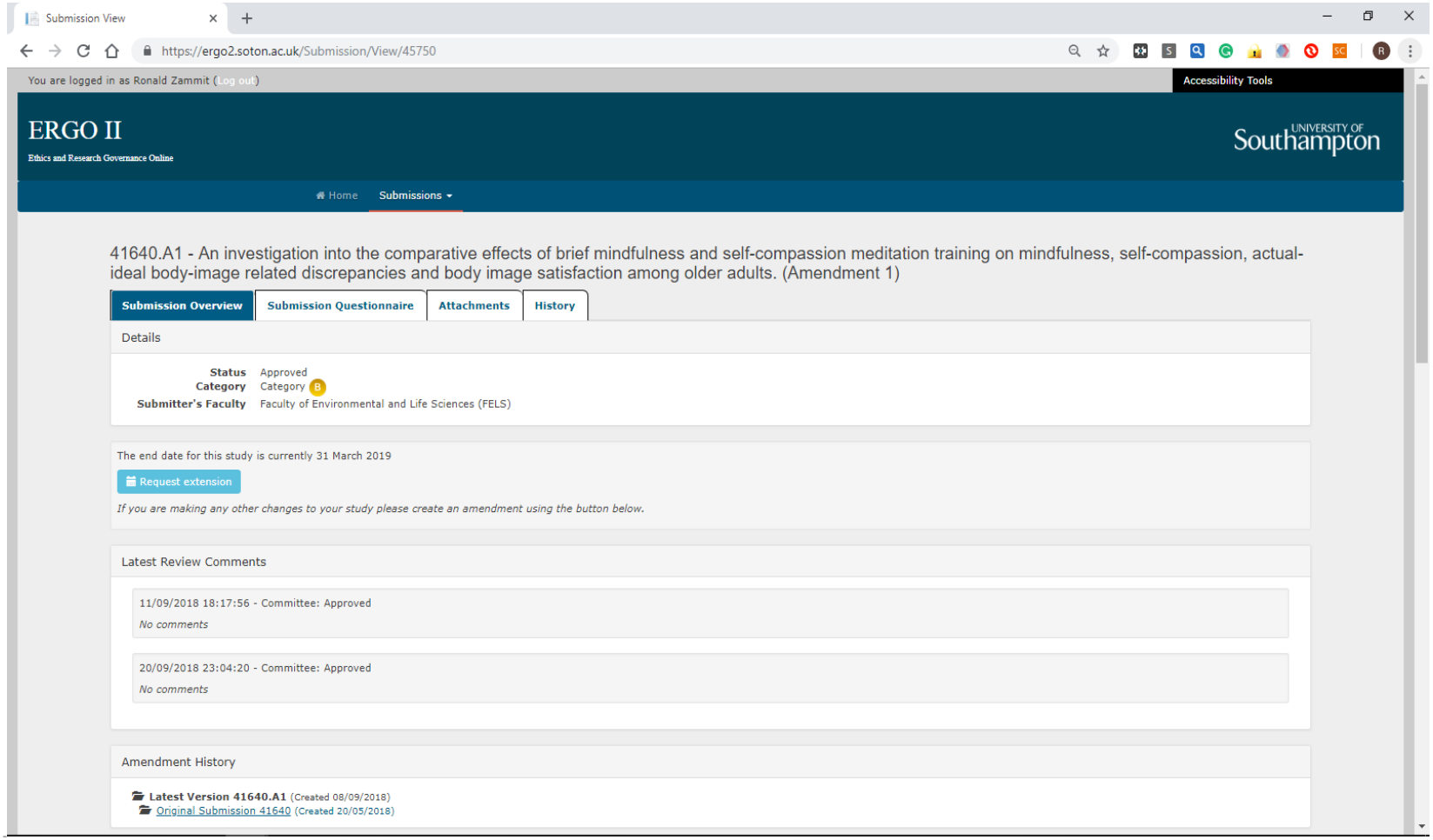
Authors (Year)	Selection bias	Design	Confounders	Blinding	Data collection methods	Withdrawals/ dropouts	Global rating	Additional notes
17. Matos et al. (2017)	Weak	Moderate	Strong	Weak	Strong	Moderate	Weak	Demographically homogeneous and self-selecting sample (mainly female college students) may limit generalisability. Randomisation method not described. No blinding for ps and outcome assessors. Use of self-report measures may increase risk of response bias due to social desirability effects. No reliable method of assessing frequency of practice.
18. McEwan & Gilbert (2015)	Weak	Moderate	N/A	Weak	Strong	Weak	Weak	Demographically homogeneous and self-selecting sample (university students) may limit generalisability. No control group. No blinding for outcome assessors. Blinding status of ps not clear. Withdrawals and drop-outs not explicitly described. No reliable method of assessing frequency of practice.

Authors (Year)	Selection bias	Design	Confounders	Blinding	Data collection methods	Withdrawals/ dropouts	Global rating	Additional notes
19. Mitchell et al. (2018)	Weak	Moderate	N/A	Weak	Moderate	Weak	Weak	Self-selecting sample may not be representative. No control group. Attrition rate 40.5%. Psychometric data not described for measures developed purposely for use in this study. No blinding for ps and outcome assessors. No reliable method of assessing frequency and duration of resource use. Intention-to-treat analysis.
20. Mosewich et al. (2013)	Moderate	Strong	Moderate	Weak	Moderate	Strong	Moderate	Sample of eligible athletes (i.e., those self-identifying as being self-critical in a way that is less constructive) not entirely generalisable. Confounding variables partially controlled for. Psychometric data for one of the measures not reported. Blinding status of ps not clear. No blinding for outcome assessors. No reliable method of assessing frequency of practice.

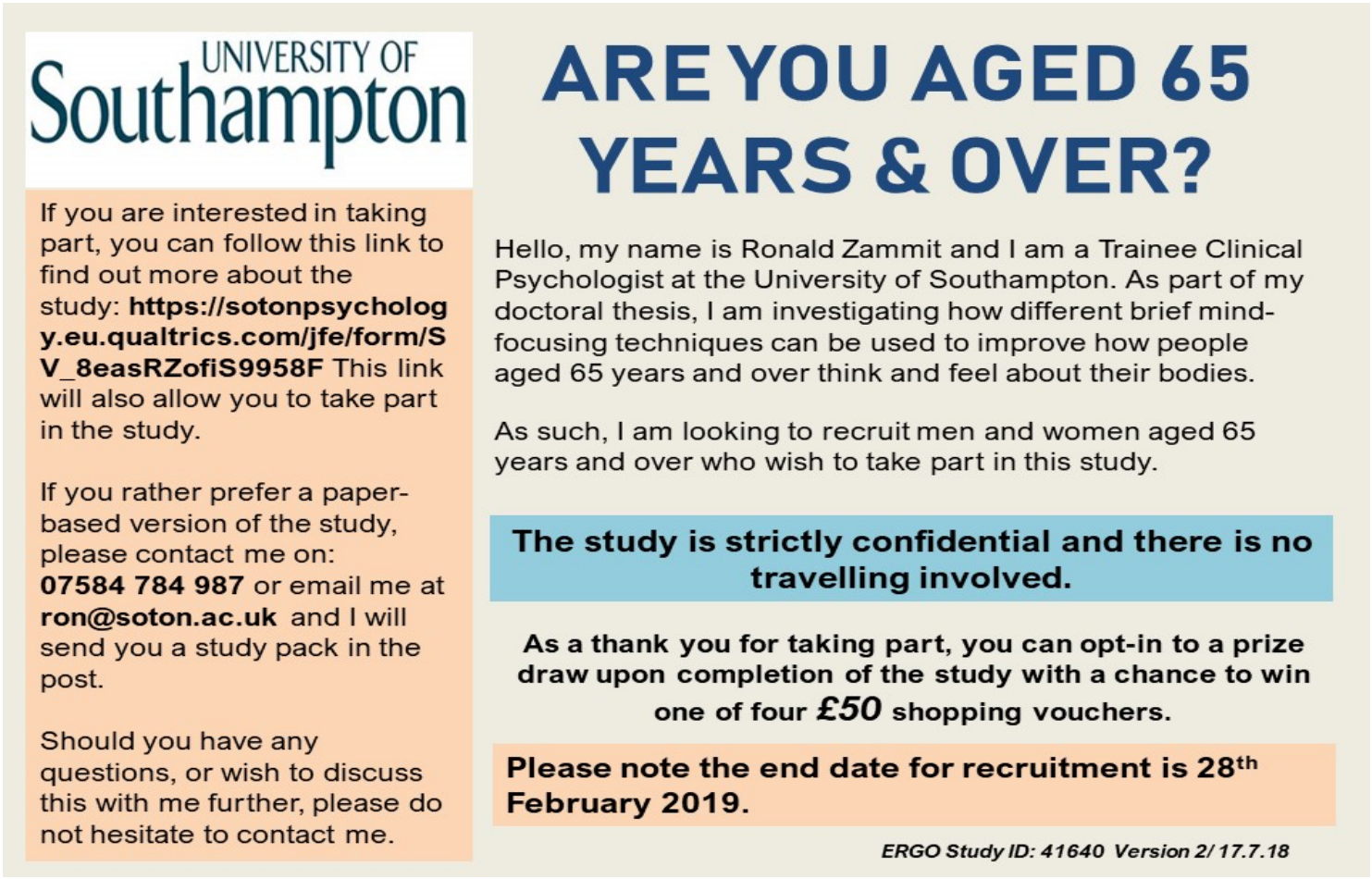
Authors (Year)	Selection bias	Design	Confounders	Blinding	Data collection methods	Withdrawals/ dropouts	Global rating	Additional notes
21. Naismith et al. (2017)	Moderate	Moderate	N/A	Weak	Strong	Weak	Weak	Small sample size. Sample of ps with PD may not be entirely generalisable as BPD was predominant diagnosis. High attrition rate of 68.9%. No control group. No blinding for ps and outcome assessors. Self-report method of assessing frequency of practice may not provide an accurate assessment of intervention adherence.
22. Rycroft (2016)	Moderate	Strong	Moderate	Weak	Strong	Moderate	Moderate	Small sample size. Sample may not be generalisable to individuals with PTSD as referral criteria did not require a formal PTSD diagnosis. Some confounding variables not controlled for. No blinding for ps and outcome assessors. No reliable method of assessing intervention adherence may have led ps to over-report practice time and frequencies due to social desirability effects.

Authors (Year)	Selection bias	Design	Confounders	Blinding	Data collection methods	Withdrawals/ dropouts	Global rating	Additional notes
23. Toole & Craighead (2016)	Weak	Moderate	Strong	Moderate	Moderate	Strong	Moderate	Self-selecting and demographically homogeneous sample (female university students) may not be representative. No blinding for outcome assessors. Self-reported height and weight may be influenced by social desirability effects. Intention-to-treat analyses. No reliable method of assessing intervention adherence.
24. Tsivos (2015)	Weak	Strong	Strong	Weak	Strong	Moderate	Weak	Self-selecting and demographically homogeneous sample (female university students) may not be representative. Sample may not be generalisable to clinical samples (i.e., individuals with ED symptoms). No blinding for ps and outcome assessor. Reasons for dropouts not provided. No reliable method of assessing intervention adherence. Possible practice effects not controlled for.

Appendix B Confirmation of Ethics Approval



Appendix C Research Study Advert



UNIVERSITY OF Southampton

If you are interested in taking part, you can follow this link to find out more about the study: **https://sotonpsychology.eu.qualtrics.com/jfe/form/SV_8easRZofiS9958F** This link will also allow you to take part in the study.

If you rather prefer a paper-based version of the study, please contact me on: **07584 784 987** or email me at **ron@soton.ac.uk** and I will send you a study pack in the post.

Should you have any questions, or wish to discuss this with me further, please do not hesitate to contact me.

ARE YOU AGED 65 YEARS & OVER?

Hello, my name is Ronald Zammit and I am a Trainee Clinical Psychologist at the University of Southampton. As part of my doctoral thesis, I am investigating how different brief mind-focusing techniques can be used to improve how people aged 65 years and over think and feel about their bodies.

As such, I am looking to recruit men and women aged 65 years and over who wish to take part in this study.

The study is strictly confidential and there is no travelling involved.

As a thank you for taking part, you can opt-in to a prize draw upon completion of the study with a chance to win one of four *£50* shopping vouchers.

Please note the end date for recruitment is 28th February 2019.

ERGO Study ID: 41640 Version 2/ 17.7.18

Appendix D Participant Information and Consent Statement (Online Version)

Participant Information and Consent Statement (Online Version) – Version 2/ 17.7.18

Study Title: An investigation of the impact of different mind-focusing techniques on how we feel and think about our bodies.

Researcher: Ronald Zammit

ERGO number: 41640

Please read this information carefully before deciding to take part in this research. It is up to you to decide whether or not to take part. If you are happy to participate you will be asked to confirm that you consent to participate in the study by checking the consent box at the bottom of this page.

What is the research about?

I am a Trainee Clinical Psychologist currently undertaking the Clinical Psychology (DClinPsych) program at the University of Southampton. This research is part of my doctoral thesis investigating the impact of different types of mind-focusing techniques on how people in your age group think and feel about their bodies.

Why have I been asked to participate?

You have been asked to participate because you responded to an advert regarding participation in this study.

What will happen to me if I take part?

If you decided to take part in this study, you will be asked to complete a number of questionnaires on two different occasions which will take approximately 45 minutes to an hour on each occasion. You will also undertake a 5-minute writing task related to how you feel and think about your body and listen to some brief audio-recordings of mind-focusing techniques over a period of two weeks.

Are there any benefits in my taking part?

You may find the mind-focusing techniques beneficial. Your participation will also help us to understand more about this topic and improve the lives of people in your age group.

Upon completion of the study, you will also have an opportunity to opt into a prize draw for a chance to win one of four £50 shopping vouchers as a gesture of thanks for taking part in this study.

Are there any risks involved?

You may experience some temporary emotional discomfort as a result of the brief writing task. Any discomfort should be temporary; however, if you become too uncomfortable while participating, you may withdraw at any time and your data will not be used. Given the nature of this study, you are advised not to take part in the study if you either have a current or have had a previous eating disorder.

Will my participation be confidential?

Your data is strictly confidential, and it will only be accessed by myself and my supervisors, Dr Catherine Brignell PhD, and Professor Lusia Stopa DPhil. Data will be stored securely on a password-protected document in line with the General Data Protection Regulation (2018) and University policy.

What happens if I change my mind?

Your participation is voluntary, and you may withdraw from the study at any time without giving any reason. However, it may not be possible to remove your data after the data has been analysed.

What will happen to the results of the research?

It is possible that the results of the research will be published in a peer-reviewed journal. The results will be reported only in aggregate form and, therefore, you will not be identifiable. The data may be also used anonymously in future ethically approved research studies. As per University policy, the data will be stored for a period of 10 years, and it will be permanently destroyed thereafter.

Where can I get more information?

If you have any questions or require any further information, please do not hesitate to contact me on [mobile phone number] or ron@soton.ac.uk

What happens if something goes wrong?

If you have any concerns or complaints, you can contact the University of Southampton Research Integrity and Governance Manager on +44 (0) 2380 595 058 or rgoinfo@soton.ac.uk

Thank you for taking the time to read this information sheet and considering taking part in the research.

By ticking the box at the bottom of this page, you are consenting that:

You have read and understood the above information and have had the opportunity to ask questions about the study.

You agree to take part in this research project and agree for your data to be used for the purpose of this study.

You understand your participation is voluntary and you may withdraw at any time without your legal rights being affected.

You understand the data may be used anonymously in future ethically approved research studies.

☐ **Please tick (check) this box to indicate that you consent to take part in this study.**

Appendix E Participant Information Sheet (Paper Version)

Participant Information Sheet (Paper Version) – Version 2/ 17.7.18

Study Title: An investigation of the impact of different mind-focusing techniques on how we feel and think about our bodies.

Researcher: Ronald Zammit

ERGO number: 41640

Please read this information carefully before deciding to take part in this research. It is up to you to decide whether or not to take part. If you are happy to participate you will be asked to sign a consent form which is attached to this information sheet.

What is the research about?

I am a Trainee Clinical Psychologist currently undertaking the Clinical Psychology (DClinPsych) program at the University of Southampton. This research is part of my doctoral thesis investigating the impact of different types of mind-focusing techniques on how people in your age group think and feel about their bodies.

Why have I been asked to participate?

You have been asked to participate because you responded to an advert regarding participation in this study.

What will happen to me if I take part?

If you decided to take part in this study, you will be asked to complete a number of questionnaires on two different occasions which will take approximately 45 minutes to an hour on each occasion. You will also undertake a 5-minute writing task related to how you feel and think about your body and listen to some brief audio-recordings of mind-focusing techniques over a period of two weeks.

Are there any benefits in my taking part?

You may find the mind-focusing techniques beneficial. Your participation will also help us to understand more about this topic and improve the lives of people in your age group.

Upon completion of the study, you will also have an opportunity to opt into a prize draw for a chance to win one of four £50 shopping vouchers as a gesture of thanks for taking part in this study.

Are there any risks involved?

You may experience some temporary emotional discomfort as a result of the brief writing task. Any discomfort should be temporary; however, if you become too uncomfortable while participating, you may withdraw at any time and your data will not be used. Given the nature of this study, you are advised not to take part in the study if you either have a current or have had a previous eating disorder.

Will my participation be confidential?

Your data is strictly confidential, and it will only be accessed by myself and my supervisors, Dr Catherine Brignell, and Professor Lusia Stopa. Data will be stored securely on a password-protected document in line with the General Data Protection Regulation (2018) and University policy.

What happens if I change my mind?

Your participation is voluntary, and you may withdraw from the study at any time without giving any reason. However, it may not be possible to remove your data after the data has been analysed.

What will happen to the results of the research?

It is possible that the results of the research will be published in a peer-reviewed journal. The results will be reported only in aggregate form and, therefore, you will not be identifiable. The data may be also used anonymously in future ethically approved research studies. As per University policy, the data will be stored for a period of 10 years, and it will be permanently destroyed thereafter.

Where can I get more information?

If you have any questions or require any further information, please do not hesitate to contact me on [mobile phone number] or ron@soton.ac.uk

What happens if something goes wrong?

If you have any concerns or complaints, you can contact the University of Southampton Research Integrity and Governance Manager on +44 (0) 2380 595 058 or rgoinfo@soton.ac.uk

What do I need to do know?

If you are happy to participate, please complete the consent form attached to this information sheet.

Thank you for taking the time to read this information sheet and considering taking part in the research.

Appendix F Consent Form (Paper Version)

Consent Form (Paper Version) – Version 2/ 17.7.18

Study Title: An investigation of the impact of different mind-focusing techniques on how we feel and think about our bodies.

Researcher: Ronald Zammit

ERGO number: 41640

Please initial the box(es) if you agree with the statement(s):

I have read and understood the information sheet (17.7.18/ Version 2) and have had the opportunity to ask questions about the study.	
I agree to take part in this research project and agree for my data to be used for the purpose of this study.	
I understand my participation is voluntary and I may withdraw at any time for any reason without my rights being affected.	
I understand that my data may be anonymised and used in future ethically approved research studies.	

Name of participant (print name) ……

Signature of participant……

Date ……

Name of researcher (print name) ……

Signature of researcher ……

Date

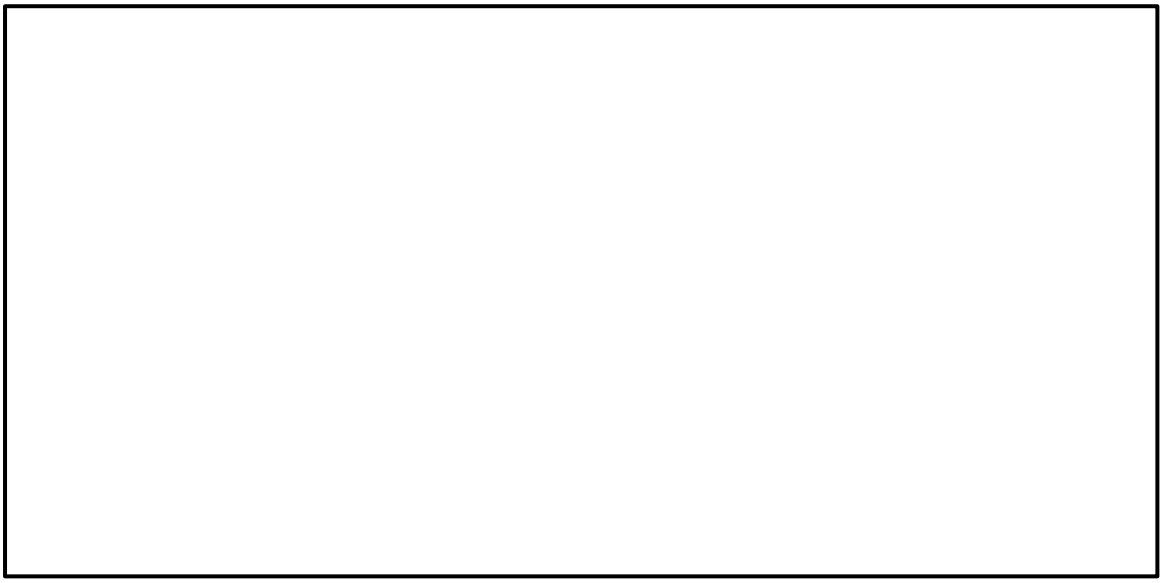
Appendix G Negative Body Image Induction Task

Please spend the next **5 minutes** writing about something about your body that you really dislike using the text box below. Do not worry about grammar, spelling, or style.

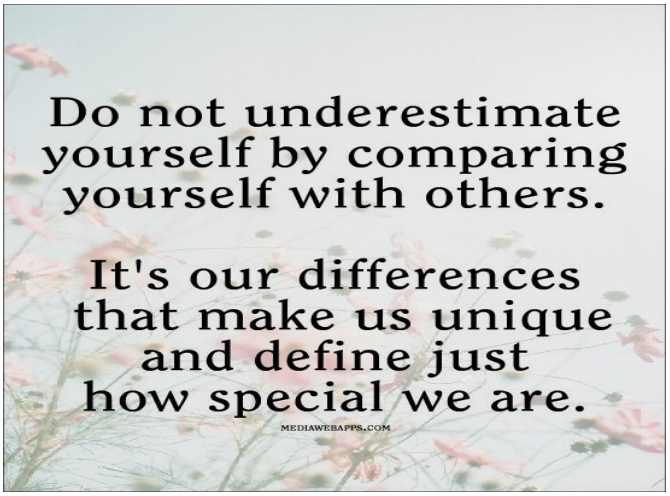
Try to describe in as much detail as possible what it is about your body that you dislike (for example size, shape, appearance, body functioning, health and fitness), when it was that you started to dislike that thing, what you wish your body looked like, and how it compares with other people.

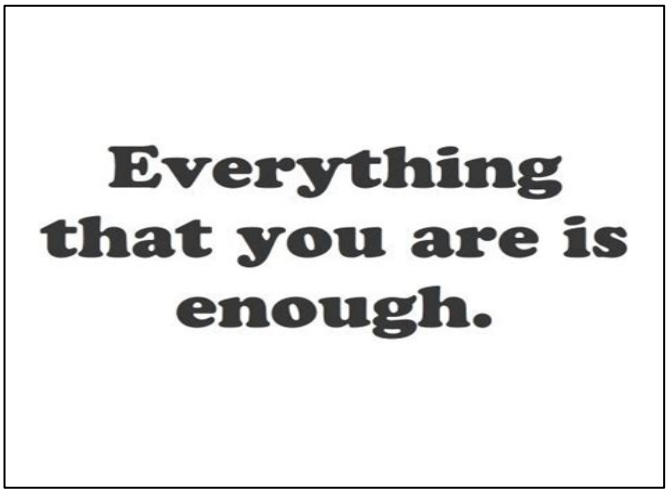
You have 5 minutes to complete this section, so please be as detailed and honest as possible and continue to write until the 5 minutes have passed. You will only be able to advance to the next section after 5 minutes. If you run out of things to write, just repeat what you have already written.

Your writing will be kept confidential and only my supervisors and I will review the writing. If for any reason you feel you need to contact me, please do so on [mobile phone number] or ron@soton.ac.uk



Appendix H Body Image Repair Task Images





Appendix I Debriefing Statement

Debriefing Statement (Version 2/ 17.7.18)

Study Title: An investigation of the impact of different mind-focusing approaches on how we feel and think about our bodies.

Researcher: Ronald Zammit

ERGO number: 41640

The aim of this research was to investigate the impact of different mind-focusing approaches on how people in your age group think and feel about their bodies. We are particularly interested in certain approaches, namely self-compassion, and mindfulness, as these approaches have shown to improve how people in younger age groups think and feel about their bodies.

Mindfulness and self-compassion are relatively new concepts in Western psychology. Mindfulness refers to the psychological process of bringing one's attention to experiences occurring in the present moment (Kabat-Zinn, 2013), whereas self-compassion has been defined as comprising three main components: self-kindness, common humanity, and mindfulness (Neff, 2003a). While there is emerging evidence that these approaches can help to improve how people think and feel about their bodies (Albertson, Neff & Dill-Shackleford, 2015), there is no existing research on the effectiveness of these approaches within the older adult population.

The first part of the study involved completing some questionnaires and undertaking a 5-minute writing task, which was designed to induce a temporary sense of body image dissatisfaction. You were then allocated randomly to the ……. condition, which was one of the three conditions in this study. Participants in the other two conditions received either brief ……. or …… training. You then repeated the 5-minute writing task and completed again the same questionnaires that you completed at the beginning of the study. The study was designed in this way because we are interested in comparing the impact of each of the three conditions on how we feel and think about our bodies.

Importantly, your data will help to raise awareness of the importance of helping people in your age group to think and feel better about their bodies. It will also help other researchers to develop a better understanding of this topic and may also give them ideas for further research in this area.

Once again, all the information you provided is confidential and you will not be identifiable in the final report or any publication of the findings. Data will be stored securely on a password-protected document in line with the General Data Protection Regulation (2018) and University policy.

While it is possible that this study may have caused you some temporary emotional discomfort, please contact your GP and request an emergency appointment or go to your nearest Accident and Emergency Department if you are feeling very distressed or suicidal. You can also contact the Samaritans on 116 123.

If you have questions about your rights as a participant in this research, or if you feel that you have been placed at risk, you may contact the University of Southampton Research Integrity and Governance Manager on +44 (0) 2380 595 058 or rgoinfo@soton.ac.uk

If you would like to receive a copy of the findings of my thesis when it is completed (or a summary of the findings), or if you have any further questions or comments, please do not hesitate to email me at ron@soton.ac.uk

If you would like to find out more about self-compassion and mindfulness, please find below some useful links:

http://self-compassion.org/

https://centerformsc.org/

If you would like to opt into the prize draw for a chance to win one of four £50 shopping vouchers, please click on the "I accept" box at the bottom of this page. Once you have clicked "I accept", we will email you a separate link to a short survey which will ask you to provide your address.

If you are one of the four successful winners, your gift voucher will be sent to you in the post.

Thank you once again for your participation in this research.

References

Albertson, E.R., Neff, K.D., & Dill-Shackleford, K.E. (2015). Self-compassion and body dissatisfaction in women: a randomised controlled trial of a brief meditation intervention. *Mindfulness*, 1-11.

Kabat-Zinn, J. (2013). *Full catastrophe living: using the wisdom of your body and mind to face stress, pain, and illness*. New York: Bantam Dell.

Neff, K.D. (2003a). Self-compassion: an alternative conceptualisation of a healthy attitude towards oneself. *Self-Identity*, 2, 85-102.

Appendix J Body Image State Scale (BISS)

For each of the items below, check the box beside the one statement that best describes how you feel **RIGHT NOW**, **AT THIS VERY MOMENT**. Read the items carefully to be sure the statement you choose accurately and honestly describes how you feel right now.

Right now I feel…

Extremely dissatisfied with my physical appearance ☐
Mostly dissatisfied with my physical appearance ☐
Moderately dissatisfied with my physical appearance ☐
Slightly dissatisfied with my physical appearance ☐
Neither dissatisfied nor satisfied with my physical appearance ☐
Slightly satisfied with my physical appearance ☐
Moderately satisfied with my physical appearance ☐
Mostly satisfied with my physical appearance ☐
Extremely satisfied with my physical appearance ☐

Right now I feel…

Extremely satisfied with my body size and shape ☐
Mostly satisfied with my body size and shape ☐
Moderately satisfied with my body size and shape ☐
Slightly satisfied with my body size and shape ☐
Neither dissatisfied nor satisfied with my body size and shape ☐
Slightly dissatisfied with my body size and shape ☐
Moderately dissatisfied with my body size and shape ☐
Mostly dissatisfied with my body size and shape ☐
Extremely dissatisfied with my body size and shape ☐

Right now I feel…

Extremely dissatisfied with my weight ☐
Mostly dissatisfied with my weight ☐
Moderately dissatisfied with my weight ☐
Slightly dissatisfied with my weight ☐
Neither dissatisfied nor satisfied with my weight ☐
Slightly satisfied with my weight ☐
Moderately satisfied with my weight ☐
Mostly satisfied with my weight ☐
Extremely satisfied with my weight ☐

Right now I feel…

Extremely physically ***attractive*** ☐
Very physically ***attractive*** ☐
Moderately physically ***attractive*** ☐
Slightly physically ***attractive*** ☐
Neither attractive nor unattractive ☐
Slightly physically ***unattractive*** ☐

Moderately physically ***unattractive*** □
Very physically ***unattractive*** □
Extremely physically ***unattractive*** □

Right now I feel…

A great deal worse about my looks than I usually feel □
Much worse about my looks than I usually feel □
Somewhat worse about my looks than I usually feel □
Just slightly worse about my looks than I usually feel □
About the same about my looks as usual □
Just slightly better about my looks than I usually feel □
Somewhat better about my looks than I usually feel □
Much better about my looks than I usually feel □
A great deal better about my looks than I usually feel □

Right now I feel that I look…

A great deal better than the average person looks □
Much better than the average person looks □
Somewhat better than the average person looks □
Just slightly better than the average person looks □
About the same as the average person looks □
Just slightly worse than the average person looks □
Somewhat worse than the average person looks □
Much worse than the average person looks □
A great deal worse than the average person looks □

Appendix K Body Image Ideals Questionnaire (BIQ)

Instructions. Please read carefully:

Each item on this questionnaire deals with a different physical characteristic. For each characteristic, think about how you would describe yourself as you actually are. Then think about how you wish you were. The difference between the two reveals how close you come to your personal ideal. In some instances, your looks may closely match your ideal. In other instances, they may differ considerably. On Part A of each item, rate how much you resemble your personal physical ideal by circling a number from 0 to 3.

Your physical ideals may differ in their importance to you, regardless of how close you come to them. You may feel strongly that some ideals embody the way you want to look or to be. In other areas, your ideals may be less important to you. On Part B of each item, rate how important your ideal is to you by circling a number on the 0 to 3 scale.

A. My ideal height is:

0	1	2	3
Exactly As I Am	Almost As I Am	Fairly Unlike Me	Very Unlike Me

B. How important to you is your ideal height?

0	1	2	3
Not Important	Somewhat Important	Moderately Important	Very Important

2. A. My ideal skin complexion is:

0	1	2	3
Exactly As I Am	Almost As I Am	Fairly Unlike Me	Very Unlike Me

B. How important to you is your ideal skin complexion?

0	1	2	3
Not Important	Somewhat Important	Moderately Important	Very Important

3. A. My ideal hair texture and thickness are:

0	1	2	3
Exactly As I Am	Almost As I Am	Fairly Unlike Me	Very Unlike Me

B. How important to you are your ideal hair texture and thickness?

0	1	2	3
Not Important	Somewhat Important	Moderately Important	Very Important

4. A. My ideal facial features (eyes, nose, ears, facial shape) are:

0	1	2	3
Exactly As I Am	Almost As I Am	Fairly Unlike Me	Very Unlike Me

B. How important to you are your ideal facial features?

0	1	2	3
Not Important	Somewhat Important	Moderately Important	Very Important

5. A. My ideal muscle tone and definition is:

0	1	2	3
Exactly As I Am	Almost As I Am	Fairly Unlike Me	Very Unlike Me

B. How important to you is your ideal muscle tone and definition?

0	1	2	3
Not Important	Somewhat Important	Moderately Important	Very Important

6. A. My ideal body proportions are:

0	1	2	3
Exactly As I Am	Almost As I Am	Fairly Unlike Me	Very Unlike Me

B. How important to you are your ideal body proportions?

0	1	2	3
Not Important	Somewhat Important	Moderately Important	Very Important

7. A. My ideal weight is:

0	1	2	3
Exactly As I Am	Almost As I Am	Fairly Unlike Me	Very Unlike Me

B. How important to you is your ideal weight?

0	1	2	3
Not Important	Somewhat Important	Moderately Important	Very Important

8. A. My ideal chest size is:

0	1	2	3
Exactly As I Am	Almost As I Am	Fairly Unlike Me	Very Unlike Me

B. How important to you is your ideal chest size?

0	1	2	3
Not Important	Somewhat Important	Moderately Important	Very Important

9. A. My ideal physical strength is:

0	1	2	3
Exactly As I Am	Almost As I Am	Fairly Unlike Me	Very Unlike Me

B. How important to you is your ideal physical strength?

0	1	2	3
Not Important	Somewhat Important	Moderately Important	Very Important

10. A. My ideal physical coordination is:

0	1	2	3
Exactly As I Am	Almost As I Am	Fairly Unlike Me	Very Unlike Me

B. How important to you is your ideal physical coordination?

0	1	2	3
Not Important	Somewhat Important	Moderately Important	Very Important

11. A. My ideal overall physical appearance is:

0	1	2	3
Exactly As I Am	Almost As I Am	Fairly Unlike Me	Very Unlike Me

B. How important to you is your overall physical appearance?

0	1	2	3
Not Important	Somewhat Important	Moderately Important	Very Important

Appendix L Body Image Scale for Older Adults (BIS-OA)[23]

Listed below are a number of statements. Please read each statement carefully. Using the scale below, indicate your answer by writing the number for each statement in the blank which best describes your level of agreement. There are no right or wrong answers. Your answers are anonymous, so please do not write your name on any of the materials.

Strongly disagree	**Disagree**	**Somewhat disagree**	**Somewhat agree**	**Agree**	**Strongly agree**
1	2	3	4	5	6

_____ 1. I have always been confident about my physical appearance.
_____ 2. I do things to increase my physical strength.
_____ 3. I am satisfied with my weight.
_____ 4. It is important to me that I look good.
_____ 5. I am content with my physical appearance.
_____ 6. My physical fitness is very good for my age.
_____ 7. I take special care with my hair grooming.
_____ 8. I look as good as anyone else my age.
_____ 9. I am in control of my health.
_____ 10. When it comes to physical appearance, I have high standards.
_____ 11. On the whole, I am satisfied with myself.
_____ 12. Before going out, I make sure that I look as good as I possibly can.
_____ 13. I have deliberately developed a healthy lifestyle.
_____ 14. My physical appearance is just as important to me now as it was when I was younger.
_____ 15. The way my body looks, is far from what I would like it to look *(reverse scoring)*.
_____ 16. I try to be as active as I can.
_____ 17. I am careful to buy clothes that will make me look my best.
_____ 18. I am a physically healthy person.
_____ 19. Being physically fit has always been important to me.

[23] Used with permission of one of the authors (Dr Eyal Gringart).

Appendix M Self-Compassion Scale (SCS) [24]

How I Typically Act Towards Myself in Difficult Times

Please read each statement carefully before answering. To the left of each item, indicate how often you behave in the stated manner, using the following scale:

Almost never				**Almost always**
1	2	3	4	5

_____ 1. I'm disapproving and judgmental about my own flaws and inadequacies.
_____ 2. When I'm feeling down, I tend to obsess and fixate on everything that's wrong.
_____ 3. When things are going badly for me, I see the difficulties as part of life that everyone goes through.
_____ 4. When I think about my inadequacies, it tends to make me feel more separate and cut off from the rest of the world.
_____ 5. I try to be loving towards myself when I'm feeling emotional pain.
_____ 6. When I fail at something important to me, I become consumed by feelings of inadequacy.
_____ 7. When I'm down and out, I remind myself that there are lots of other people in the world feeling like I am.
_____ 8. When times are really difficult, I tend to be tough on myself.
_____ 9. When something upsets me, I try to keep my emotions in balance.
_____ 10. When I feel inadequate in some way, I try to remind myself that feelings of inadequacy are shared by most people.
_____ 11. I'm intolerant and impatient towards those aspects of my personality I don't like.
_____ 12. When I'm going through a very hard time, I give myself the caring and tenderness I need.
_____ 13. When I'm feeling down, I tend to feel like most other people are probably happier than I am.
_____ 14. When something painful happens, I try to take a balanced view of the situation.
_____ 15. I try to see my failings as part of the human condition.
_____ 16. When I see aspects of myself that I don't like, I get down on myself.
_____ 17. When I fail at something important to me, I try to keep things in perspective.
_____ 18. When I'm really struggling, I tend to feel like other people must be having an easier time of it.
_____ 19. I'm kind to myself when I'm experiencing suffering.
_____ 20. When something upsets me, I get carried away with my feelings.
_____ 21. I can be a bit cold-hearted towards myself when I'm experiencing suffering.
_____ 22. When I'm feeling down, I try to approach my feelings with curiosity and openness.
_____ 23. I'm tolerant of my own flaws and inadequacies.
_____ 24. When something painful happens, I tend to blow the incident out of proportion.
_____ 25. When I fail at something that's important to me, I tend to feel alone in my failure.
_____ 26. I try to be understanding and patient towards those aspects of my personality I don't like.

[24] Masters and doctoral dissertation students have (Dr K. D. Neff) permission to use and publish the Self-Compassion Scale (SCS) in their theses.

Appendix N Five Facets Mindfulness Questionnaire – Short Form (FFMQ-SF) [25]

Please rate each of the following statements using the scale provided. Write the number in the blank that best describes *your own opinion* of what is *generally true of you*.

Never or very rarely true	Rarely true	Sometimes true	Often true	Very often or always true
1	2	3	4	5

_____ 1. I'm good at finding words to describe my feelings.
_____ 2. I can easily put my beliefs, opinions, and expectations into words.
_____ 3. I watch my feelings without getting lost in them.
_____ 4. I tell myself I shouldn't be feeling the way I'm feeling.
_____ 5. It's hard for me to find the words to describe what I'm thinking.
_____ 6. I pay attention to physical experiences, such as the wind in my hair or sun on my face.
_____ 7. I make judgments about whether my thoughts are good or bad.
_____ 8. I find it difficult to stay focused on what's happening in the present.
_____ 9. When I have distressing thoughts or images, I "step back" and am aware of the thought or image without getting taken over by it.
_____ 10. Generally, I pay attention to sounds, such as clocks ticking, birds chirping, or cars passing.
_____ 11. When I feel something in my body, it's hard for me to find the right words to describe it.
_____ 12. It seems I am "running on automatic" without much awareness of what I'm doing.
_____ 13. When I have distressing thoughts or images, I feel calm soon after.
_____ 14. I tell myself that I shouldn't be thinking the way I'm thinking.
_____ 15. I notice the smells and aromas of things.
_____ 16. Even when I'm feeling terribly upset, I can find a way to put it into words.
_____ 17. I rush through activities without being really attentive to them.
_____ 18. Usually when I have distressing thoughts or images, I am able just to notice them without reacting.
_____ 19. I think some of my emotions are bad or inappropriate and I shouldn't feel them.
_____ 20. I notice visual elements in art or nature, such as colours, shapes, textures, or patterns of light and shadow.
_____ 21. When I have distressing thoughts or images, I just notice them and let them go.
_____ 22. I do jobs or tasks automatically without being aware of what I'm doing.
_____ 23. I find myself doing things without paying attention.
_____ 24. I disapprove of myself when I have illogical ideas.

[25] The FFMQ-SF is available to download for free on the main author's (Dr R. Baer) website (http://www.ruthbaer.com/academics/index.html).

Appendix O Compassionate Body Scan Script (Version 2/ 17.7.18)

Welcome to today's practice.

To begin, it's best to lie down on a bed, or sit in a comfortable chair or sofa. Rest on your back with your hands about six inches from your sides and your feet about shoulder-width apart. [5 seconds pause]

Then gently place one or two hands over your heart (or another soothing place), doing this as a reminder to bring kindness to yourself throughout this exercise. Feel the warmth and gentle touch of your hands, and take 3 deep, relaxing breaths. [15 seconds pause]

Then return your arms to your sides again. [5 seconds pause]

In this exercise, we will be bringing warm-hearted attention to each part of the body in a variety of ways, moving from one part to another, finding what works best for each of us. We will be inclining our awareness toward the body, perhaps as you might incline toward a young child.

If you have judgments or unpleasant associations with a particular body part, or if you experience physical discomfort, you may wish to place a hand on that part of your body as a gesture of kindness, perhaps imagining warmth and kindness flowing through your hand into your body.

And if an area of your body is too difficult to stay with, moving gently to another body part for the time being, allowing this exercise to be as gentle and peaceful as possible.

Start with your feet. Notice what your feet feel like. Are they warm or cool? [10 seconds pause]

Then notice if there is any discomfort there. [10 seconds pause]

If so, mentally soften the areas as if you were placing a warm towel on it. If you wish, bring some compassion to the area with words like, "there's a little pain there, it's okay". [15 seconds pause]

Just feel the sensations of your body – pleasure, pain, or nothing at all – and let every sensation be just as it is. You can take action to help your body feel better after this practice. [20 seconds pause]

Now bring a measure of gratitude to your feet. Your feet have such a small area, yet they hold up your entire body all day long. They work hard for us although we rarely pay any attention to them. [10 seconds pause]

If your feet feel good today, you can also extend gratitude for the discomfort they you don't have. [10 seconds pause]

If you have a lot of time, carefully move your loving attention from one toe to the next, or from one part of each foot to another, first one foot and then the next. [20 seconds pause]

Make sure that your awareness is saturated with tenderness, gratitude, and respect for each area of your feet. [15 seconds pause]

When you notice your mind has wandered, as it will after a few seconds, just return to the sensations in your body. If you are flooded with judgments or associations to a particular body part, put your hand on your heart again and breathe gently, and then return to the simple body sensations. If an area of your body is very difficult to stay with, then move to another body part for now. Let this exercise be gentle and peaceful. [25 seconds pause]

After you have given compassionate awareness to the sensation in your feet, move slowly to other parts of the body right up to the crown of your head, moving from your feet to your ankles, calves and shin, knees, etc.

As you move from one part of your body to another, return your awareness again and again to whatever sensations are present at the moment, making sure to bring gratitude, kindness, and respect to each body part. For example, remind yourself how hard your stomach works to digest your food, the effort of your neck holding up your head, and the way your eyes and ears guide, inform, and delight you all day long. [50 seconds pause]

When you have paid loving attention to each individual body part, put your hand on your heart again and give your entire body a final shower of affection. [15 seconds pause]

Then gently open your eyes. [5 seconds pause]

This is the end of today's practice. Thank you.

Appendix P Loving Kindness Meditation Script (Version 1/ 10.9.18)

Welcome to today's practice.

Please set aside a few minutes for the purpose of bringing warmth and good will into your life. Sit in a comfortable position, reasonably upright and relaxed. Close your eyes fully or partially, which ever makes you more comfortable. [5 seconds pause]

Take a few deep breaths to settle into your body and into the present moment. [15 seconds pause]

Put your hands over your heart to remind yourself that you are bringing not only attention, but loving attention, to your experience. Feel the warmth of your hands, the gentle pressure of your hands, and feel how your chest rises and falls beneath your hands with every breath.

[15 seconds]Now, bring to mind a person or other living being who naturally makes you smile. This could be a child, a family relative, your cat or dog – whoever naturally brings happiness to your heart. Perhaps it's a bird outside your window. Let yourself feel what it's like to be in that being's presence. Allow yourself to enjoy the good company. [30 seconds]

Now, recognise how vulnerable this loved one is – just like you, subject to sickness, aging, and death. Also, this being wishes to be happy and free from suffering, just like you and every other living being. Repeat softly and gently, feeling the importance of your words:

May you be safe; [5 seconds pause]

May you be peaceful; [5 seconds pause]

May you be healthy; [5 seconds pause]

May you live with ease. [5 seconds pause]

When you notice that your mind has wandered, return to the words and the image of the loved one you have in mind. Savour any warm feelings that may arise. Go slow. [30 seconds pause]

Now add yourself to your circle of good will. Put your hand over your heart for just a moment or for the rest of this practice, and feel the warmth and gentle pressure of your hand, saying:

May you and I be safe; [7 seconds pause]

May you and I be peaceful; [7 seconds pause]

May you and I be healthy; [7 seconds pause]

May you and I live with ease. [7 seconds pause]

Visualise your whole body in your mind's eye, notice any stress or uneasiness that may be lingering within you, and offer kindness to yourself:

May I be safe; [5 seconds pause]

May I be peaceful; [5 seconds pause]

May I be healthy; [5 seconds pause]

May I live with ease. [5 seconds pause]

Now, take a few breaths and just rest sit quietly in your own body for the next three minutes.

Know that you can return to the phrases anytime you wish.

You will be told when this practice has come to an end. [3-minute pause]

When you're ready, gently open your eyes and come back fully alert and awake. [10 seconds pause]

This is the end of today's practice. Thank you.

Appendix Q Mindful Body Scan Script (Version 2/ 17.7.18)

Welcome to today's practice.

To begin, it's best to lie down on a bed, or sit in a comfortable chair or sofa. Rest on your back with your hands about six inches from your sides and your feet about shoulder-width apart. [5 seconds pause]

Then let your eyes gently close, partially or fully. Although you may feel sleepy or your mind may drift while doing this exercise, the goal is to try and remain alert and aware of the present moment.

Let your shoulders drop down and away from your ears. Bring your attention to your breathing. Breathe in…and out… and just allow yourself to continue to breathe naturally.

The aim of this exercise is to bring awareness to the physical sensations in different parts of your body. Your mind is probably used to labelling these sensations as good or pleasurable; or bad, uncomfortable, or even painful. For this exercise, see if you are able to just notice what you feel without judgment – for example, do you notice tingling, warmth, pulsating, tightness, or other sensations. Again, it's not about whether these sensations are good or bad, it's just about noticing them.

Continue to breathe at your own pace, allowing each breathe to come as it may, without any conscious effort to change your breathing. Notice your lungs slowly fill with air when you breathe in and deflate when you breathe out. [10 seconds pause]

Now, bring your awareness to where your body makes contact with the couch or bed. On each outbreath, allow yourself to let go, to sink a little deeper into the surface below you. [20 seconds pause]

Scan your left foot for any sensations. Simply become aware of them. [10 seconds pause]

Scan your left calf. Notice and allow any sensations that may be present. [10 seconds pause]

Scan slowly, up through your thigh now. Allow yourself to feel any and all sensations. [10 seconds pause]

If you don't feel anything at the moment, that's okay. Just allow yourself to "not" feel anything.

If you do become aware of tension or other intense sensations in a particular part of your body, see if you can "breathe in" to it —using the in-breath to bring a gentle awareness to the sensations present in your body, without trying to change them. [20 seconds pause]

Now, scan for any sensation in your right foot, your calf and thigh. Simply notice all sensations and feel what is happening. Continue to bring awareness, and a gentle curiosity to the sensations in your right leg. [20 seconds pause]

The mind will inevitably wander away from the breath and the body from time to time, which is normal. When you notice your mind has wandered, gently acknowledge it, and then return your attention to the part of the body you intended to focus on. [15 seconds pause]

Now focus on your stomach. Feel it rising as you breathe in. Sinking as you exhale. Nice and slow. Your heart rate may slow down. This is normal. Remain aware of your stomach, and your breath. Breathe in… and out… Continue to notice any sensations in your stomach area. [20 seconds pause]

Now scan for any sensations in your left hand and arm. Simply become aware of the different sensations and feel what is happening. Continue to bring awareness, and a gentle curiosity to the sensations. Again, if you don't feel anything at the moment, that's okay. [20 seconds pause]

Scan for any sensations in your right hand and arm. Continue to bring awareness, and a gentle curiosity to the sensations. [20 seconds pause]

Come back up to your chest. Continue scanning up along your neck, and to your face. [15 seconds pause]

Feel the sensations in your jaw, and your throat. [15 seconds pause]

Notice how the back of your head rests against the surface under you. [15 seconds pause]

Bring your awareness to the top of your head. [15 seconds pause]

Now, take a moment to notice how *all* your body parts are connected. [10 seconds pause]

Let any sensations come to you. Just notice what kind of sensation it is – tingling, warmth, coolness, heaviness, floating. Accept whatever sensation there is as just that, a sensation that will arise and slowly and gradually change. It is just another part of you. [15 seconds pause]

Continue to focus on your breathing for the next few moments. When you are ready, slowly open your eyes and bring your attention back to your surroundings to mark the end of today's practice.

Thank you.

Appendix R Mindful Breathing Script (Version 2/ 17.7.18)

Welcome to today's practice.

Please find a quiet, comfortable place to sit. Rest on your back reasonably upright, with your hands resting wherever they're comfortable. [10 seconds pause]

Allow your eyes to gently close, or partially close, which ever makes you more comfortable. [5 seconds pause]

And you can notice your body from the inside, noticing the shape of your body, the weight, touch. And let yourself relax and become curious about your body, seated here. The sensations of your body… [5 seconds pause]

The touch [5 seconds pause]

The connection with the floor [5 seconds pause]

The chair [5 seconds pause]

Relax any areas of tightness or tension, just breathe, and soften. [20 seconds pause]

And now begin to tune into your breath, in your body, feeling the natural flow of the breath. [20 seconds pause]

You don't need to do anything to your breath, not long, not short, just natural. [25 seconds pause]

Notice where you feel your breath in your body. It might be in your abdomen, it might be in your chest or throat, or in your nostrils. See if you can feel the sensations of breath, one breath at a time. When one breath ends, the next breath begins. [40 seconds pause]

Now as you do this, you might notice that your mind might start to wander. You might start thinking about other things. If this happens, this is not a problem. It's very natural. Just notice that your mind has wandered. You can say "thinking" or "wandering" in your head softly, and then gently redirect your attention right back to the breathing. [30 seconds pause]

So, we'll stay with this for the next three minutes in silence, noticing your breath. From time to time getting lost in thought and returning to your breath.

You will be told when this practice has come to an end. [3-minute pause]

When you're ready, gently open your eyes and come back fully alert and awake. [10 seconds pause]

This is the end of today's practice. Thank you.

Appendix S Relaxing Visualisation Script (Version 2/ 17.7.18)

Welcome to today's practice.

Start by getting comfortable in a quiet place where you won't be disturbed for the next few minutes. You may want to lie down on the bed; however, if a lying-down position would likely put you to sleep, opt for a cross-legged position or recline in a comfortable chair. Try to position yourself in a way where your physical comfort will not be a distraction. [10 seconds pause]

Turn the lights down if you like. Turn off the phone and give yourself permission to devote some time to self-care. [5 seconds pause]

Take some time to focus on your breathing, and let yourself take a few nice, deep, full breaths. [10 seconds pause]

Let yourself breathe into your abdomen, bringing your breath all the way down into your belly, and allowing your out-breath to be a real letting-go kind of a breath. As if with that breath, you can begin to release any tension, or discomfort, or distraction that you don't need to hold on to. You're just using that breath to induce a state of peacefulness and relaxation centered within you. Allow yourself to imagine that when you breathe in, you're breathing in peace that's flowing through your whole body. And imagine that with every out-breath you just let go of a little bit of tension, a little bit of discomfort, a little distraction. So, you're breathing in peace, and you're letting the out-breath be a real letting go of tension.

Close your eyes fully or partially, which ever makes you more comfortable. Let any outside sounds around you be in the background of your awareness. They're not important to your purpose right now. If there ever is something you need to pay attention to, you're able to open your eyes and do that.

Keep focusing on your breathing for the next few moments, allowing yourself to feel more relaxed with every out-breath. [30 seconds pause]

Once you got to a relaxed state, begin to imagine a place that's very beautiful to you, very calm, peaceful and safe. [20 seconds pause]

It may be a place you've been to before, somewhere you've dreamed about going to, somewhere you've seen a picture of, or just a peaceful place you can create in your mind's eye. [30 seconds pause]

Look around you in that place, notice the colours, and shapes. What else do you notice? [25 seconds pause]

Now, notice the sounds that are around you, or perhaps the silence. Sounds far away and those nearer to you. Those that are more noticeable, and those that are subtler. [25 seconds pause]

Think about any smells you notice there. [25 seconds pause]

Then focus on any skin sensations - the earth beneath you or whatever is supporting you in that place, the temperature, any movement of air, anything else you can touch. [25 seconds pause]

Notice the pleasant physical sensations in your body whilst you enjoy this calm, peaceful, and safe place. [20 seconds pause]

Now, whilst you're in your peaceful, calm, and safe place, you might choose to give it a name, whether one word or a phrase that you can use to bring that image back, anytime you need to. [20 seconds pause]

You can choose to linger there for the next few moments, just enjoying the peacefulness and serenity of your surroundings, and letting yourself be far from what stresses you. [60 seconds pause]

When you feel ready to leave your peaceful, calm, and safe place, gently open your eyes and bring your awareness to where you are now and yourself back to alertness in the 'here and now'. [10 seconds pause]

This is the end of today’s practice. Please remember to turn your phone back on. Thank you.

Appendix T Controlled Breathing Script (Version 3/ 10.9.18)

Welcome to today's practice.

Start by getting comfortable in a quiet place where you won't be disturbed for the next few minutes. [10 seconds pause]

Turn the lights down if you like. Turn off the phone and give yourself permission to devote some time to self-care.

You can do this practice standing up, sitting in a chair that supports your back, or lying on a bed. [5 seconds pause]

Make yourself as comfortable as you can. If you can, loosen any clothes that restrict your breathing. [5 seconds pause]

If you're lying down, place your arms a little bit away from your sides, with the palms up. Let your legs be straight or bend your knees so your feet are flat on the floor [5 seconds pause]

If you're sitting, place your arms on the chair arms. If you're sitting or standing, place both feet flat on the ground. Whatever position you're in, place your feet roughly hip-width apart. [5 seconds pause]

Now, let your breath flow as deep down into your belly as is comfortable, without forcing it. It is important that the breathing is low down in your belly, and not high in the chest. You can check this by placing one hand on your stomach, and one on your chest. Try to keep the top hand still, your breathing should only move the bottom hand. [30 seconds pause]

Try breathing in through your nose and out through your mouth. Deliberately slow your breathing down and try to find a slow breathing rhythm that is comfortable for you. Some people find it helpful to breathe in to a count of 4, pause for a moment, then breathe out to a count of four. [40 seconds pause]

If you are finding it difficult to reach to four, try counting to three. You may also find it helpful to count in your head to begin with until you become more familiar with this practice…*in…two…three…. four…. pause…out…two…three…four… pause…in…two… three…. four…. pause…out…two…three…four… pause*.

The important thing is that the breathing is smooth, steady, and continuous, not jerky. Pay particular attention to your outbreath, making sure it is smooth and steady. [35 seconds pause]

Keep breathing in a slow, relaxed, and rhythmic way for the next three minutes …*in…two…three…. four…. pause…out…two…three…four… pause… in…two…three…. four…. pause…out…two…three…four… pause*.

You will be told when this practice has come to an end. [3-minute pause]

This is the end of today's practice. Please remember to turn your phone back on. Thank you.

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