

Review

## Health Benefits of (Mindful) Self-Compassion Meditation and the Potential Complementarity to Mindfulness-Based Interventions: A Review of Randomized-Controlled Trials

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### Abstract

**Background:** In this study, we performed a systematic review of randomized-controlled trials (RCTs) examining the health benefits of (mindful) self-compassion-based interventions (SCBIs) and studies which explicitly combine SCBIs and mindfulness-based interventions (MBIs). Based on the compelling evidence supporting the effectiveness of MBIs, we evaluated the potential use of MBIs and SCBIs to complement one another, and whether SCBIs may serve as supplementary, or preliminary interventions for individuals not fully benefitting from MBIs.



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**Methods:** Searches of the PubMed, PsycINFO and Web of Science databases were conducted from March to July 2018. Of 324 results for SCBIs, nine publications fulfilled the inclusion criteria.

**Results:** Current evidence demonstrates that SCBIs achieve several psychological and clinical improvements in a variety of outcomes and populations, although primarily based on studies of females. Significant improvements included increased self-compassion and body-satisfaction in populations ranging from non-clinical female participants to clinical improvements in participants diagnosed with diabetes, binge-eating disorder and schizophrenia. The only study that explicitly combined MBIs and SCBIs showed significantly increased quality-of-life as well as a decrease in psychopathological symptoms in an all-female sample with overweight and obesity.

**Conclusions:** Although there is cause for optimism regarding the effects of SCBIs, additional methodologically rigorous RCT studies of the effects of these programs are still needed before a mature conclusion can be drawn about their health benefits. While we found preliminary evidence that self-compassion training may enhance improvements in MBIs for highly self-critical individuals, there is still too little evidence to draw any conclusions on the effectiveness of teaching SCBIs as an adjunct or as an introduction to MBIs. Future research should continue to examine SCBIs and investigate strategies to develop MBIs and SCBIs as newer, improved interventions.

### **Keywords**

(Mindful) self-compassion; meditation; mindfulness; health benefits; review

## **1. Introduction**

According to many psychologists, the field of clinical psychology and psychiatry is in crisis [1]. The level of response to treatments in populations with mental health issues has been less than desirable as too many continue to experience impairment after treatment [1]. Furthermore, increasing numbers of people are being prescribed medication, imposing a risk for additional side-effects. Although the treatment process in medical populations has improved, many experience side-effects from medication or report additional emotional, psychological, behavioral or cognitive difficulties [2]. These consequences can result in an inflated, and often debilitating, emotional response to potentially milder symptoms that are rarely addressed by conventional treatment approaches [3]. Thus, there is a need to examine and implement new treatments beyond those that are currently offered.

In the past few decades, interest in mindfulness-based interventions (MBIs) has increased considerably [4], as has the amount of scientific research investigating the effects of these types of programs in a wide range of populations [5]. MBIs encourage the patient to approach life and their disability with a sense of acceptance of their situation, allowing them to move beyond limiting beliefs [6]. Today, a growing body of research suggests that MBIs are effective for a wide range of mental and physical health disorders in adult and adolescent populations as well as in non-clinical populations [1, 4, 7, 8]. However, mindfulness practice can be perceived as 'difficult' by some

individuals, particularly for participants with persistent unhealthy or dysfunctional patterns [9], thus limiting the benefit of the interventions. These individuals are often harsh and critical in their opinions about themselves and/or others, and are often tormented by feelings of shame, guilt, unworthiness or a sense of being wronged [9]. According to Brink and Koster (2015), the persistent nature of their complaints, symptoms and unhealthy habits can easily reverse the sense of calm derived from MBIs. This perception can discourage compliance with MBIs [10] and the continuation of practicing mindfulness at home, which research has shown is central to the effects of MBIs [4, 11, 12]. Moreover, relapse rates (38%) and mild levels of depression remain considerable in many recurrently depressed patients after undertaking mindfulness-based cognitive therapy (MBCT) [13, 14]. Thus, there is still room for improvement in MBIs, and a continuous evaluation of strategies to improve these interventions is still required.

Kuyken and colleagues [15] showed that the effects of MBCT on relapse/recurrence of depression in recurrently depressed individuals were mediated by increased self-compassion and mindfulness, along with a decoupling of the relationship between reactivity to depressive thinking and poor outcome. The cultivation of self-compassion was associated with this decoupling in the intervention group. Some studies have indicated that self-compassion is the most critical factor in the mechanism by which MBIs mediate their treatments effects [10, 15] to improve well-being [16] and psychological health in people with anxiety and depression [17]. This has been supported by multiple studies indicating that self-compassion is a stronger predictor of psychological well-being [18], depression, anxiety, happiness, and life satisfaction, as well as positive and negative effects [19] compared to mindful attention. Similarly, another study of the potential mechanisms underlying the success of MBIs showed that self-compassion was a strong predictor of reductions in anxiety, worry, and depression, in addition to improvements in quality-of-life, accounting for as much as a 10-fold increase in the unique variance in the dependent variables than that achieved by mindfulness attention alone [17]. Mediation analysis of data from a randomized-controlled trial (RCT) examining mindfulness and self-compassion as potential mediators of the effects of MBSR in 56 non-clinical participants [20] indicated that increased self-compassion mediated the effects of this intervention on worry, while the effects on difficulties in emotional regulation were mediated by increased mindfulness. Moreover, other studies have suggested that mindfulness practice or the mindfulness trait are the key mechanisms that underlying the many positive effects of MBSR and other mindfulness meditation practices [1, 21].

Although most MBIs introduce an attitude of loving-kindness and self-compassion, and studies have shown that MBIs develop the ability to be self-compassionate [22, 23], those capacities are mainly taught implicitly as the primary emphasis is on teaching mindfulness [24].

For this reason we have turned our attention to self-compassion-based interventions (SBCIs), in particular the relatively new mindful self-compassion (MSC) developed by Kristin Neff and Chris Germer [24]. This intervention includes mindfulness as a core element in addition to developing the capacity to actively soothe and comfort oneself during challenging times. Although MSC is a newer field of research, it is an ancient idea that represents the cornerstone of many religious and spiritual traditions [25].

Self-compassion can be defined as having an accepting, empathic, and kind attitude toward oneself during moments of suffering [26]. Over recent years, self-compassion has attracted the attention of the scientific community, especially within the fields of psychology and mental health, because of its perceived benefits on psychological health. One important aspect of self-

compassion is that the attitude of kindness toward the self does not result from ignoring suffering, but rather from recognizing and responding sympathetically to suffering. Self-compassion is known to have three main components: *common humanity* is an understanding that our own failures, shortcomings, and suffering are shared universally by others; *self-kindness* involves a supportive, caring attitude toward oneself [26] and *mindfulness*. Mindfulness has been operationalized in many different ways in the scientific literature, and there has been a rich scholarly dialog regarding how it should be defined as a construct [4]. Most often, mindfulness is defined as the awareness that arises through actively paying attention with an attitude of curiosity and kindness [27]. Within the context of MSC, mindfulness is further defined as a non-judgmental, accepting, and equitable awareness of one's suffering. Importantly, this attitude of kind acceptance toward experience is not one of passive resignation to one's current circumstances, but rather one of inviting experiences, even if they are difficult [4]. An understanding of the importance of mindful awareness and how it teaches the person to see with clarity and discernment [5] is essential, because how one chooses to perceive each moment can control how one's reality is generated.

Primary research on SCBIs, particularly MSC, show that self-compassion leads to better mental and physical health and well-being in both healthy and chronically ill populations [26,28–30].

Although there is a growing interest in integrating MSC and MBIs, research on how these different yet related approaches might be integrated into comprehensive interventions is less well established [31].

In this study, we performed the first qualitative review of the health benefits of SCBIs by highlighting the key points and issues from the selected studies. This information will lay the foundation for our further exploration and discussion of the potential for the complementary use of these two types of interventions.

Methodological rigor is essential for the evaluation of such interventions. A recent meta-analysis of the current state of knowledge and future directions of compassion-based interventions emphasized the need for more randomized trials with larger sample sizes [32]. Thus, in this review, we only included studies that met these criteria to minimize the methodological limitations of previous reviews.

## **2. Materials and Methods**

The literature search and retrieval was undertaken on the PubMed, PsycINFO and Web of Science databases in March 2018, with manual searches continued until July 2018. The searches yielded 324 results for SCBIs. Preliminary sorting conducted primarily based on abstract, title and method yielded nine relevant articles for SCBIs and five for studies explicitly examining the combination of self-compassion and mindfulness. Thereafter, following a final, thorough selection, eight studies that fulfilled all inclusion criteria were selected for SCBIs and one study explicitly combining SCBIs and MBIs.

### **2.1 Inclusion Criteria**

1) Randomized-controlled trials; 2) (Mindful) self-compassion meditation-based interventions or compassion-focused therapy as the central component of interventions; 3) Either measures physical and/or psychological health benefits; 4) Written in English; 5) Shows validated,

continuous measurements of the health benefits and provides data before and after the interventions; 6)  $\geq 40$  participants to increase generalizability of findings and rule out the risk of type II errors (incorrectly concluding that an intervention is not effective).

## **2.2 Exclusion Criteria**

1) Reviews and meta-analysis; 2) Qualitative and speculative reports; 3) Experimental manipulation studies.

## **2.3 Systematic Searches**

Search strings used were as follows: RCT OR "randomized-controlled trial\*" OR "randomized-controlled-trial\*" AND self-compassion [Title/Abstract] OR self-compassion\* [Title/Abstract] OR "mindful self-compassion" [Title/Abstract] OR "compassion focused therapy" AND "meditation/methods" [Mesh] OR "meditation/psychology"[Mesh]) OR mindful [Title/Abstract]) OR mindful\*[Title/Abstract] OR meditation [Title/Abstract] OR mindfulness\*.

## **2.4 Review**

Table 1 provides a two-part matrix describing the studies across nine categories. Part I contains the studies investigating the health benefits of SCBIs, while Part II contains studies that explicitly examine the combination of self-compassion and mindfulness. We will now discuss the findings from each column and highlight the key points and issues.

**Table 1** A review of the literature on health benefits of Self-Compassion-Based Interventions

|   | Reference                                    | Intervention | Number of sessions / Duration of intervention   | Treatment Group (n), Type of Control Group (n)  | Number of participants (ITT) / Completers               | Main Variables Measured / Measurements   | Follow-up measured from endpoint | Main Findings  | Main Study Strengths  | Main Study Limitations  |
|---|--|--------------|---|---|---|--|----------------------------------|--|---|---|
| Part I: Self-Compassion Based Interventions |  |              |   |   |   |  |                                  |  |   |   |
| 1   | Friis, Johnson, Cutfield and Consedine, 2016 | MSC          | 8 weekly 2.5 hours sessions. E-mails 2 days after each session; summarized week's teachings & encouraged practicing tools from previous sessions. | 63 patients with either type 1 or type 2 diabetes. 18–70 years (mean 42.87, SD 14.30), 68% females. Treatment group (32); Wait-list TAU control group (31). | 63 total participants                                   | SCS, Symptoms of Major Depressive Disorder (PHQ-9), Diabetes Distress Scale and mean blood glucose levels (HbA1c values).                | 3 months                         | Significantly less levels of depression (*effect size =0.29) and diabetes-distress (effect size= 0.48) compared to control group. Results remained at follow-up              | Low dropout rate (6.30%).   | No active control comparisons.  |
| 2   | Albertson, Neff, and DillShackelford, 2015   | SCM          | Participants received a new podcast link every week for 3 weeks. 20 min / day for a week for each podcast.  | Women btw. 18-60 with body image concerns. Intervention group (98), Mage = 38.42; Wait-list control group (130), Mage = 36.42.                              | 479 expressed initial interest in study / 228 completed | SCS, Body dissatisfaction (Body Shape Questionnaire), Body shame (Body Consciousness Scale), BAS, The Contingencies of Self-Worth Scale. | 3 months                         | Significant reductions in body dissatisfaction (d=0.73), body shame (d=0.68) & contingent self-worth based on appearance (d=0.45). Sign. greater gains in SC (d=0.82) & body | Big sample size. Medium-strong effect sizes on most outcome measures. | Reports of how often participants meditated were reliant on self-reports. Inactive control group. App. 50% attrition rate at follow-up. Non-blinded |

|   |                           |           |  |   |             |   |                     |   |  |   |
|---|---------------------------|-----------|--|---|-------------|---|---------------------|---|--|---|
|   |                           |           |  |   |             |   |                     | appreciation (d=0.62) compared to controls. Results maintained at 3 months follow-up compared to pretest. |  | treatment allocation. Sample primarily white women from Western countries.  |
| 3 | Neff & Germer, 2013       | MSC       | 8-weekly 2h sessions   | Non-clinical population. MSC (24), Mage=51.21; 78% female; Wait-list controls (27), Mage=49.11; 82% female.       | 54/51       | SCS, The Cognitive and Affective Mindfulness Scale, Compassion Scale, Avoidance subscale of the Impact of Event. Other measures: Social Connectedness, Amount of formal & informal SC practice. | 6 months and 1 year | MSC-group increased self-compassion, mindfulness and well-being. Gains maintained at both follow-ups.     | Long follow-up measures. All participants completed 6- months follow-up.                     | Inactive control group. Only 15 participants completed 1-year follow-up. Participants were mostly highly educated, middle-aged females who had prior meditation experience, thus lack generalizability. |
| 4 | Toole and Craighead, 2016 | Brief SCM | Intervention was derived from Albertson et al. (2014); 20 min. training exercise delivered | Undergraduate women with body image concerns, 18-21yrs., (M=18.85, SD=0.87). Intervention (40); Wait-list control | 87/80 total | SCS, BMI, BAS, Rosenberg Self-Esteem Scale, Body Surveillance (OBCS), Body Shame, The Contingencies of Self- Worth Scale-   | No follow-up        | Positive correlation between SCM, reduced self-criticism, increased body appreciation and appearance-     | Objective tracking of meditation frequency, standardization of initial exposure to SC, and a | Low compliance with meditation practice instructions during the week. Inactive control group. Lack of control   |

|   |                                   |           |  |  |         |  |                       |  |   |  |
|---|-----------------------------------|-----------|--|--|---------|--|-----------------------|--|---|--|
|   |                                   |           | daily through podcasts for one week.   | (40).  |         | Appearance Subscale, Body dissatisfaction (BSQ).   |                       | contingent selfworth.  | high rate of return for post-intervention assessment.           | for compliance of meditations.   |
| 5 | Sommer s-Spijker man et al., 2018 | CFT       | 9-weeks; 7 home-practice lessons with weekly email guidance to encourage daily practice. | Adults (mean age=52.87, SD=9.99, 74.8% female) with low-moderate levels of well-being allocated to CFT (120) or wait-list (122). | 245/242 | Well-Being (Mental Health Continuum– Short Form), Depression & Anxiety (Hospital Anxiety and Depression Scale), Perceived Stress Scale, SCS– Short Form, Forms of Self-Criticizing/Attacking and Reassurance Scale, Positive and Negative Affect Schedule and Gratitude questionnaire. | 3-months and 9-months | CFT-group showed significant improvements on well-being at post intervention (d=0.51) & 3-months follow-up (d=0.39) compared to Wait-list control. On all secondary outcome measures but positive affect, intervention group showed sign. greater improvements at 3-month follow-up. At 9-month follow-up, improvements on all measures were retained or amplified among CFT participants. | Large sample size and long-term follow-up. High adherence rate. | Selection bias and overrepresentation of high-educated females in sample, thus limited generalizability. Only used self-administered questionnaires. Inactive control group. Participants not blinded. |
| 6 | Braehler et al. 2013              | CFT + TAU | 16 weeks/2 hours weekly sessions   | Adults diagnosed with schizophrenia-spectrum disorder allocated to either  | 40      | The Clinical Global Impression-Improvement Scale, Narrative Recovery Style   | No follow-up          | CFT-group showed significant clinical improvement, increased compassion,   | Blind assessments   | TAU group results were not very consistent, showed higher  |



|   |                      |                     |   |  |       |  |              |  |                                    |   |
|---|----------------------|---------------------|---|--|-------|--|--------------|--|------------------------------------|---|
|   |                      |                     |   | CFT+TAU (22), mean-age=43.2 (SD=12.5), 60% males, or TAU alone (18), mean age=40(SD=7.5), 50% males.   |       | Scale, Fear of Recurrence Scale, Personal Beliefs about Illness Questionnaire-Revised.   |              | reductions in depression and perceived social marginalization.   |                                    | levels of depression. Only Caucasian sample.  |
| 7 | Kelly & Carter, 2015 | CFT + food planning | 3 weeks   | Adults (mean age=45 years, SD=15) diagnosed with Binge-Eating Disorder assigned to either food planning + self-compassion exercises (15); Food planning + Behavioral strategies (13); or a Wait-list (13). | 41/35 | Binge eating frequency, Eating disorder symptoms (EDE-Q), BMI, SCS, Depressive symptoms (CES-D).   | No follow-up | CFT-group significantly reduced global eating disorder pathology (r=0.18-0.35), eating concerns, and weight concerns as well as sign. increase in self-compassion (r=0.35) more than the other conditions. | Active and inactive control groups | Small sample size, 75.6% of participants were Caucasian and 34/41 of participants were females, thus limited generalizability. Only self-report measures. |
| 8 | Smeets et al. 2014   | Brief SCM           | 3 weekly group meetings; The first two sessions lasted 1.5 hours, the last meeting 45 minutes + homework assignments. | Female college students, mean age of 19.96 years (SD=1.33), 100% European. SCM (n=27) or Control Group in which general time management skills were taught (n=22).   | 52/49 | SCS, Kentucky Inventory of Mindfulness Skills, Diener's Satisfaction with Life Scale, The Social Connectedness Scale- Revised, optimism (LOT- R), self-efficacy (GSE), | No follow-up | SCM-group showed significantly greater increases in self-compassion (d=1.19), mindfulness (d=0.70; 1.20), optimism (d=0.66), and self-efficacy (d=0.52),   | Active control group               | Sample consisted of 100% European students. Only self-reported measurements.  |

|   |                      |   |   |  |       |   |   |   |   |   |
|---|----------------------|---|---|--|-------|---|---|---|---|---|
|   |                      |   |   |  |       | mood (PANAS), rumination & worry.   |   | as well as significantly greater decreases in rumination (d=0.70) compared to control condition.  |   |   |
| Part II: Studies Explicitly Combining Self-compassion and Mindfulness |                      |   |   |  |       |   |   |   |   |   |
| 9   | Palmeira et al. 2017 | A combination of mindfulness, ACT and self-compassion (named "Kg-Free") | 10 weekly 2.5hrs group sessions + 2 booster sessions. | Women aged btw. 18-55yrs. with overweight and obesity allocated to Kg-Free (27) or TAU (32) which included medical and nutritional appointments. | 73/59 | Self-reported, health-related (including QoL and weight self-stigma) and eating-related (emotional and uncontrolled eating) outcomes. | None yet, but ongoing research. Follow-up assessments will come at 3- and 6-months post-intervention. | Significant increased health-related QoL, physical exercise, a reduction of weight self-stigma, unhealthy eating behaviors, BMI, self-criticism, weight-related experiential avoidance & psychopathological symptoms compared with TAU at post-treatment. | Blinded data-collection by clinical psychologists | Participants not blind to group allocation. |

Note: MSC= Mindful Self-Compassion, SCM= Self-Compassion Meditation, CFT= Compassion Focused Therapy, SCS= Self-Compassion Scale, TAU= Treatment As Usual, QoL= Quality of Life, BAS= Body Appreciation- Scale, \* effect sizes in study 1 are reported as partial  $\eta^2$  coefficients. r= Rosnow and Rosenthal's effect size. d= Cohen's d effect size.

## **2.5 Self-Compassion-Based Interventions**

All studies included in this review used either MSC training, self-compassion meditation (SCM) or compassion focused therapy (CFT). We chose not to include loving-kindness meditation (LKM) interventions, as these do not focus on suffering.

### **2.5.1 Type**

The MSC program is a time limited set protocol developed by Neff and Germer [24]. It is designed for non-clinical populations, and incorporates mindfulness as a core component, while also including components of compassion training and meditation [33]. MSC exercises used in the studies reviewed here comprised: 1) Compassionate body scan, 2) affectionate breathing, and 3) LKM. Because the full MSC program requires a considerable time commitment from participants, SCM is an acceptance-based approach derived from the MSC program to serve as a shorter intervention that only requires participants to listen to recordings of the guided self-compassion meditations from the MSC program [26]. However, it still includes foundational knowledge and practice of mindfulness and self-compassion and teaching skills to deal with emotions, relationships, and aspects of the self and one's inner voice [25].

CFT is another self-compassion-based intervention that was developed to enable individuals to regulate their negative emotions [34]. Much like MSC and SCM, CFT also emphasizes practicing compassion and positive feelings toward the self. However, unlike MSC, CFT is a therapeutic approach originally designed for clinical populations. This intervention aims to reduce impairing affective responses such as shame, self-criticism, and negative self-evaluation in order to create the conditions necessary for change [35].

### **2.5.2 Duration**

MSC is modeled on the structure of the mindfulness-based stress reduction (MBSR) program with eight weekly 2–2.5 hours sessions, and an additional 4-hour silent session delivered by trained instructors teaching the course. Participants are further asked to undertake daily home practice which can be a combination of formal and informal exercises [24, 25]. In two studies, SCM was delivered using a podcast system for 20 minutes daily, over a period of one or three weeks [26, 33]. One study used weekly sessions for three weeks; the first two meetings lasted 90 minutes each and the third meeting lasted 40 minutes.

CFT was delivered over various periods lasting 3, 9 or 16 weeks. Two studies used guided self-help reading materials; in the study of participants diagnosed with binge eating disorder (BED), participants were asked to follow the guidelines delivered whenever they felt the urge to deviate from their food plan over the 3-week period of the intervention. In the other study, the intervention was combined with virtual interaction with a trained therapist [35, 36]. One of the studies used self-recordings to allow participants to track their progress [36], whereas regular reminders and check-ins with the therapists were used in the second study. In the third study, 2-hour CFT sessions were delivered face-to-face [37].

## **2.6 Participants**

A total of 794 participants were examined and completed the interventions. All of the studies, with the exception of that reported by Braehler et al. (2013), consisted either of female-only samples or a vast majority of samples from females, making it difficult to generalize the findings from the studies to males.

Three of the studies comprised 349 women with body image concerns, with 196 in the control group and 153 in the treatment group [26, 33, 36].

Three other studies included clinical samples; one MSC study with 43 females and 20 males diagnosed with diabetes [25], and two CFT studies; one examining 91 patients diagnosed with schizophrenia-spectrum/psychotic disorders, of which 51 met the criteria for paranoid ideation with schizophrenia-spectrum disorder [37], and 35 individuals diagnosed with BED [36].

The rest of the studies examined either 51 participants from a non-clinical population with a majority of educated female individuals [24], 242 individuals with low-to-moderate levels of well-being [35], or 49 female college students [38].

Compared to the populations examined in the MSC- and SCM-programs, the RCTs of CFT included in this review examined at a wider range of populations.

### **2.6.1 Randomization**

Friis et al. [25] used a double-blind method and computer software to randomly assign participants to control or treatment groups. Other studies did not specify the method of randomization. However, Toole and Craighead [33] used between-group analyses of variance (ANOVAs) to ensure that randomization was successful and the baseline conditions were similar in both the control and treatment groups.

### **2.6.2 Control Conditions**

Five studies used waiting-list control conditions as their control groups and four used active treatment control groups; Smeets et al. [38] used a time-management control group; Kelly and Carter used behavioral self-help and waiting-list control groups, and Braehler et al. used treatment as usual (TAU). The use of inactive control groups alone is often considered a limitation of a study design as it does not control for non-specific effects of the intervention, such as expectancy effects, being part of a credible treatment program, general social support, or placebo effects. However a recently published meta-analysis examining the effects of compassion-based interventions on a range of outcome measures showed that results remained the same when active control comparisons were included [32].

## **2.7 Follow-Up**

Four of the studies had follow-up measurements; three studies included a 3-month follow-up, one had an additional 9-month follow-up, and one had 6- and 12-month follow-ups [24–26, 35]. The majority of the effects of the interventions were maintained during most of these time periods.

## **2.8 Outcome Measures**

As with many MBIs, all included studies used a variety of self-reported measures. The vast majority of the studies used the 26-item Self-compassion Scale (SCM) developed by Neff [39]. The rest of the studies used self-reported measures, such as the Body Shape Questionnaire, Body Consciousness Scale, and Body Appreciation Scale [26, 33]. One study used the 9-item Patient Health Questionnaire (PHQ-9) to assess depression [25].

Although self-reporting systems are vital as an outcome measure, they are open to social desirability effects and other response and recall biases in the reporting of symptoms. To create more comprehensive assessments of the outcomes and to increase the quality and validity of the data, it would be beneficial if future studies were supplemented with more objective measures or second-hand evaluations (e.g. clinical assessments).

## **3. Results**

A variety of results were obtained in the studies, although most of the studies revealed an increase in self-compassion in the intervention groups.

Two of the studies examining body concerns revealed a general reduction in body distress measured post-intervention [26, 33]. One study showed a significant correlation between self-compassion and measures of body image including body dissatisfaction, body shame, and body appreciation with a moderate-to-large Cohen's  $d$  effect size (Cohen's  $d > 0.5$  except for self-worth CSW-appearance  $d = 0.45$ ) [26]. Self-compassion training further improved self-compassion, self-worth, body appreciation and decreased body dissatisfaction and body shame. Although Toole and Craighead [33] did not find a significant effect of self-compassion training on overall self-compassion, they did however find that SCM reduced self-criticism, while body appreciation, and appearance-contingent self-worth were increased.

The studies using clinical samples showed that MSC significantly reduced depression and diabetes-related distress in patients diagnosed with type 1 and type 2 diabetes [25]. Braehler et al. found that compassion gained through CFT was correlated with a decrease in negative thoughts about psychosis, fear of relapse, and depression in participants diagnosed with schizophrenia-spectrum disorder. Furthermore, Kelly and Carter found that CFT reduced symptom-severity of eating disorders (e.g. reducing binge eating in BED patients and eating concerns) [37].

Studies also showed increased life satisfaction, mindfulness, and well-being in healthy individuals [24] as well as increased emotional well-being and positive emotions in individuals with low-to-moderate levels of well-being [35].

### **3.1 Interventions Examining a Combination of Mindfulness-Based Interventions and Self-Compassion-Based Interventions**

One study explicitly examined the integration of SCBIs and MBIs and fulfilled our inclusion criteria.

The recently published RCT study by Palmeira and colleagues [31] developed and tested a 12-session group intervention known as "Kg-Free", which integrated components of mindfulness, ACT and self-compassion in 73 randomized women with overweight or obesity. The self-compassion components of Kg-Free included LKM and several exercises adapted from CFT. However, these

components were explicitly promoted only in the program's last sessions. The intervention was designed to reduce weight-related self-stigma and unhealthy eating behaviors and promote quality-of-life by targeting weight-related experiential avoidance and self-criticism. This study showed evidence of Kg-Free efficacy in reducing weight-related negative experiences and promoting healthy behaviors, psychological functioning and quality-of-life.

#### **4. Discussion**

There has been an acceleration of the accumulation of scientific evidence supporting the benefits of MBIs and a growing interest in the effectiveness of self-compassion - although this is a more recent paradigm.

Previous reviews and analyses of the effectiveness of mindfulness have been limited by low-quality studies. Most have stressed the importance of more rigorously designed studies before any final conclusions about the effectiveness of MBIs can be reached [4]. Nevertheless, the psychological, emotional, psychosocial and health benefits of MBIs in various medical and mental health conditions are becoming increasingly clear [4, 7, 10, 40]. This makes it important to identify factors that might promote engagement with mindfulness training. As has been stated previously, mindfulness practice can be very difficult for some, particularly for individuals who have always been harsh and critical in their opinions about themselves (and/or others) and those who are tormented by feelings of shame, guilt, unworthiness or a sense of being wronged [9]. This can discourage compliance with MBIs coupled with a discontinuation of practicing mindfulness to the point where they would derive benefit [10].

As has been outlined previously, self-compassion reflects a non-judgmental awareness of one's hardships and failures [41], and helps an individual to accept them as a part of life without limiting one's actions.

##### **4.1 Self-Compassion and Mindfulness Taught Explicitly or Implicitly**

In this review, we also evaluated research examining the potential use of MBIs and SCBIs to complement each other in future MBIs. We found only one study examining this type of intervention while fulfilling our inclusion criteria, which is far from sufficient to draw any conclusions in this regard. However, we will now explore this question in a broader context and in a wider range of studies, specifically directed toward future directions of research.

Mindfulness involves paying attention with a type of curiosity. It does not attempt to change one's experience; it simply adds the resonance of awareness to that experience. Thus, mindful awareness is ultimately about seeing things as they are [5]. MBIs can support the cultivation of mindfulness in SCBIs, as they focus on the development of a deep and comprehensive understanding of mindfulness. However, an attitude of kindness is often not practiced and cultivated explicitly, despite it being an essential part of the practice.

Most SCBIs, in particular MSC, incorporate mindfulness as a core component, as it is necessary to be aware of one's suffering in order to extend compassion toward oneself [25]. However, these interventions spend only a small amount of time on practicing mindfulness compared to the time teaching self-kindness explicitly [22].

Thus, although the structure of the MSC program is modeled on MBSR and combines mindfulness and self-compassion, it focuses mainly on helping participants to develop self-

compassion, and includes mindfulness as a secondary emphasis (only one session in the 8-week course is exclusively devoted to teaching mindfulness skills) [24]. This suggests that MSC can be used as a complementary intervention to MBIs, by explicitly teaching practices to help self-critical individuals respond to difficult times with compassion.

Where the trained instructors in MBIs encourage the patients to express their inner states or feelings to foster awareness and acceptance, self-compassion is further encouraged by incorporating direct training in the capacity to *actively* comfort and soothe oneself, *once* the person has become aware. According to Neff [41], this training can be achieved in different forms of individualized supportive gestures such as sending yourself self-compassionate thoughts, physically holding your own hand, hugging yourself or holding both hands over your heart and thereby, activating the release of the “hormone of love and bonding”, oxytocin.

MSC also explicitly adds the element of common humanity [41] into its practice. MSC helps participants recognize that they are not alone in their suffering, and that problems are a shared human condition. By introducing common humanity into the intervention explicitly through specific practices, MSC may support a deeper understanding and experience of interconnection than is achieved through MBIs.

Although it is important to clarify that both SCBIs and MBIs are overlapping constructs .5 to .7 since both include mindfulness in terms of awareness and acceptance, SCBIs are differentiated from MBIs in that they also involve support and self-kindness in times of difficulty. As is clear from the results of this review, both interventions have proven benefits in a variety of populations and outcomes, and both seem to foster acceptance and an ability to re-assess one’s feelings; skills that have also been associated with increased quality-of-life, health, psychological well-being [42] and decreased symptoms of depression and anxiety [43].

However, although commonly accepted as an important attitudinal aspect of mindfulness practice [44], self-compassion is, in general, not explicitly taught in MBIs. Instead, it is taught implicitly as an attitudinal foundation of mindfulness practice and mainly conveyed in the way the instructor relates to the participants [23].

A recently published non-RCT study examined whether an explicitly taught CBI (compassion cultivation program, CCT) had a differential impact in terms of empathy, compassion, and identification with all humanity, compared to MBSR, in which compassion is taught implicitly [23]. Both MBSR and CCT were found to be effective in generally enhancing psychological well-being and increasing mindfulness and compassion, whereas CCT had a greater impact on developing compassionate skills, especially empathic concern and identification with all humanity. These results suggest that an enhancement of pro-social orientation is achieved when compassion is explicitly taught, compared to the effects of implicit training in compassion seen in most MBIs such as MBSR. This research highlights the potential for a complementary (rather than competitive) relationship between MBIs and SCBIs.

The founders of MBCT have previously expressed reservations about offering explicit practice in self-compassion to patients with recurrent depression because they were concerned that it could easily evoke adverse effects and a sense of failure [45]. From a clinical perspective, it was considered safer to first establish basic mindfulness skills and to introduce a compassionate attitude implicitly embodied in the form of a teacher. However, based on the findings of the studies included in this review, we suggest that it may be beneficial to include more explicit teachings of self-compassion to highly self-critical individuals in future MBIs, or to offer the MSC

program or SCM as an adjunct intervention.

#### **4.2 SCBIs Prior to, or As a Follow-Up to MBIs**

In an experimental manipulation study by Rowe and colleagues (2016), it was observed that giving participants brief instructions to be warm and compassionate to themselves prior to a mindfulness meditation session made them more willing to continue the training [10]. This offers preliminary evidence that explicitly including self-compassion and kindness in the instruction of mindfulness will reduce the likelihood of people from becoming discouraged and giving up, thus enhancing compliance with the continuing practice of mindfulness, especially for self-critical individuals.

The study by Palmeira and colleagues (2017) also supports the value of teaching self-compassion prior to mindfulness. In comparisons of changes in both groups from baseline to post-treatment, their results for self-compassion failed to reach statistical significance, although within-group results suggested improved self-compassion skills in participants following the Kg-Free-intervention. This suggests that the development of self-compassion requires more time and practice, implying that teaching SC prior to mindfulness, or at least earlier in the intervention than was adopted in their study, might be beneficial.

This assumption is supported by qualitative data from another study exploring the putative mediators of a MBI to decrease distress in people with multiple sclerosis (MS), which similarly showed that more time was necessary to develop self-compassion [46].

Alternatively, self-compassion could be taught at later follow-ups to motivate people to continue practicing mindfulness, as is the case of the newly developed intervention of mindfulness-based compassionate living (MBCL) [9]. MBCL builds on mindfulness training but also teaches compassion training as a follow-up to a mindfulness program. The intention is to cultivate a caring, compassionate attitude similar to that cultivated by MBSR/ MBCT. The addition of the explicitly taught compassion training is designed to further help individuals who find it difficult to continue practicing mindfulness exercises after the course (e.g. self-critical individuals or people with chronic or recurring health problems) without the guidance of a trainer and without the support of the group meetings. However, MBCL is a very new program, and only a few studies have investigated its effects to date – none of which fulfilled this review's inclusion criteria of randomization and sample size and were therefore, not included in this review.

## **5. Conclusion**

Here, we reviewed the literature describing studies of the health benefits of SCBIs as well as those explicitly combining SCBIs and MBIs to further explore the possibilities and potential benefits of integrating mindfulness-based and self-compassion-based programs. Of 324 results, nine articles were eligible for inclusion in our study, with only one explicitly combining the interventions.

Although further research is warranted before it is possible to draw any mature conclusions, the current evidence highlights the potential benefits of SCBIs across a range of outcomes. While the body of mindfulness and self-compassion research is growing, comparatively little research has been devoted to understanding how they may be used to complement one another. The integration of MBIs and SCBIs into future comprehensive interventions holds promise, especially



for treatments directed toward highly self-critical individuals.

However, there are many unanswered questions, and future research is required to determine the benefits of improving self-compassion before learning mindfulness for some individuals with certain baseline trait characteristics, or perhaps as a follow-up to a MBI for others.

Rigorously designed RCTs with large sample sizes and across diverse populations are needed to elucidate the potential of these two interventions to complement one another, as well as clarifying the optimal order and combinations that may produce synergistic benefits.

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### **Author Contributions**

First and second authors conducted literature search and retrieval. The second author wrote the first draft of the findings from the articles investigating the SCBIs together with the definition of self-compassion meditation. The first author wrote the rest of the review including the examination of the combination of MBIs and SCBIs, besides reviewing the self-compassion articles and editing those sections in the paper. The third author edited, reviewed and helped design the entire paper.

### **Competing Interests**

The authors have declared that no competing interests exist.

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