Open Access

OBM Integrative and Complementary Medicine

LIDSEN Publishing Inc.

Research Article

The Relationship between Self-Compassion and Predictors of Depressed Mood in Parents of People with Eating Disorders

Pamela Fox [1, 2, *], Gerald H. Burgess [2, *], Chris Irons [3, *]

1. South London and Maudsley NHS Foundation Trust, London, UK; E-Mail: pamela.fox@slam.nhs.uk
2. Canterbury Christ Church University, Kent, UK; E-Mail: jerry.burgess@canterbury.ac.uk
3. Balanced Minds, London, UK; E-Mail: chris@balancedminds.com

* **Correspondences:** Pamela Fox, Gerald H. Burgess, Chris Irons; E-Mails: pamela.fox@slam.nhs.uk; jerry.burgess@canterbury.ac.uk; chris@balancedminds.com

Academic Editor: Marianna Mazza

Special Issue: Compassion Focused Therapy (CFT) - New Insights and Outcomes

OBM Integrative and Complementary Medicine
2024, volume 9, issue 1
doi:10.21926/obm.icm.2401004

Received: February 18, 2023
Accepted: January 02, 2024
Published: January 05, 2024

Abstract

The aim of this study was to examine the relationships between self-compassion and possible predictors of depressed mood in parents of people with eating disorders. A questionnaire design was conducted cross-sectionally in a sample of 112 parents of people with eating disorders. Participants completed measures of depressed mood, experiences of entrapment, shame, guilt, self-criticism and self-compassion. Regression analyses showed entrapment and self-criticism to be mediators between the relationship of shame and depressed mood. Self-compassion appeared to reduce the experience of depressed mood through its effect on shame and entrapment. Self-compassion also appeared to reduce the experience of depressed mood through its effect on self-criticism. This study explored processes of depression and the buffering effects of self-compassion on these processes. These findings support an evolutionary understanding of depressed mood and the potential benefits of applying compassion-focused interventions for parents of people with eating disorders.

© 2024 by the author. This is an open access article distributed under the conditions of the Creative Commons by Attribution License, which permits unrestricted use, distribution, and reproduction in any medium or format, provided the original work is correctly cited.

Keywords
Self-compassion; depressed mood; eating disorders; parents

1. Introduction

1.1 Carers of People with Eating Disorders

Carers of people with eating disorders (ED) have a valuable and demanding role in supporting their loved one's recovery, particularly parents [1]. Carers have been recognised for being actively involved in providing care for their loved one no matter their age, such as supporting eating during mealtimes. Interactions around food and ED symptoms have been described to dominate interpersonal interactions, limit carers' social lives and postpone future plans [2].

One study found that around 40% of carers reported experiences in-line with having mental health difficulties of their own and 17% experienced a high level of psychological distress [3]. Moderate levels of depression have been found in this population [4] and in a sample of parents of people with EDs, 13% were found to have scored at or above the clinical threshold for depression on a self-report measure [5]. While depression is clinically relevant for carers, a cognitive interpersonal maintenance model developed for anorexia nervosa (AN) then later applied to all EDs [6, 7] indicated that carer distress can be implicated in the maintenance of their loved one's ED symptoms [6, 8]. This model led to developments of both treatments for people with EDs [9] and a focus on carer intervention [8], highlighting the importance of further understanding carers' wellbeing.

1.2 Psychological Theories of Depression in Carers

One understanding of depression is that it is driven by an evolved emotion regulation system that works by reducing positive affect and increasing negative affect [10]. Researchers have studied the functions of regulating mood in this way in order to make sense of how depressive states can occur. Nesse proposed that depression has an adaptive function by reducing drive in environments where one's efforts do not produce worthwhile results [11]. Seligman's theory of learned helplessness [12] suggested that depression is associated with learning that aversive outcomes cannot be controlled. The complex research around emotion systems has since been simplified into three emotion regulation systems: a) a drive system for acquiring things that are important to us; b) a threat system to protect the self; and c) a soothing system that helps us rest when we are not under threat [13].

1.3 Experience of Entrapment

Early animal studies demonstrated the problems that arise from defeats when an animal is unable to leave their place of conflict, in comparison to when they can escape [14]. Gilbert and Allan applied this understanding to human experiences [15] describing a state of entrapment as having the motivation to escape a stressful or defeating situation (often referred to as flight motivation) but being blocked from doing so. Experiences of entrapment have been highlighted as a key

pathway to the development of depression [16], and various studies have found that higher levels of entrapment are associated with carer depression [17-19].

1.4 Shame and Guilt

Shame and guilt are understood to originate from different mentalities, competitive for shame and caregiving for guilt [20]. Shame is understood to have evolutionary roots in a self-focused threat system associated with the need to demonstrate acceptability among others and has been defined as one feeling inadequate and flawed [21]. Experiencing shame has been theoretically linked with depression via a combination of mechanisms related to social rejection, escape-related action tendencies, and focusing inwardly on unfavoured attributes [22]. While shame is considered to be part of the threat system, there is growing evidence that guilt is not [23]. Guilt and shame are often misused as interchangeable terms, but unlike shame, guilt is not understood to be a self-focused emotion. In contrast, guilt is defined as the concern for others or fear of having caused harm and is understood to trigger approach-and-repair action tendencies [21, 24]. A meta-analysis has shown shame to be more strongly related to depression than guilt [22].

The experience of feeling shame and guilt in parents of people with EDs has been widely acknowledged [2]. Shame and entrapment were found to be associated in a population of carers of people with dementia [19], and it was hypothesised that the more inadequate a carer feels, the more trapped they may feel in their caring role. This hypothesis is in line with the understanding that shame is linked with an action tendency to escape or avoid [24].

1.5 Self-Criticism

Another construct associated with depression and shame is self-criticism [25, 26]. Self-criticism has been characterised by negative self-judgement in response to the perception of failure [26]. While cognitive theories describe self-criticism as a single process [27], Gilbert et al. discriminated between two different types of self-criticism; 'inadequate' self-criticism characterised by self-correction and desire to self-improve; and 'hateful' self-criticism based on disgust and desire to self-punish [26]. Hateful self-criticism was shown to be particularly pathogenic in a non-clinical sample. The relationship between self-criticism and psychological distress has not yet been investigated in a carer population.

1.6 Self-Compassion

There may also be factors that alleviate and/or protect a carer from experiencing depressed mood. Self-compassion has been defined as an adaptive emotion regulation response, involving being kind and supportive to the self in times of hurt or failure opposed to being critical towards the self [28]. Self-compassion has been associated with the soothing emotion regulation system [13] and is considered a helpful alternative reaction to supposed failure [26]. Self-compassion has been shown to be negatively associated with shame [29], moreover, in an empirical study, participants' scores on shame and self-criticism measures reduced after receiving a self-compassion intervention [30]. Self-compassion has not been studied in carers of people with EDs. In other studied carer populations self-compassion has been demonstrated to: protect professional carers from burnout [31]; be negatively associated with depression in parents of children with autism [32]; and relate to

beneficial emotional coping strategies and protect carers of people with dementia from feeling burdened [33]. It is proposed that self-compassion may prevent or reduce experiences of depressed mood through its ability to reduce the threat systems responses [23].

1.7 Rationale, Aims and Hypotheses

The current study aimed to investigate the relationship between the variables reviewed above (i.e., 'entrapment'; 'shame'; 'guilt'; 'self-criticism'; and 'self-compassion') and furthermore to investigate whether or which predict depressed mood in parents of people with EDs.

Specifically, we aimed to investigate whether the relationships between depressed mood and the experience of entrapment, shame and guilt that were observed in a sample of carers of people with dementia [19] would be similarly found in parents of people with EDs. Furthermore, this study offers novel investigation into the relationship between self-criticism and depression in a carer sample. Finally, this study is the first of our knowledge to investigate the protective nature of self-compassion in carers of people with mental health difficulties, specifically parents of people with EDs.

In addition to looking at the correlational relationships between the above variables, there were three specific a priori hypotheses investigated:

Hypothesis 1. Entrapment will mediate the relationship between shame and depressed mood.

Hypothesis 2. Self-criticism will mediate the relationship between shame and depressed mood.

Hypothesis 3. Self-compassion will protect against effects of depressed mood through reducing: i) entrapment; ii) shame; and iii) self-criticism.

2. Materials and Methods

2.1 Design and Procedure

This study used a cross-sectional design, which included self-reported questionnaires. As the study was cross-sectional there were no intentions to determine causality between variables. Regression analyses were planned to examine the level of significance of association between variables, henceforth variations of the term 'predictor' are used to indicate this statistical relationship and not imply causality.

Parents informed about the study at support groups were informed that they could choose to complete the study offline using a printed version of the research pack or online. The online and offline versions of the study consisted of the same materials presented in the same order. Research packs consisted of first an information sheet, followed by a consent form, then demographic questions and six questionnaires (see measures sections).

2.2 Participants

The research was advertised online through social media, online forums and ED associations, charities and ED carer support groups. The inclusion criteria were that participants were over 18 years old, self-identified as parents of people with EDs and had a good understanding of written English.

The data from a total of 112 parents (105 women and seven men) were included in this study. Data from twenty-five participants were excluded because their responses were incomplete on at least one of the measures. Demographic information is detailed in Table 1.

Table 1 Participant demographics.

		N =	**Percentage (%)**
Gender	Female	105	93.75
	Male	7	6.25
Ethnicity	White British	80	71.43
	Any other white background	29	25.90
	Asian	1	0.89
	Not provided	2	1.78
Nationality	British	85	75.90
	Other European	13	11.60
	Other Non-European	14	12.50
Relationship status	Divorced	13	11.61
	Married	77	68.75
	Partnered	12	10.72
	Separated	5	4.46
	Single	4	3.57
	Widowed	1	0.89
Relationship to individual with ED	Daughter	103	91.97
	Son	5	4.46
	Not listed or prefer not to say	4	3.57
ED diagnosis	Anorexia Nervosa	96	85.71
	Bulimia Nervosa	7	6.25
	Other specified feeding or eating disorder (OSFED)	9	8.04
		Mean (SD)	**Range**
Age (years)	Female	51.85 (7.65)	24-72
	Male	50.57 (10.61)	30-62
Time caring (months) n = 109		49.37 (43.80)	2-192
Age of individual with ED (years)		19.94 (5.51)	11-40

2.3 Measures

The seven variables being investigated were measured by five self-report questionnaires which were presented in the following order (Cronbach's alphas for all measures are reported in Table 2).

Table 2 Descriptive statistics and Pearson's correlations of study variables.

	Depression[1]	(a)	(b)	(c)	(d)	(e)	(f)
(a) Entrapment[2]	0.29**						
(b) Shame[3]	0.23*	0.35**					

(c) Guilt[3]	0.16	0.20*	0.64**				
(d) Self-compassion[4]	-0.25**	-0.22*	-0.28**	-0.22*			
(e) Criticism - inadequete[5]	0.42**	0.52**	0.54**	0.38**	-0.41**		
(f) Criticism - hatedself[5]	0.45**	0.51**	0.40**	0.22*	-0.41**	0.73**	
Means (SD)	26.46 (8.90)	21.68 (9.37)	12.42 (6.61)	17.11 (5.27)	57.68 (14.57)	18.91 (9.21)	4.71 (4.52)
Cronbach's Alphas (a)	0.81	0.90	0.89	0.80	0.83	0.92	0.82

Note. [1] The Centre for Epidemiological Studies-Depression Scale; [2] Carer's Entrapment Scale; [3] Caring Shame and Guilt Scale; [4] The Compassionate Engagement and Action Scales; [5] The Forms of Self-Criticising/Attacking & Self-Reassuring Scale. *$p < 0.05$; **$p < 0.001$.

2.3.1 The Centre for Epidemiological Studies-Depression Scale

The Centre for Epidemiological Studies-Depression Scale (CES-D; [34]) is a 20-item, self-report measure that assesses respondents' current depressive symptoms. The value for Cronbach's alpha in this study was $\alpha = 0.81$. Scores range from 0 to 60 (with higher scores indicating greater depressive symptomology) and a cut-off score of 16 or greater is indicative of "significant" depressive symptomology. This measure has been used extensively in a general population [35]. Radloff demonstrated that the measure has concurrent validity by clinical and self-report standards, in addition to evidence of construct validity [34].

2.3.2 The Carer's Entrapment Scale

The Carer's Entrapment Scale [19] was adapted for carers from Gilbert and Allan's Entrapment Scale [15] which was developed for depressed populations. This 10-item, self-report measure assesses respondents' experience of 'flight motivation' and 'entrapment' in their caring role. The value for Cronbach's alpha for this study was $\alpha = 0.90$. Scores range from 0 to 40 (with higher scores indicating an increased experience of entrapment). The original scale has been utilised in several studies and been shown to correlate with depression measures [15, 18, 36]. Cronbach's alphas in excess of .85 have been reported in student and clinical populations [15, 36].

2.3.3 The Caring Shame and Guilt Scale

The Caring Shame and Guilt Scale [19] is a 12-item, self-report measure that assesses respondents' shame (six-items) and guilt (six-items) in relation to their caring role. The value for Cronbach's alpha's in this study were $\alpha = 0.89$ for shame and $\alpha = 0.80$ for guilt. Shame items relate to self-criticism, criticism from others and meeting the expectations of other people. Guilt items relate to fears of having harmed others and a sense of over-burdened responsibility. Respondents rate the degree to which each item represents their view of themselves. Scores on each scale range from 0 to 24 (with higher scores indicating higher levels of shame or guilt). Martin et al. reported designing the scale with intentional face validity. They also reported Cronbach's alphas above 0.85 in a sample of carers of people with dementia [19].

2.3.4 The Self-Compassion Scale from the Compassionate Engagement and Action Scales

The Self-Compassion Scale from the Compassionate Engagement and Action Scales (CEAS; [37]) is a 13-item, self-report measure that assesses compassion towards the self. The value for Cronbach's alpha reported in this study was $\alpha = 0.83$. The scale purports to measure: empathy, distress tolerance, care for wellbeing, non-judgement, sensitivity to suffering, sympathy, and compassionate actions to manage distress. Respondents rate each item according to how frequently statements apply to them. The minimum possible score on the scale is 10 and the maximum score is 100 (with higher scores indicating a higher level of self-compassion). Gilbert et al. analysed the factor structures of these scales in student samples from three different countries, in two languages (English and Portuguese) [37]. They demonstrated that the scale can be analysed as engagement and action measures separately or as a single factor. In the current study, the Self-Compassion Scale was analysed as a single factor. The authors of the original study also showed Cronbach's alphas above 0.72 as well as temporal stability [37].

2.3.5 The Forms of Self-Criticising/Attacking and Self-Reassuring Scale

The Forms of Self-Criticising/Attacking and Self-Reassuring Scale (FSCRS; [26]) is a 22-item, self-report measure that assesses respondent's self-criticising and self-reassuring reactions to perceived failures. Only scores from the two self-criticising subscales were used in the current study. The inadequate self-criticism subscale focuses on a sense of personal inadequacy and the hated self-criticism subscale measures the sense of self-persecution. Respondents rate how they believe they usually think and react when things do not go right for them. Scores range from 0-36 on the inadequate self-criticism subscale and 0-20 on the hated self-criticism subscale (with higher scores indicating higher levels of self-criticism). Gilbert et al. have shown Cronbach's alphas above .85 for both forms of self-criticism in a sample of students [26]. Studies have replicated this reliability and demonstrated good construct validity and temporal stability in the general population and clinical settings [38-40]. In this study the value for Cronbach's alpha for inadequate self-criticism subscale was $\alpha = 0.92$ and $\alpha = 0.82$ for the hated self-criticism scale.

2.4 Statistical Analysis

The Statistics Package for the Social Sciences (SPSS, Version 24) was used to perform descriptive and correlation analyses. Hayes' bootstrapping approach to mediation analysis [41] was adopted, utilizing the PROCESS macro. This method produces a confidence interval for indirect pathways. The current study generated five thousand bootstrap samples and bias corrected 95% bootstrapped confidence intervals for indirect effects. Unstandardised regression coefficients were reported as Hayes recommended this metric as opposed to standardised regression coefficients.

Simple mediation models were performed for hypotheses 1, 3i and 3ii. Multiple mediation models were used for hypotheses 2 and 3iii to test the relative influence of each of the mediating variables. To test hypothesis 1, 'caring shame' was the predictor and depressed mood the dependent variable, with 'entrapment' entered as a mediator. To test hypothesis 2, 'caring shame' was the predictor and depressed mood the dependent variable, with the two self-criticism subscale scores entered in parallel as mediators. To test hypothesis 3, three analyses were completed with self-compassion as the predictor and depressed mood the dependent variable. Two of the analyses

(for hypotheses 3i and 3ii) were simple mediation analyses with entrapment and shame as mediators. The third (for hypothesis 3iii) was a parallel mediation analysis with 'inadequate self-criticism' and 'hated self-criticism' entered in parallel.

The study was approved by the Salomons Ethics Panel, Salomons Institute for Applied Psychology, Canterbury Christ Church University on 11th January 2019 (Ref. No. 075). All participants provided informed consent.

3. Results

3.1 Descriptives

Means, standard deviations (SD) and Cronbach's alphas for all variables are displayed in Table 2. All Cronbach's alphas were above .80 and therefore indicated high internal consistency across the measures [42].

The CES-D was the only measure to include a stated clinical cut off (≥16; [34]), the overall mean of the participants in this study was above that cut-off. The FSCRS does not have a clinical cut off, however, self-criticism scores were somewhat higher than scores reported in studies of general populations [26, 39, 43]. The mean scores from the Caring Shame and Guilt Scale and the Entrapment Scale were similar to scores found in a student population [44] and carers of people with dementia [19]. Similarly, the mean score for self-compassion as measured by the CEAS was not noticeably different to scores observed in the general population [37].

3.2 Correlation Analysis

Table 2 shows two-tailed Pearson's correlation coefficients between all variables. The bivariate correlations with depression were all significant except for the scores on the guilt measure. Significant relationships were observed between self-criticism and all the variables measured. Self-compassion was found to have significant negative relationships with all of the variables measured.

3.3 Mediation Analyses

3.3.1 Hypothesis 1. The Indirect Effect of Shame on Depressed Mood Mediated by Changes in Feelings of Entrapment

From a simple mediation analysis, carer shame indirectly influenced experienced depressed mood through its effect on entrapment. As can be seen in Figure 1, higher shame scores predicted higher scores on entrapment ($a = 0.49$, $p < 0.001$), and carers who had higher scores of feeling trapped also had higher levels of depressed mood ($b = 0.22$, $p < 0.05$). A bootstrap confidence interval for the indirect effect ($ab = 0.11$) based on 5,000 bootstrap samples was entirely above zero (0.02 to 0.21). There was no evidence that shame affected change in depressed mood independent of its effect on entrapment ($c' = 0.21$, $p = 0.12$) and subsequently entrapment was understood to fully mediate the relationship between shame and depressed mood in this model.

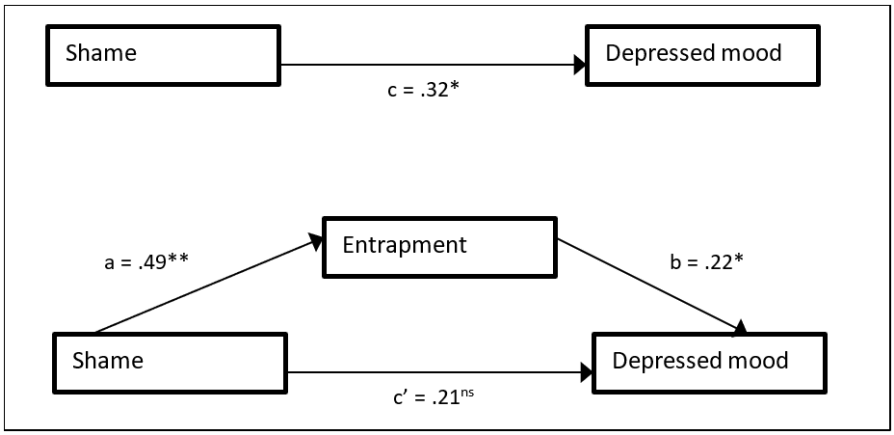

Figure 1 Simple mediation model for entrapment as a mediator between shame and depressed mood relationship in the form of a statistical Diagram. *Note.* ns not significant, **p* < 0.05; ***p* < 0.001.

3.3.2 Hypothesis 2. The Indirect Effect of Shame on Depressed Mood Mediated by Changes in Variations of Self-Criticism

From a parallel mediation analysis, carer shame indirectly influenced experienced depressed mood through its effect on self-criticism. As can be seen in Figure 2, higher shame scores predicted higher scores on the mediator variables: inadequate self-criticism (a_1 = 0.75, p < 0.001); hated self-criticism (a_2 = 0.27, p < 0.001). Higher scores on hated self-criticism predicted higher levels of depressed mood (b_2 = 0.61, p < 0.05), but higher scores on inadequate self-criticism did not significantly predict depressed mood (p = 0.16). A bootstrap confidence interval for the total indirect effect ($a_1b_1 + a_2b_2$ = 0.30) based on 5,000 bootstrap samples was entirely above zero (0.15 to 0.47). There was no evidence that shame affected change in depressed mood independent of its effect on self-criticism (c' = 0.01, p = 0.93) and subsequently the combination of both types of self-criticism were understood to fully mediate the relationship between shame and depressed mood in this model.

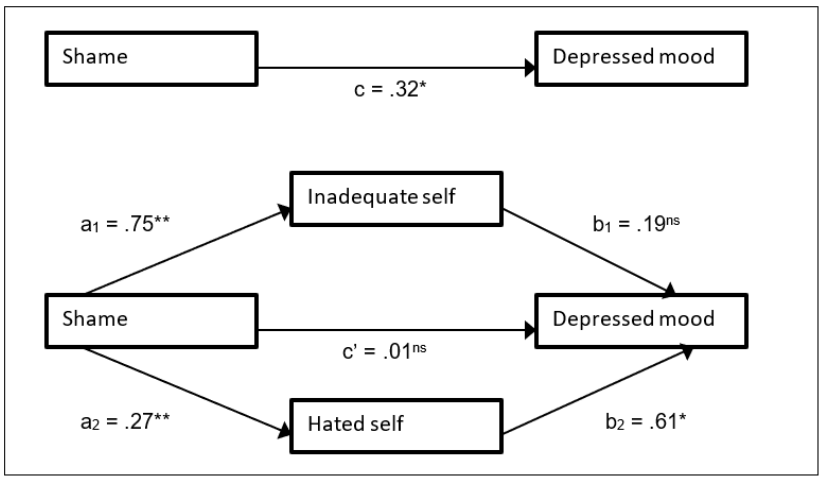

Figure 2 Parallel mediation model for two forms of self-criticism as mediators between shame and depressed mood relationship in the form of a statistical diagram**.** *Note.* ns not significant, **p* < 0.05; ***p* < 0.001.

There was a significant specific indirect effect of shame on depressed mood via hated self-criticism, whereas, a specific indirect effect of shame via inadequate self-criticism was not found to be significant. Hypothesis 2 was in part supported given that the relationship between shame and depressed mood was found to be fully mediated by hated self-criticism.

3.3.3 Hypothesis 3.

The indirect effect of self-compassion on depressed mood mediated by reductions in i) entrapment; ii) shame; and iii) self-criticism. Three analyses were conducted to investigate possible mediators between the relationship between self-compassion and depressed mood.

i & ii) The Indirect Effect of Self-Compassion on Depressed Mood Mediated by Changes in Caring Experience. From a simple mediation analysis, self-compassion indirectly predicted reductions in depressed mood via its effect on experiences of entrapment. As can be seen in Figure 3, higher self-compassion scores predicted significant reductions in entrapment scores (a = -0.14, $p < 0.05$) and entrapment scores predicted higher depressed mood scores (b = 0.23, $p < 0.05$). The bootstrapped confidence interval for the indirect effect (ab = -0.03) was entirely below zero (-0.07, -0.00). The significant total effect of self-compassion on depressed mood (c = -0.15, $p < 0.05$) remained significant when entrapment was added into the model as the mediator (c' = -0.12, $p = 0.04$) and subsequently entrapment was understood to partially mediate the relationship between self-compassion and depressed mood in this model.

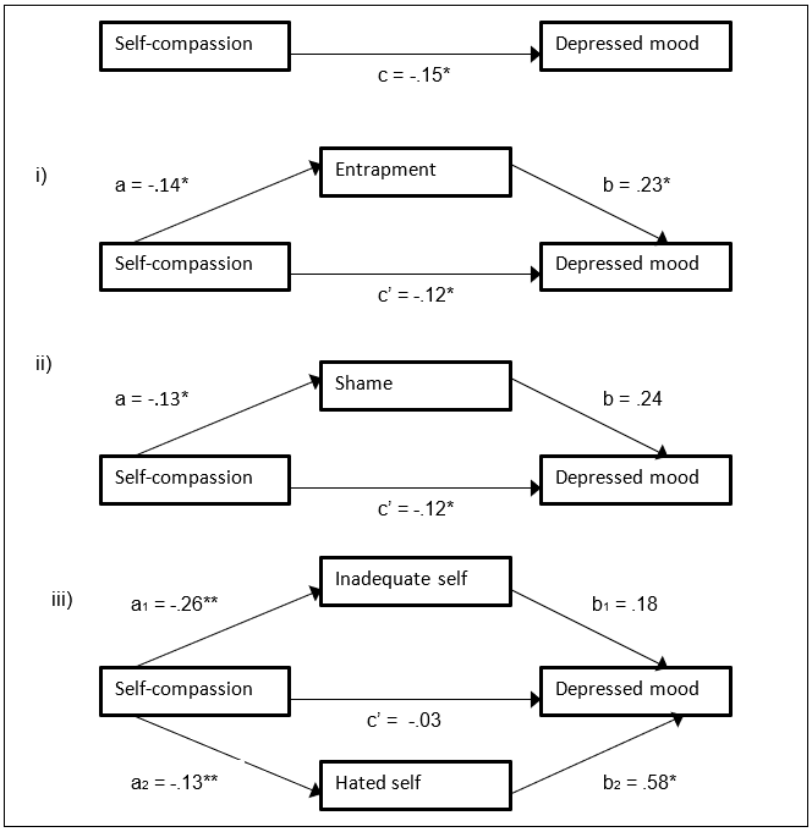

Figure 3 Mediation models for the indirect effects of self-compassion on reducing depressed mood in the form of statistical diagrams**.** Note. ^{ns} not significant, *$p < 0.05$; **$p < 0.001$.

There was also a significant direct effect of self-compassion on depressed mood independent of shame scores (c' = -0.12, p = 0.04). The effect of self-compassion on change in depressed mood scores was not mediated by shame (ab = -0.03, BCI [-0.08, 0.00]).

A post-hoc analysis was performed to examine the sequential mediation of shame and entrapment in the self-compassion and depressed mood relationship. A post-hoc analysis was deemed appropriate given the theoretical indication of the relationship between shame and entrapment and the results found in Hypothesis 1 demonstrating the mediation effect of entrapment in the shame and depressed mood relationship. Therefore, a sequential mediation model was used by entering shame into the model as a mediator followed by entrapment. Results are shown in Figure 4. The combined indirect effects via shame and entrapment produced a significant indirect effect of self-compassion on depressed mood, mediated sequentially via reduction in shame then entrapment, and subsequently in a reduction of depressed mood ($a_1d_{21}b_2$ = -0.01, BCI [-0.03, -0.00]). There was no evidence that self-compassion influenced depressed mood independent of its effect on shame and entrapment (c' = -0.10, p = 0.08) and subsequently the sequential effects of shame and entrapment were understood to fully mediate the relationship between self-compassion and depressed mood in this model.

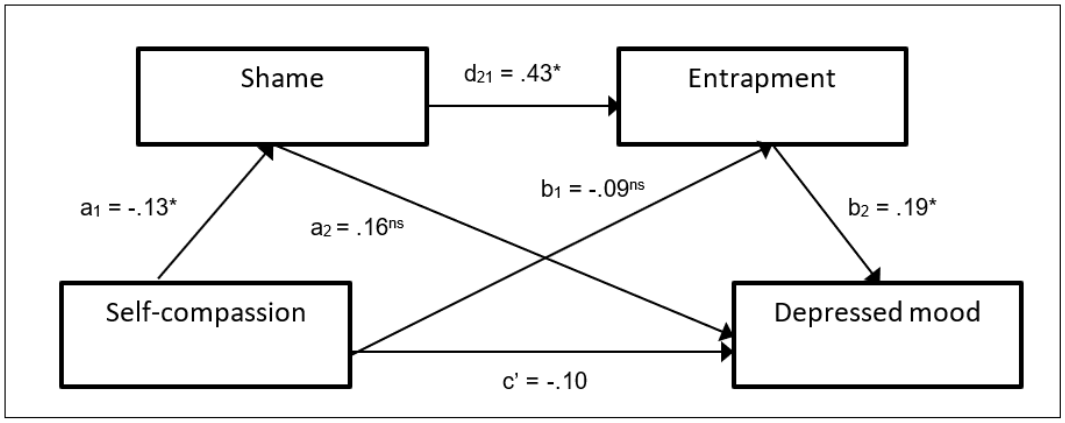

Figure 4 The indirect effect of self-compassion on the reduction of depressed mood sequentially mediated by reduction in shame and entrapment. Note. ns not significant, *p < 0.05; **p < 0.001.

iii) The Indirect Effect of Self-Compassion on Depressed Mood Mediated by Changes in Variations of Self-Criticism. From a parallel mediation analysis, carer self-compassion indirectly influenced experienced depressed mood via its effect on self-criticism. As can be seen in Figure 3, higher self-compassion scores predicted lower scores on the mediator variables; inadequate self-criticism (a_1 = -0.26, p < 0.001), and hated self-criticism (a_2 = -0.13, p < 0.001). Higher scores on hated self-criticism predicted higher levels of depressed mood (b_2 = 0.58, p < 0.05), but higher scores on inadequate self-criticism did not significantly predict depressed mood (p = 0.15). A bootstrap confidence interval for the total indirect effect ($a_1b_1 + a_2b_2$ = -0.12) based on 5,000 bootstrap samples was entirely below zero (-0.19 to -0.06). There was no evidence that self-compassion influenced depressed mood independent of its effect on self-criticism (c' = -0.03, p = 0.60). Subsequently, the combination of both types of self-criticism were understood to fully mediate the relationship between self-compassion and depressed mood in this model.

There was a significant specific indirect effect of self-compassion on depressed mood via hated self-criticism, the specific indirect effect of self-compassion on depressed mood via inadequate self-criticism was not significant. Hypothesis 3iii was in part supported as the relationship between self-compassion and depressed mood was fully mediated by hated self-criticism.

4. Discussion

This study aimed to explore the relationships between variables that may predict depressed mood in parents of people with EDs. The study also sought to answer three specific research questions: first, does entrapment mediate the relationship between shame and depressed mood; second, is the shame-depressed mood relationship mediated by changes in variations of self-criticism; third, does self-compassion appear to reduce the level of depressed mood via its effects on entrapment, shame and self-criticism? The main findings will be considered in turn.

In this sample of parents of people with EDs the mean depressed mood score was above the measure's cut-off indicating risk of significant depressive symptomology. This finding supports previous research that reported on the high level of psychological need in carers of people with EDs [4] and highlights the ongoing importance understanding carer distress in order to inform interventions that will effectively address these needs.

This study aimed to investigate a hypothesised indirect relationship between shame and depressed mood through the experience of entrapment. Parents experiencing higher levels of shame about being in their caring role (e.g. not being a good enough carer) were more likely to also feel trapped in their caring role. Shame has been previously shown to predict depression [22, 45], a finding further supported in this study, however, the finding that entrapment fully mediated this relationship suggests that this process is likely to be through experiences of wanting (but being unable) to escape the carer role. This conclusion was drawn because shame no longer significantly predicted depressed mood independent of its effect on entrapment in this study. Therefore, the results of this study supported and added to previous findings of these constructs in carers of people with dementia [19]. The current findings highlight the importance of understanding and targeting entrapment to relieve depressed mood in parents of people with EDs.

Parents experiencing higher levels of shame about their caring role were significantly more likely to experience higher levels of self-criticism. The finding that self-criticism fully mediated the shame-depressed mood relationship suggests that this process is likely to be through experiences of negative self-evaluations. When the modalities of self-criticism were considered separately in the shame-depressed mood relationship, hated self-criticism was a significant mediator but inadequate self-criticism was not. While existing interventions for depression already focus on reducing self-criticism [46], these findings indicate that targeting constructs that contribute to hated self-criticism may be of most value when it arises in the context of shame. Since this is the first time these constructs have been considered together, there is a need for future research to develop this understanding further as this may assist in developing assessments that can identify when these constructs are occurring together as well as developing interventions that can effectively target these processes.

The negative relationship between self-compassion and depression is well documented [47] including in carer samples [32], however, this is the first study of the authors' collective knowledge

to investigate the processes by which self-compassion may protect parents of people with EDs from experiencing depressed mood.

The study aimed to investigate the indirect effect of self-compassion on depressed mood mediated by changes in carers' experience of entrapment. The finding that self-compassion significantly predicted reductions in entrapment and shame in these separate models suggests a possible ameliorating effect of self-compassion on these caring experiences. Moreover, entrapment was shown to partially mediate the relationship between self-compassion and depressed mood. This finding supports the possibility that self-compassion can reduce depressed mood via its ameliorating effect on entrapment. However, entrapment was only a partial mediator of the self-compassion and depressed mood relationship, suggesting other variables may also explain this relationship. Nonetheless, when the combination of mediating effects of shame and entrapment were considered together, it appeared that the buffering role of self-compassion on depressed mood was best explained by its neutralising impact on the combination of these variables, as there was no longer a significant indirect effect of entrapment as a single mediator. These findings support a theoretical understanding around the negating effect of self-compassion on the threat system [23], which is likely to be made up of responses such as shame contributing to feelings of entrapment [24]. The findings of this study support the use and development of interventions focused on cultivating self-compassion, these interventions may be able to protect parents from experiencing or developing depressed mood by reducing experiences of shame and entrapment related to the caregiving role. Clinically, compassion-focused interventions have already been shown to be effective in reducing depression [30, 48] and may offer similar effects for parents of people with EDs.

The findings partially supported the hypothesis that self-criticism would mediate the relationship between self-compassion and depressed mood. The model that combined both types of self-criticism fully mediated the relationship between self-compassion and depressed mood. This finding supports the hypothesis that self-compassion can reduce depressed mood via its impact on reducing self-criticism. When the modalities of self-criticism were considered separately in the self-compassion and depressed mood relationship, inadequate self-criticism was not found to be a significant mediator, whereas, hated self-criticism was. In addition, hated self-criticism was found to be stronger predictor of depressed mood in this study when compared to inadequate self-criticism. A similar finding was observed in Gilbert and Procter's results of a compassion focused therapy intervention that significantly reduced hated self-criticism only [30]. Therefore, it is possible that self-compassion may reduce the effects of depressed mood via the process of reducing hated self-criticism.

While the results of this study are in-line with previous reports that parents of people with EDs experience high levels of guilt and shame [2], this study did not find a relationship between guilt and depressed mood. This supports the growing understanding that guilt is not usually associated with depression and that shame and guilt derive from different mentalities [20]. Guilt is considered to be socially adaptive and associated with actions of reparation, approach and care for others. Whereas shame is considered to be part of a self-focused threat system, concerned with competition and rank in comparison to others and associated with escape-related tendencies [20, 24, 49]. This developing understanding indicates that it may be helpful for interventions aimed at reducing depressed mood should attribute more of a focus on alleviating the experience of shame,

specifically in this population by focusing on reducing feelings of shame related to caring for someone with an ED.

The cross-sectional design of this study limits the causal conclusions that can be drawn, and the findings of the meditation analyses should be considered with caution. This said, the conceptual models assessed were grounded in theoretical literature and previous experimental studies; therefore, there is some strength in the analyses of the models investigated. Further studies are needed to clarify the relationship between these concepts.

NICE guidance [50] already recommends that carers' mental health needs should be considered by ED services and the findings from this study would support this. The overall high level of depressed mood identified in this study highlights the high level of distress experienced by parents of people with EDs. While many child and adolescent ED services follow NICE guidelines to offer family therapy, there is a need for services to offer separate carer support to address the distress of parents, of which may not be specifically addressed as part of the family therapy treatment pathway.

The study's findings suggest that processes leading to depressed mood in carers may be associated with experiences of shame, entrapment and self-criticism. While the study cannot make causal statements about the relationships between these variables, the findings indicate that it may be helpful for interventions aimed at reducing depressed mood to focus more on alleviating these experiences. It may be beneficial to address parents' experiences of shame and feeling trapped in their caring role to reduce feelings of low mood. Similarly targeting constructs that make up hated self-criticism in the context of shame rather than other types of self-criticism may offer more value than treatments for depression that focus on self-criticism more broadly [46].

Self-compassion was implicated in ameliorating the impact of some of the processes that are commonly related to depressed mood. Cultivating self-compassion may be implicated with reducing carers' experiences of shame, entrapment and self-criticism. Compassion-focused interventions may therefore be effective at reducing depression and/or protecting parents of people with EDs from developing depressed mood, as has been shown in other populations [30, 48]. This would include providing access to self-compassion and compassionate mind training exercises (for example, The Self-Compassion App; [51]) for carers as a direct way to help them cultivate their compassionate mind skills.

The sampling strategy utilised enabled parents from across the world to take part in this study. Despite achieving participation from parents from a number of countries and continents, this diversity did not translate in terms of ethnic representation as over 90% of participants self-identified as White. In addition, the sample was mainly made up of parents of individuals diagnosed with AN, specifically mothers. Therefore, the findings from this study cannot be confidently applied to parents of individuals with other types of EDs. The results may also not be representative of fathers' experiences or of parents from Black and ethnic minority backgrounds. This lack of diversity within samples in not unusual in ED research [3] and future research should consider improvements that will ensure a better representation of all types of carers of people with EDs.

The differences found between the study sample and previous studies regarding predictors of depression highlight the need for future investigations to continue considering the different processes of depression among different groups of people. This study adds to the limited research available in understanding depressed mood in this group of carers. There will be value in replicating and building upon the study's findings to further understand the role of entrapment, shame and

self-criticism in the experience of depressed mood in parents of people with EDs. Future studies would also benefit from looking at these processes across carer groups looking after different types of ED presentations, and across both severity and length of time since diagnosis. It would also be useful to explore differences in directional flows of compassion (for example, compassion for others and compassion from others) and how these might ameliorate and protect carers from some of the distress they experience. Overall, building a better understanding of these constructs in this population, including how they relate to one another, may support the development of interventions that can effectively target these processes.

5. Conclusion

This study has built upon the existing understanding around depressed mood in parents of people with EDs, most specifically the relationship between variables from an evolutionary understanding of depression, and how self-compassion may protect against it. Shame was shown to be a predictor of entrapment and the data presented herein were consistent with the understanding that shame is associated with the drive to escape, and when this is blocked one may experience depressed mood. Self-compassion was shown to protect against depressed mood via its alleviating effect on this process. Self-compassion was also found to buffer depressed mood via its alleviating effect on self-criticism. In comparison, self-criticism of a harmful nature was also shown to be a mediator between shame and depression. These findings uniquely support the theoretical understanding around what experiences may mediate the shame and depressed mood relationship. The findings also highlight how self-compassion may protect against depressed mood in parents of people with EDs, and suggest that compassion-focused therapies may have something to offer.

Acknowledgments

We would like to thank the carers that have shared their valuable time to support and take part in this study.

Author Contributions

Pamela Fox contributed to the conceptualisation, data collection, data analysis and writing of the original draft. Gerald Burgess and Chris Irons provided supervision and contributed to the conceptualization, reviewing and editing of the original draft.

Funding

We received no specific grant from any funding agency, commercial or not for profit sectors.

Competing Interests

The authors have declared that no competing interests exist.

References

1. Golan M, Crow S. Parents are key players in the prevention and treatment of weight-related problems. Nutr Rev. 2004; 62: 39-50.

2. Treasure J, Sepulveda AR, MacDonald P, Whitaker W, Lopez C, Zabala M, et al. The assessment of the family of people with eating disorders. Eur Eat Disord Rev. 2008; 16: 247-255.
3. Whitney J, Haigh R, Weinman J, Treasure J. Caring for people with eating disorders: Factors associated with psychological distress and negative caregiving appraisals in carers of people with eating disorders. Br J Clin Psychol. 2007; 46: 413-428.
4. Anastasiadou D, Medina-Pradas C, Sepulveda AR, Treasure J. A systematic review of family caregiving in eating disorders. Eat Behav. 2014; 15: 464-477.
5. Kyriacou O, Treasure J, Schmidt U. Understanding how parents cope with living with someone with anorexia nervosa: Modelling the factors that are associated with carer distress. Int J Eat Disord. 2008; 41: 233-242.
6. Schmidt U, Treasure J. Anorexia nervosa: Valued and visible. A cognitive-interpersonal maintenance model and its implications for research and practice. Br J Clin Psychol. 2006; 45: 343-366.
7. Treasure J, Schmidt U. The cognitive-interpersonal maintenance model of anorexia nervosa revisited: A summary of the evidence for cognitive, socio-emotional and interpersonal predisposing and perpetuating factors. J Eat Disord. 2013; 1: 13.
8. Goddard E, Macdonald P, Sepulveda AR, Naumann U, Landau S, Schmidt U, et al. Cognitive interpersonal maintenance model of eating disorders: Intervention for carers. Br J Psychiatry. 2011; 199: 225-231.
9. Schmidt U, Oldershaw A, Jichi F, Sternheim L, Startup H, McIntosh V, et al. Out-patient psychological therapies for adults with anorexia nervosa: Randomised controlled trial. Br J Psychiatry. 2012; 201: 392-399.
10. Gilbert P. Depression: The evolution of powerlessness. East Sussex, UK: Lawrence Erlbaum Associates; 1992.
11. Nesse RM. Is depression an adaptation? Arch Gen Psychiatry. 2000; 57: 14-20.
12. Seligman MEP. Depression and learned helplessness. In: The psychology of depression: Contemporary theory and research. Washington, D.C.: Winston; 1974. pp. 83-113.
13. Gilbert P. Introducing compassion-focused therapy. Adv Psychiatr Treat. 2009; 15: 199-208.
14. MacLean PD. The triune brain in evolution: Role in paleocerebral functions. New York, US: Plenum; 1990.
15. Gilbert P, Allan S. The role of defeat and entrapment (arrested flight) in depression: An exploration of an evolutionary view. Psychol Med. 1998; 28: 585-598.
16. Gilbert P. Depression and stress: A biopsychosocial exploration of evolved functions and mechanisms. Stress. 2001; 4: 121-135.
17. Pearlin LI, Mullan JT, Semple SJ, Skaff MM. Caregiving and the stress process: An overview of concepts and their measures. Gerontologist. 1990; 30: 583-594.
18. Willner P, Goldstein RC. Mediation of depression by perceptions of defeat and entrapment in high-stress mothers. Br J Med Psychol. 2001; 74: 473-485.
19. Martin Y, Gilbert P, McEwan K, Irons C. The relation of entrapment, shame and guilt to depression, in carers of people with dementia. Aging Ment Health. 2006; 10: 101-106.
20. Gilbert P. Evolution, social roles, and the differences in shame and guilt. Soc Res. 2003; 70: 1205-1230.

21. Gilbert P. What is shame? Some core issues and controversies. In: Series in affective science. Shame: Interpersonal behavior, psychopathology, and culture. Oxford, UK: Oxford University Press; 1998. pp. 3-38.
22. Kim S, Thibodeau R, Jorgensen RS. Shame, guilt, and depressive symptoms: A meta-analytic review. Psychol Bull. 2011; 137: 68-96.
23. Johnson EA, O'Brien KA. Self-compassion soothes the savage ego-threat system: Effects on negative affect, shame, rumination, and depressive symptoms. J Soc Clin Psychol. 2013; 32: 939-963.
24. Tangney JP, Dearing RL. Shame and guilt. New York, US: Guilford Press; 2002.
25. Blatt SJ. Experiences of depression: Theoretical, clinical, and research perspectives. Washington, D.C.: American Psychological Association; 2004.
26. Gilbert P, Clarke M, Hempel S, Miles JNV, Irons C. Criticizing and reassuring oneself: An exploration of forms, styles and reasons in female students. Br J Clin Psychol. 2004; 43: 31-50.
27. Beck AT, Rush AJ, Shaw BF, Emery G. Cognitive therapy of depression. New York, US: Guilford Press: 1979.
28. Berking M, Whitley B. The adaptive coping with emotions model (ACE model). In: Affect regulation training. New York, US: Springer; 2014. pp. 19-29.
29. Barnard LK, Curry JF. The relationship of clergy burnout to self-compassion and other personality dimensions. Pastor Psychol. 2012; 61: 149-163.
30. Gilbert P, Procter S. Compassionate mind training for people with high shame and self-criticism: Overview and pilot study of a group therapy approach. Clin Psychol Psychother. 2006; 13: 353-379.
31. Durkin M, Beaumont E, Martin CJH, Carson J. A pilot study exploring the relationship between self-compassion, self-judgement, self-kindness, compassion, professional quality of life and wellbeing among UK community nurses. Nurse Educ Today. 2016; 46: 109-114.
32. Neff KD, Faso DJ. Self-compassion and well-being in parents of children with autism. Mindfulness. 2015; 6: 938-947.
33. Lloyd J, Muers J, Patterson TG, Marczak M. Self-compassion, coping strategies, and caregiver burden in caregivers of people with dementia. Clin Gerontol. 2019; 42: 47-59.
34. Radloff LS. The CES-D scale: A self-report depression scale for research in the general population. Appl Psychol Meas. 1977; 1: 385-401.
35. Gotlib IH, Hammen CL. Psychological aspects of depression: Toward a cognitive-interpersonal integration. New York, US: John Wiley & Sons; 1992.
36. Gilbert P, Allan S, Brough S, Melley S, Miles JNV. Relationship of anhedonia and anxiety to social rank, defeat and entrapment. J Affect Disord. 2002; 71: 141-151.
37. Gilbert P, Catarino F, Duarte C, Matos M, Kolts R, Stubbs J, et al. The development of compassionate engagement and action scales for self and others. J Compassionate Health Care. 2017; 4: 4.
38. Baião R, Gilbert P, McEwan K, Carvalho S. Forms of self-criticising/attacking & self-reassuring scale: Psychometric properties and normative study. Psychol Psychother. 2015; 88: 438-452.
39. Castilho P, Pinto-Gouveia J, Duarte J. Exploring self-criticism: Confirmatory factor analysis of the FSCRS in clinical and nonclinical samples. Clin Psychol Psychother. 2015; 22: 153-164.
40. Kupeli N, Chilcot J, Schmidt UH, Campbell IC, Troop NA. A confirmatory factor analysis and validation of the forms of self-criticism/reassurance scale. Br J Clin Psychol. 2013; 52: 12-25.

41. Hayes AF. Introduction to mediation, moderation, and conditional process analysis: A regression-based approach. New York, US: Guilford Press; 2018.
42. Bland JM, Altman DG. Statistics notes: Cronbach's alpha. Br Med J. 1997; 314: 572.
43. Longe O, Maratos FA, Gilbert P, Evans G, Volker F, Rockliff H, et al. Having a word with yourself: Neural correlates of self-criticism and self-reassurance. NeuroImage. 2010; 49: 1849-1856.
44. Catarino F, Gilbert P, MCewaN K, Baião R. Compassion motivations: Distinguishing submissive compassion from genuine compassion and its association with shame, submissive behavior, depression, anxiety and stress. J Soc Clin Psychol. 2014; 33: 399-412.
45. Cheung MSP, Gilbert P, Irons C. An exploration of shame, social rank and rumination in relation to depression. Pers Individ Differ. 2004; 36: 1143-1153.
46. Rector NA, Bagby RM, Segal ZV, Joffe RT, Levitt A. Self-criticism and dependency in depressed patients treated with cognitive therapy or pharmacotherapy. Cognit Ther Res. 2000; 24: 571-584.
47. MacBeth A, Gumley A. Exploring compassion: A meta-analysis of the association between self-compassion and psychopathology. Clin Psychol Rev. 2012; 32: 545-552.
48. Judge L, Cleghorn A, McEwan K, Gilbert P. An exploration of group-based compassion focused therapy for a heterogeneous range of clients presenting to a community mental health team. Int J Cogn Ther J. 2012; 5: 420-429.
49. Gilbert P. Evolutionary approaches to psychopathology and cognitive therapy. J Cogn Psychother. 2002; 16: 263-294.
50. National Institute for Health and Care Excellence. Eating disorders: Recognition and treatment [Internet]. Manchester, UK: National Institute for Health and Care Excellence; 2017. Available from: https://www.nice.org.uk/guidance/ng69.
51. Beaumont EA, Irons C, McAndrew SL. A qualitative study exploring the impact the self-compassion app has on levels of compassion, self-criticism, and wellbeing. OBM Integr Complement Med. 2022. doi: 10.21926/obm.icm.2203045.