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RESEARCH ARTICLE

Effect of compassion-focused therapy on self-criticism and self-soothing: A meta-analysis

Joana Vidal[1] | **Joan Miquel Soldevilla**[2]

[1]Universitat de València, València, Spain

[2]Universitat de Barcelona, Barcelona, Spain

Correspondence

Joan Miquel Soldevilla, Facultat de Psicologia, Secció de Personalitat, Avaluació i Tractaments Psicològics, Universitat de Barcelona, Pg. de la Vall d'Hebron, 171, 08035 Barcelona, Spain.
Email: jmsoldevilla@ub.edu

Abstract

Objective: Compassion is oriented towards perceiving and relieving suffering. Hence, its development is beneficial for mental health. Many interventions aimed at cultivating compassion in patients have been empirically supported. This meta-analysis analyses the effectiveness of compassion-focused therapy (CFT) in decreasing self-criticism, a vulnerability factor that has been related to several mental health problems, and in increasing self-soothing.

Methods: A literature search was conducted in the PsycInfo, Web of Science, Medline and Scopus databases, through which 7 controlled trials ($N = 640$) and 7 observational studies ($N = 207$) were retrieved.

Results: The results of the meta-analysis determine that CFT decreases the level of self-criticism and increases the ability to experience soothing. The size of the effect varies depending on the design of the study and the subscale of the test used to measure self-criticism (Forms of Self-Criticizing/Attacking and Self-Reassuring Scale).

Conclusions: CFT has proven to be an effective intervention for reducing self-criticism. However, given that the number of studies is small and that only half of them are controlled trials, the results must be interpreted cautiously. More randomized controlled trials comparing CFT with other therapies are needed to determine the effect of this intervention on self-criticism with more scientific evidence.

KEYWORDS

clinical psychology, compassion, compassion-focused therapy, mental health, self-criticism

Practitioner points

- Many studies have studied the effectiveness of compassion-based treatments in improving mental health.
- Self-criticism has been related to mental health difficulties.
- This meta-analysis demonstrates that compassion-focused therapy decreases self-criticism and increases self-soothing.
- Further RCTs are needed to examine the relationship between compassion, self-criticism and soothing in clinical populations.

BACKGROUND

The concept of compassion is present in all spiritual traditions and cultures (Moses, 2007). In an integrative review of this concept, Goetz et al. (2010) define it as 'the feeling that arises in witnessing another's suffering and that motivates a subsequent desire to help' (p. 351). In recent years, interest in research into the development of compassion as a psychotherapeutic technique has increased. There are six empirically supported interventions focused on the cultivation of compassion (Kirby, 2017). This paper examines one of them: compassion-focused therapy (CFT), developed by Paul Gilbert.

Compassion-focused therapy is a multimodal, integrated model that is based on evolutionary science, social and developmental psychology, and neuroscience, and it is also influenced by Eastern traditions (Gilbert, 2009). His definition of this concept is based on the Buddhist tradition: 'a sensitivity to suffering in self and others, with a commitment to try to alleviate and prevent it' (Gilbert, 2014, p. 19).

Compassion-focused therapy is rooted in an evolutionary analysis of basic or innate social motivational systems that organize the mind towards specific goals (Gilbert, 2014): competition and social ranking, cooperation and sharing, caring and nurturing, and seeking and responding to care. Gilbert (2009) also suggests that we can distinguish at least three types of emotion regulation systems: threat and self-protection system; incentive and resource-seeking system; and soothing and contentment system.

In addition to motivations and emotions, evolution has also provided us with cognitive skills. These new cognitive functions are an important advantage and have allowed us to solve many problems of adaptation. However, the interaction between old trends and new abilities can sometimes be one of conflict. For instance, our ability to anticipate and reflect on potential dangers leads us to activate the threat system and thus experience anxiety, even though there is no real risk. Therefore, Gilbert (2014) states that our brain easily triggers destructive behaviours and mental health problems. Nevertheless, throughout the evolution of the human species, our motivations and emotions have also been selected for affectionate and altruistic behaviour. Gilbert developed CFT on the basis of this idea.

In brief, the goal of CFT is to help patients use their cognitive abilities to enhance motivations of collaboration and support and emotions of contentment and safety. Consequently, CFT seeks to change competitive social mentalities to those based on cooperation and care, which promote support, trust and connection, rather than shame and self-criticism (Gilbert, 2014). In addition, it fosters the development of the contentment emotional system to increase emotions of peace, well-being, security and soothing (Gilbert, 2009).

In a typical CFT intervention, various compassion cultivation exercises are taught, including mindfulness practice, mentalizing, the use of compassionate imagery, compassion self-identity cultivation, compassionate letter writing and performing compassionate behaviours on a regular basis. Interventions such as the use of breathing, posture, facial expressions, voice tones and other exercises to balance the autonomic nervous system are also included (Gilbert, 2014).

Self-criticism is a central feature in many mental health problems. This fact is demonstrated by Werner et al. (2019) in a review analysing the correlation between self-criticism and psychopathology. Self-criticism

is positively related to depressive symptoms, psychotic symptoms, social anxiety, eating disorders and personality disorders. Therefore, self-criticism is a form of self-to-self relationship that appears in several mental health difficulties, constituting a vulnerability factor for the development of those problems. In fact, it has been considered a transdiagnostic dimension (Gilbert & Irons, 2005).

Compassion-focused therapy was initially developed to treat people with increased tendencies towards self-criticism and shame (Gilbert & Procter, 2006), due to the perceived limitations of other therapies to do this. CFT aims to stimulate the contentment system to rebalance emotional systems and increase the well-being, warmth and soothing of patients.

To measure self-criticism, Gilbert et al. (2004) developed the Forms of Self-Criticizing/Attacking and Self-Reassuring Scale (FSCRS). This test consists of 22 items distributed in three subscales that assess people's reactions to situations of stress or failure. Participants respond on a 5-point Likert scale ranging from 0 = not at all like me, to 4 = extremely like me. The first subscale is Inadequate Self (IS; 9 items, score 0–36), which measures feelings of inferiority and inadequacy (e.g., 'There is a part of me that feels I am not good enough'; 'I can't accept failures and setbacks without feeling inadequate'). The second subscale is Hated Self (HS; 5 items, score 0–20), which determines the desire to harm oneself and self-hatred (e.g., 'I have become so angry with myself that I want to hurt or injure myself'; 'I have a sense of disgust with myself'). The last subscale is Reassured Self (RS) (8 items, score 0–32), which assesses the ability to soothe and encouragement to face threat (e.g., 'I am able to care and look after myself'; 'I can feel lovable and acceptable'). The first two subscales measure self-criticism levels, while the last assesses the ability to soothe oneself in difficult situations. Several studies have proven that the FSCRS has good reliability and construct validity (Baião et al., 2015; Castilho et al., 2015; Kupeli et al., 2013). Several systematic reviews of the effectiveness of CFT as a psychotherapeutic treatment have been performed. It should be noted that CFT is a relatively new therapy, hence these reviews use a limited number of studies. Leaviss and Uttley (2015) found that CFT may be more effective than no treatment or as effective as regular treatments in treating patients diagnosed with schizophrenia spectrum disorders, bipolar disorder, posttraumatic stress disorder, depression, personality disorders, social anxiety, obsessive–compulsive disorder or eating disorders. In addition, it was especially effective in people with high levels of self-criticism. However, there is insufficient evidence to prove that CFT is more effective than standard treatments due to the lack of randomized controlled trials. Another systematic review carried out by Craig et al. (2020) found that CFT is likely to be more effective than any other treatment in clinical populations such as patients with depression, opioid use disorder, eating disorders, personality disorders, psychosis, posttraumatic stress disorder or dementia and suggests that group CFT may be more effective than other psychological interventions. This review confirms that CFT is especially appropriate for pathologies in which shame and self-criticism are underlying factors. Nevertheless, more high-quality studies are needed to validate the use of CFT as a psychotherapeutic treatment. Recently, García and Quiles (2021) published a systematic review of CFT's effectiveness in the treatment of people with eating disorders. The results showed that the application of CFT leads to reductions in symptomatology in addition to reductions in self-criticism and shame and increases in compassion. However, the authors emphasized that more research is required to obtain conclusive results.

The aim of this paper is to conduct a meta-analysis to determine the effect that CFT has on self-criticism and the ability to self-soothe. It is then intended to assess whether CFT leads to reductions in self-criticism as well as increases in the ability to experience soothing and warmth, as measured by the FSCRS, and therefore, whether it can be considered appropriate for the treatment of this form of self-to-self relationship, which underlies many mental health issues.

METHOD

A bibliographic search was performed on the following databases: PsycInfo, Web of Science, Medline and Scopus. The keywords used were variations of the terms therapy, compassion and self-criticism. The following combination was searched in the four databases: (*treatment* OR *training* OR *therapy* OR *intervention*) AND (*compassion* OR *compassionate* OR *compassionate mind* OR *compassion-focused*) AND (*self-criticism*

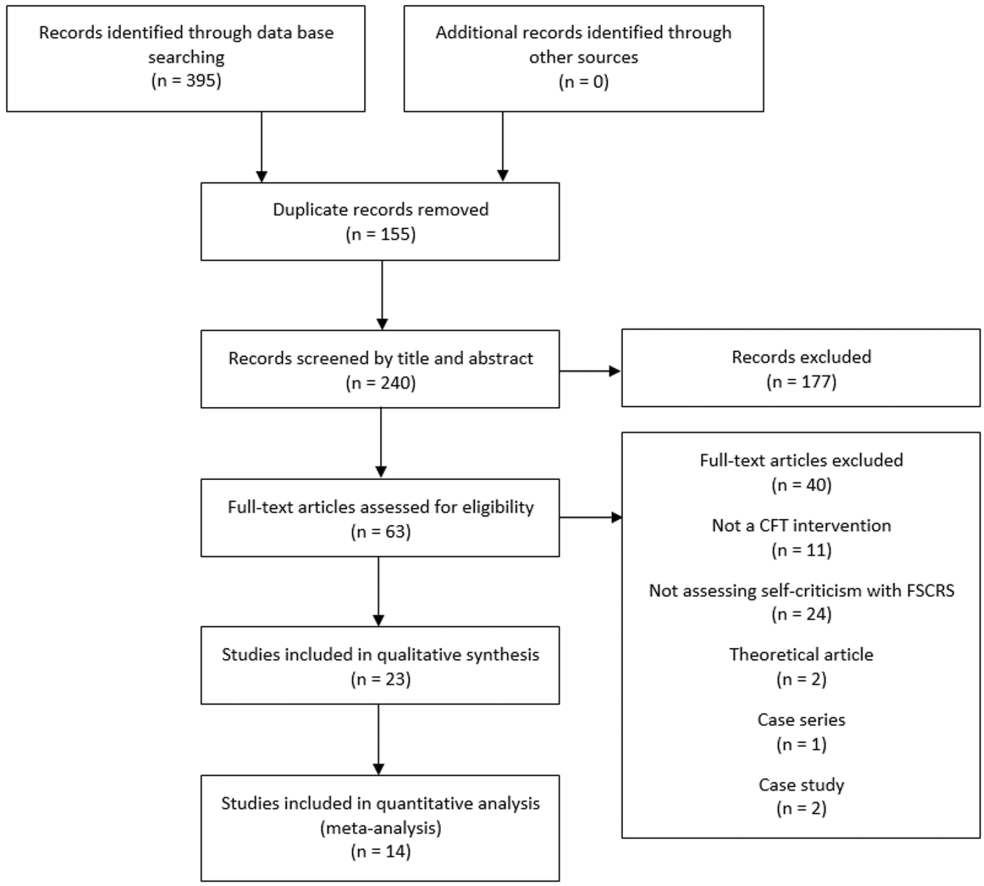

FIGURE 1 PRISMA flowchart for selection process of studies

OR *self-critical*). It was searched in 'topic', and no filter was used. Through this initial search, conducted in October 2020, 395 records were found, of which 155 were excluded because they were duplicated. Therefore, 240 unique records remained.

The inclusion criteria for studies were as follows: (i) Intervention: CFT (other interventions focused on the development of compassion were excluded); (ii) Participants: both clinical and nonclinical populations; (iii) Outcomes: studies should assess participants' self-criticism levels before and after CFT application with the FSCRS test (as it allowed us to evaluate not only the levels of self-criticism but also the ability of self-soothing and self-reassurance); (iv) Study design: randomized controlled trials, nonrandomized controlled trials or observational studies and (v) Language: English or Spanish.

First, the selection of studies was made by reading titles and abstracts. After this first classification, the number of records was reduced to 63. A second selection was then made by reviewing the full articles. Thus, 40 articles were excluded. Finally, 23 articles that met all the inclusion criteria were found, of which only 14 presented the quantitative data necessary for a meta-analysis. Therefore, this paper is based on data from these 14 selected articles. Figure 1 shows a flow diagram summarizing the study screening and selection process, according to PRISMA guidelines (Moher et al., 2009).

It should be noted that there are 24 studies that were excluded because they did not use the FSCRS to assess self-criticism. We decided to include only studies that measured self-criticism with the FSCRS because it allowed us to evaluate not only the levels of self-criticism but also the ability to self-soothe and self-reassurance. Hence, with this meta-analysis, we could examine whether CFT leads to reductions in

self-criticism as well as increases in the ability to soothe oneself. For this reason, articles that used another measure of self-criticism were excluded.

Data analysis

The meta-analysis was carried out with the RStudio program (version 4.0.3) operating with the metaphor package (Viechtbauer, 2010). First, the effect size of each individual study was calculated using the d family index (Ray & Shadish, 1996). Depending on the type of study (controlled trial or observational study), the effect size index used was different. In controlled trials, where participants were assigned to an intervention group or a control group, the standardized mean difference, which compares the post-test averages of the two groups with the equation of Hedges and Olkin (1985), was used. In observational studies, where control groups were not included, the standardized mean difference was used by means of the formula described by Morris and DeShon (2002). This index quantifies the effects of treatment by calculating the difference between pre-test and post-test averages.

To give greater weight to the effect sizes with larger sample sizes, each effect size was weighted by its inverse variance. Therefore, in each meta-analysis and assuming a random-effects model, a weighted mean effect size was calculated, together with its statistical significance and confidence interval. Following Cohen (1988), effect sizes of .20, .50 and .80 were interpreted as representing an effect of small, medium and large magnitude, respectively. A forest plot was also created to visually represent the effect sizes of each study, the mean effect size and their 95% confidence intervals. The next step in the statistical analysis consisted of applying the heterogeneity Q statistic and the I^2 index to examine whether the individual effect sizes were homogeneous around the mean effect size. Finally, given that this meta-analysis did not include any unpublished studies, a funnel plot (Light & Pillemer, 1984) was used to graphically examine whether there was publication bias.

RESULTS

Characteristics of the studies

Appendix S1 shows summaries of the characteristics of the controlled trials and the observational studies. The total number of participants in all studies is 847, ranging from 6 (Gilbert & Procter, 2006) to 213 participants (Sommers-Spijkerman et al., 2018). The selected studies have samples of predominantly female adult populations. The mean age varies from 22.7 years (Fox et al., 2020) to 52.87 years (Sommers-Spijkerman et al., 2018), and the percentage of participants who are women exceeds 65% in all studies, except in that in the study by Ashworth et al. (2015), which consists of 41.66% women. Of the 14 included studies, 8 apply CFT to a clinical population, while 6 assess the effectiveness of the intervention in a nonclinical population. Clinical sample studies include patients with social anxiety (Stevenson et al., 2019), chronic pain (Dhokia et al., 2020), binge eating disorder (Duarte et al., 2017), hoarding disorder (Chou et al., 2020), acquired brain injury (Ashworth et al., 2015), personality or mood disorder (Gilbert & Procter, 2006) and a set of various diagnoses (Fox et al., 2020; Judge et al., 2012).

The duration of the treatment varies considerably between the different studies included in the meta-analysis. Kelman et al. (2018) assessed participants' reductions in self-criticism after a single day of CFT application, whereas the study with the longest duration was that of Ashworth et al. (2015), which provided 18 weeks of intervention. In addition, 9 of the studies applied the treatment in person (Ashworth et al., 2015; Chou et al., 2020; Duarte et al., 2017; Fox et al., 2020; Gilbert & Procter, 2006; Judge et al., 2012; Laidlaw et al., 2014; Maratos et al., 2019; Matos et al., 2017), while 5 did so online (Dhokia et al., 2020; Kelman et al., 2018; McEwan & Gilbert, 2016; Sommers-Spijkerman et al., 2018; Stevenson et al., 2019).

The selected studies include 7 controlled trials, all of which were randomized except that of Chou et al. (2020) and 7 observational studies. Regarding the controlled trials, the control groups of 3 studies

TABLE 1 Sample size, mean and standard deviation of FSCRS scores of the controlled trials

Author (year)		Intervention					Control				
	Subscale	*n*	Pre Mean	Pre *SD*	Post Mean	Post *SD*	*n*	Pre Mean	Pre *SD*	Post Mean	Post *SD*
Stevenson et al. (2019)	IS + HS	44	32.46	14.37	23.91	14.51	54	31.78	11.76	25.98	13.56
Sommers-Spijkerman et al. (2018)	IS	107	18.47	7.29	14.58	6.03	106	18.46	6.66	17.19	6.97
	HS	107	3.73	3.13	2.44	2.74	106	3.64	2.76	3.27	2.9
	RS	107	16.18	4.99	19.46	4.75	106	16.34	5.03	17.2	5.25
Dhokia et al. (2020)	IS	38	13.55	6.61	12.24	6.44	35	13.86	6.66	15.09	5.77
	HS	38	3.79	3.08	2.05	1.83	35	2.71	3.53	3.86	3.99
	RS	38	17.42	5.66	21.79	6.48	35	18.89	7.02	17.97	5.36
Matos et al. (2017)	IS + HS	56	20.53	11.52	15.55	8.83	37	19.31	10.01	18.29	9.95
	RS	56	21.25	5.82	22.44	5.28	37	20.17	6.95	20.2	6.69
Kelman et al. (2018)	IS	61	15.85	1.24	13.79	1.2	62	15.44	1.23	13.81	1.19
	HS	61	5.1	.67	4.03	.64	62	4.98	.66	4.4	.64
	RS	61	20.41	.94	22.56	.95	62	20.61	.93	21.61	.95
Duarte et al. (2017)	IS	11	2.45	.82	1.61	.87	9	2.21	.73	2.12	.94
	HS	11	1.15	.78	.64	.84	9	1.02	.55	.8	.53
	RS	11	1.99	.71	2.64	.88	9	1.88	.44	2.07	.59
Chou et al. (2020)	IS + HS	13	1.8	.8	1.3	.8	7	1.7	.5	1.5	.6
	RS	13	2	1	2.4	1	7	2.4	.6	2.3	.9

Abbreviation: *SD*, Standard Deviation.

received another treatment, specifically cognitive restructuring (Stevenson et al., 2019) or cognitive behavioural therapy (Chou et al., 2020; Kelman et al., 2018). However, in the remaining 4 studies (Dhokia et al., 2020; Duarte et al., 2017; Matos et al., 2017; Sommers-Spijkerman et al., 2018), the control group did not receive any treatment.

Results of the meta-analysis

A meta-analysis was carried out for each type of study. Furthermore, as the FSCRS has three subscales that assess opposite effects, after the application of CFT, it was expected that the IS and HS scores would decrease while the RS score would increase. Therefore, the difference in averages would be positive in IS and HS, while it would be negative in RS. To interpret the data correctly, each subscale must be analysed individually. For this reason, one meta-analysis was also performed for each subscale. Furthermore, 3 controlled trials (Chou et al., 2020; Matos et al., 2017; Stevenson et al., 2019) combined IS and HS results into a single dataset; therefore, an individual meta-analysis was also carried out for these three studies. In conclusion, to interpret the data properly, a total of 7 meta-analyses were performed: 4 for the controlled trials (IS, HS, RS, IS-HS) and 3 for the observational studies (IS, HS, RS).

Tables 1 and 2 present the quantitative data (sample size, mean of FSCRS scores and standard deviation of FSCRS scores) of the controlled trials and the observational studies. Appendix S1 presents the meta-analysis results of the two types of studies.

Controlled trials

In the IS subscale, a statistically significant small magnitude effect size was obtained (n = 429; d = .30; p = .01; 95% CI [.06, .55]). The Q statistic was not significant (Q = 3.71; p = .29; I^2 = 29.13%); thus,

TABLE 2 Sample size, mean and standard deviation of FSCRS scores of the observational studies

Author (Year)	Subscale	*n*	Pre mean	Pre *SD*	Post mean	Post *SD*
Judge et al. (2012)	IS	42	31.08	3.92	23.12	7.36
	HS	42	12.3	4.83	8.15	4.43
	RS	42	8.67	4.61	13.26	5.27
Ashworth et al. (2015)	IS	12	24.42	6.37	13.08	6.11
	HS	12	7.17	5.64	1	1.28
	RS	12	15.5	5.09	23.08	5.84
Gilbert and Procter (2006)	IS	6	31.33	5.16	14.5	7.01
	HS	6	15.17	3.76	5.67	5.4
	RS	6	6.17	6.4	19.83	8.21
Maratos et al. (2019)	IS	18	13.1	7.3	12.5	8.8
	HS	18	3.9	7.8	2.1	3.6
	RS	18	22.9	7.1	19.7	7.9
McEwan and Gilbert (2016)	IS	45	16.68	10.05	12.84	8.29
	HS	45	3.18	4.55	2.33	3.45
	RS	45	19.98	7.4	21.93	5.91
Laidlaw et al. (2014)	IS	9	26.67	5.72	21	8.75
	HS	9	8.78	6.2	5.11	4.57
	RS	9	15.11	6.27	18.56	5.08
Fox et al. (2020)	IS	75	28.61	5.32	23.65	8.36
	HS	75	9.65	5.04	7.93	5.19
	RS	75	10.77	5.57	13.27	6.81

Abbreviation: *SD*, Standard Deviation.

the studies were homogeneous. Regarding the HS subscale, a statistically significant weighted effect was obtained with a magnitude between small and medium (n = 429; d = .42; p < .01; 95% CI [.22, .62]). Heterogeneity was also not significant (Q = 2.24; p = .52; I^2 = 5.18%). The RS subscale had a statistically significant medium magnitude effect size (n = 542; d = −.58; p < .01; 95% CI [−.83, −.34]). As expected, the index was negative. At this subscale, the studies included in the analysis were also homogeneous (Q = 7.64; p = .18; I^2 = 39.10%), as the Q statistic was not significant. The three studies (Chou et al., 2020; Matos et al., 2017; Stevenson et al., 2019) that had the results of IS and HS combined in a single dataset obtained a non-significant weighted effect size (n = 211; d = .22; p = .12; 95% CI [−.06, .50]). Appendix S1 shows the forest plot of each of the subscales described, with the individual effect size of each study, the weighted effect size and their 95% confidence intervals.

Observational studies

The IS subscale of the observational studies had a large and statistically significant weighted effect size (n = 207; d = .92; p < .01; 95% CI [.42, 1.42]). However, the Q statistic was also significant, thereby indicating heterogeneity between the effect sizes of the individual studies (Q = 22.20; p < .01; I^2 = 78.92%). In addition, the I^2 index showed that the heterogeneity was of large magnitude. Regarding the HS subscale, the weighted effect size was medium and statistically significant (n = 207; d = .63; p < .01; 95% CI [.28, .99]). In addition, there was heterogeneity of medium-large magnitude (Q = 14.57; p = .02; I^2 = 60.36%). Finally, the RS subscale had a medium and statistically significant weighted effect size (n = 207; d = −.58; p = .01; 95% CI [−1.02, −.13]). Again, the Q statistic was significant, and the I^2 index indicated large heterogeneity (Q = 18.75; p < .01; I^2 = 74.87%). Appendix S1 shows the forest plot of each of the subscales described.

Publication bias

Appendix S1 presents the funnel plot of each meta-analysis carried out. This graphic represents the effect size (X-axis) related to the standard error (Y-axis). The precision of the studies is greater at the top of the Y-axis. The points that represent each study are closer together at the top of the graphic and become dispersed as they descend along the Y-axis. When there is publication bias, this offset is asymmetric. As seen in Appendix S1, the funnel plot of all the meta-analyses performed was considerably symmetrical; thus, publication bias was excluded.

DISCUSSION

Self-criticism is a transdiagnostic phenomenon that plays an important role in the development and maintenance of various mental health difficulties (Gilbert & Irons, 2005; Werner et al., 2019). CFT was developed to treat people with high levels of self-criticism (Gilbert & Procter, 2006). Hence, this meta-analysis aims to quantify the effects of CFT on self-criticism and to determine whether it may be beneficial in the prevention and treatment of diverse mental health problems.

According to the theory of Gilbert (2009), highly self-critical people continuously activate the threat and protection system while hypoactivating the contentment system. Faced with failures, disappointments or mistakes, they react harshly and contemptuously to themselves and are unable to self-soothe. Therefore, while reducing self-directed hostility is important in helping self-critical people, CFT has also focused on developing skills to generate soothing and warmth, which can act as an antidote to the feeling of threat (Gilbert & Procter, 2006). Given this theoretical basis, the initial hypotheses were that scores on the Inadequate Self (IS) and Hated Self (HS) subscales of the FSCRS test (Gilbert et al., 2004), which measures self-criticism levels, would decrease after the application of CFT. However, scores on the Reassured Self (RS) subscale, which assesses the ability to soothe oneself, would increase after the intervention.

As CFT is a relatively new therapy, in the present meta-analysis there has been also a limited number of studies to review. The studies selected for this meta-analysis included 7 controlled trials and 7 observational studies.

In the controlled trials, meta-analysis of the IS and HS subscales indicated that the self-criticism scores of the intervention group were significantly lower than those of the control group. In contrast, the meta-analysis of RS indicated that post-test scores were significantly higher in the intervention group than in the control group. Regarding the observational studies, meta-analysis of the IS and HS subscales showed that self-criticism scores were significantly lower after therapy than before therapy. However, meta-analysis of the RS subscale showed that the scores that measure the ability to self-soothe were significantly higher after the application of CFT compared to before its application.

In conclusion, both the controlled trials and the observational studies included in the meta-analysis confirm the initial hypothesis: CFT produces decreases in the level of self-criticism and increases in the ability to experience soothing. The size of this effect varies depending on the type of study and the FSCRS test subscale. Since self-criticism is relevant to the development and maintenance of various mental health problems (Gilbert & Irons, 2005; Werner et al., 2019), its decline is positive for mental health. Therefore, the results of this meta-analysis agree with previous research showing that the development of compassion entails benefits for mental health (Crocker & Canevello, 2012; Keltner et al., 2014; MacBeth & Gumley, 2012; Schanche et al., 2011). Additionally, as mentioned in the introduction, many patients with high levels of self-criticism do not improve significantly with cognitive behavioural therapy because, while they may exchange their negative beliefs for more adaptive ones, they are unable to feel relieved and peaceful (Gilbert, 2009).

Heterogeneity, that is the variability in the individual effect sizes of each study around the mean weighted effect, was also assessed. Regarding the controlled trials, meta-analysis of the three subscales

showed that the effects of the individual studies were homogeneous; therefore, the mean weighted effect of each subscale correctly represents the set of studies included. In contrast, in observational studies, meta-analysis of the three subscales showed high heterogeneity, indicating that they contain studies with remarkably variable effect sizes. Hence, the mean effect size of each subscale does not adequately represent the set of studies it includes. This result is not surprising, as observational studies are methodologically weaker and consequently have more biases. Another reason for high heterogeneity is that the studies included in the meta-analysis differ in important features, and because of this, there are moderators that influence the variability in effect sizes (Sánchez-Meca et al., 2011).

Limitations

This study had several limitations. First, few studies were found because CFT is a very recent intervention, and in addition, the literature search was very specific, as it required that studies had the numerical data essential for meta-analysis. Furthermore, we excluded 24 studies assessing self-criticism with tests other than the FSCRS, as they did not assess participants' ability to self-soothe. Moreover, half of the selected studies were observational and methodologically weak. Such studies do not include a control group, which means that the estimation of the effect may suffer from biases resulting from various sources of invalidity, such as the maturation of the participants or the reactive effects caused by the application of the evaluation tests on two occasions (Sánchez-Meca et al., 2011). It should also be noted that 11 of the 14 selected studies did not compare CFT with alternative psychological therapy. Therefore, their effects could be attributed to psychological intervention and not to the actual effectiveness of CFT. If CFT is to be considered an evidence-based therapy, more randomized controlled trials should be performed to compare it with other psychological therapies already proven effective.

Another limitation was that, given the small number of selected studies, it was not possible to determine which moderators influenced the variability in effect sizes. In other words, this meta-analysis is not able to specify which characteristics (duration, format, type of population, etc.) imply a greater effectiveness of CFT in reducing self-criticism.

Finally, it is important to stress that the interpretation of the funnel plot is subjective; hence, there may be doubts about the symmetry of the funnel, especially in the present work, where the number of studies is small.

Implications

This study confirms that the development of compassion through CFT leads to reductions in self-criticism. Therefore, this intervention is effective in decreasing this form of self-to-self relationship, which underlies various mental health issues. This fact implies that CFT can be used by practitioners, either as the only intervention in patients whose main problem is an excess of criticism and harshness towards themselves or as a complementary therapy in complex pathologies.

Finally, this study raises an explanatory mechanism for the positive relationship between compassion and mental health demonstrated in previous articles (Crocker & Canevello, 2012; Keltner et al., 2014; MacBeth & Gumley, 2012; Schanche et al., 2011) since the present study shows that one of the variables that moderates the relationship between compassion and mental health is a reduction in self-criticism. That is, this meta-analysis increases knowledge about the relationship between compassion, self-criticism and mental health: increases in compassion lead to reductions in self-criticism, which implies better mental health.

CONCLUSION

The results of the present paper show that CFT induces reductions in the level of self-criticism and increases in the ability to experience soothing and warmth. However, given that the number of studies is

small and that half of them are of low methodological quality, we should be prudent when interpreting the results. More randomized controlled trials comparing CFT with other evidence-based therapies are needed to examine the effect of this intervention on self-criticism with scientific rigour.

AUTHOR CONTRIBUTIONS

Joana Vidal: Data curation; formal analysis; methodology; software; writing – original draft. **Joan Miquel Soldevilla:** Conceptualization; supervision; validation; writing – review and editing.

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CONFLICT OF INTEREST

The authors declare that they have no competing interests.

DATA AVAILABILITY STATEMENT

Data sharing is not applicable—No new data are generated.

ORCID

Joan Miquel Soldevilla https://orcid.org/0000-0002-6982-6594

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SUPPORTING INFORMATION

Additional supporting information can be found online in the Supporting Information section at the end of this article.

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