

PAMELA FOX BSc (Hons)

EXPLORING PSYCHOLOGICAL DISTRESS IN CARERS OF PEOPLE WITH
EATING DISORDERS

Section A: A Review of Interventions for Carers of People With Eating
Disorders: What Impact do They Have on Psychological Distress?
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Summary of the MRP Portfolio

Section A

This is a systematic literature review of empirical research investigating the effectiveness of interventions on reducing psychological distress in carers of people with eating disorders.

The review summarises and evaluates twenty-two studies. Methodological issues are considered, and clinical and research implications are discussed.

Section B

This is a cross-sectional survey of parents of people with eating disorders. It explores the relationships between depressed mood, entrapment, guilt, shame, self-criticism, self-compassion and submissive compassion using correlation and mediation analyses. There were several findings: first, entrapment and self-criticism were found to be mediators between the relationship of shame and depressed mood. Second, self-compassion appeared to reduce the experience of depressed mood through its effect on shame and entrapment. Third, self-compassion also appeared to reduce the experience of depressed mood through its effect on self-criticism. Clinical and theoretical implications, methodological limitations and suggestions for further research are discussed.

Section C

Includes all the appendices from the research.

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Major Research Project

Section A: Literature Review

A Review of Interventions for Carers of People With Eating Disorders: What Impact do They
Have on Psychological Distress?

Word Count: 7183 (516)

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Abstract

Background and Objectives: Carers of people with eating disorders have high levels of unmet needs. This review aims to investigate if interventions for carers are effective at reducing psychological distress.

Methodology: A systematic review of the literature was carried out to identify empirical research looking at the impact of interventions for carers of people with eating disorders on reducing carer psychological distress.

Results: Twenty-two papers were identified. Interventions studied could be grouped into three categories: workshops, skills-based self-help and therapy-based self-help. There were mixed results regarding the effectiveness of these interventions on reducing carer psychological distress. In studies where psychological distress had been investigated as several separate constructs there were differences on the impact the intervention had on anxiety and depression.

Considerations and Conclusions: The methodological quality of the studies identified was mixed. Limitations included small sample sizes and issues regarding measuring psychological distress. As well as more rigorous research, a better understanding of the constructs associated with psychological distress will support the development of interventions that can target these constructs more specifically.

Keywords: Carers, Distress, Eating Disorders, Interventions

Introduction

Needs of Carers of People With Eating Disorders

Eating disorders (EDs) are considered serious conditions with psychological and physical consequences, and high mortality rates (Klump, et al., 2009). Onset is typically within childhood and adolescence, a period of life associated with living at home with caregivers (Micali et al., 2013) but can persist into adulthood (Stoving et al., 2011). Therefore, the chronic and debilitating nature of EDs can result in families and friends providing long-term care for their loved ones (Hjern et al., 2006). Carers report being impacted by the ED throughout its course (Highet et al., 2005) and there is recognition by the National Institute for Clinical Excellence (NICE) that the mental health needs of families should be considered by ED services (NICE, 2017).

There is growing literature highlighting the unmet physical and mental health needs of carers (Haigh & Treasure, 2003). Among these needs, Kyriacou et al. (2008) found a large proportion of parents caring for a loved one with Anorexia Nervosa (AN) scored at or above the suggestive threshold for anxiety and depression (70% & 38% respectively). Systematic reviews have also found high levels of psychological distress in carers of people with EDs (Anastasiadou et al., 2014; Zabala et al., 2009).

Models of Caring for People With Eating Disorders

The impact of carer distress has been understood as part of The Cognitive Interpersonal Maintenance Model of AN developed by Schmidt and Treasure (2006), which has since been applied transdiagnostically across ED diagnoses (Goddard et al., 2011). The model suggests that carers' responses to an individual with an ED, such as experiencing psychological distress, can unintentionally maintain the ED, which in turn increases carer distress. Figure 1 postulates the interpersonal vicious cycles suggested by this model. The model is largely accepted and growing in evidence (Anastasiadou et al., 2014). Figure 2

shows a model of carer coping developed by this same research group (i.e. Treasure et al., 2005; Treasure et al., 2007; Treasure & Nazar, 2016), which is based on universal models of stress and coping (Folkman & Lazarus, 1984). The model suggests distress is triggered by societal, carer and ED-related factors when resources to cope have been depleted. In support of this model, systematic reviews (Zabala et al., 2009; Anastasiadou et al., 2014) have found experiences of burden and limited caregiving impact are related to psychological distress.

Carer Interventions

Previous reviews on interventions for carers of people with EDs have reported promising results on reducing psychological distress (Hibbs, Rhind et al., 2015; Treasure & Nazar, 2016). Hibbs, Rhind, et al. (2015) published a meta-analysis of studies showing the impact of carer interventions. The review included studies published between 2011 and 2013. They identified that carer interventions with more therapeutic involvements tended to show larger effect sizes, although this trend was not found to be significant. Treasure and Nazar (2016) narratively reviewed the literature on carer interventions, however nothing further was added in relation to Hibbs, Rhind et al.'s (2015) review regarding carer psychological distress.

Scope of the Current Review

This review aims to investigate the effectiveness of interventions at reducing psychological distress in carers of people with EDs. While the previous review by Hibbs, Rhind et al. (2015) was a meta-analysis it did not review papers in enough detail to meet the aims of the current review, particularly as it dealt with carer distress as only one of the variables it explored. Therefore, this review will add original material to the field.

Similarly to Hibbs, Rhind et al. (2015) this review intends to investigate interventions that are supplementary to carers. It will not review interventions that are treatments for people with EDs that involve family members, i.e. this review does not intend to review the

impact of family-based interventions developed for ED treatment on the family members that take part in these interventions. The current review does not have the capacity to consider this important area sufficiently alongside the group of carer interventions being explored.

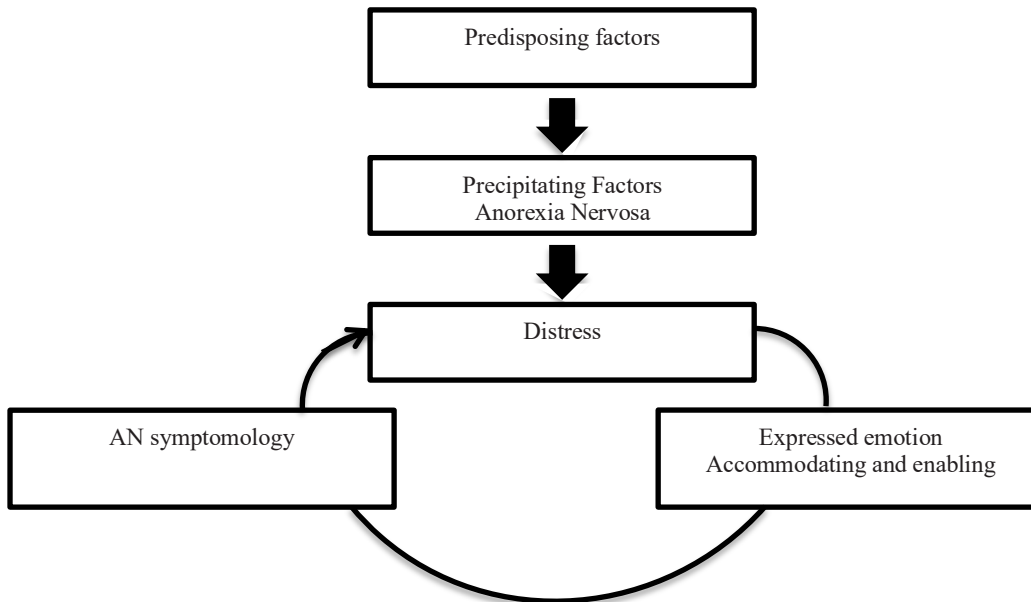
However, this is another important review that should be independently investigated.

While Hibbs, Rhind et al. (2015) considered psychological distress as part of a wider review on carers' needs, new and expanded research has since been published. Some of the studies included in Hibbs, Rhind et al. (2015) were longitudinal and follow-up studies have since been published, therefore, in the current review there is scope to examine the long-term effectiveness of these interventions. In addition, interventions have evolved and been investigated by research groups other than those who developed the interventions, therefore, there is now a seeming ability to evaluate independent investigations of the same (and in some cases further evolved) interventions. Lastly, novel interventions trialed in this population (such as Cognitive Remediation Therapy [CRT]) have since emerged in the literature. Data and analysis provided in the new literature since Hibbs, Rhind, et al. (2015) are not conducive to, nor permit, a second expanded meta-analysis, but findings will be integrated and discussed to the extent possible in relation to this previous review. Therefore, specific questions for this review were:

1. What types of interventions have been investigated regarding their impact on psychological distress in carers of people with EDs?
2. What does the current literature tell us about how effective these interventions are at reducing psychological distress in carers?

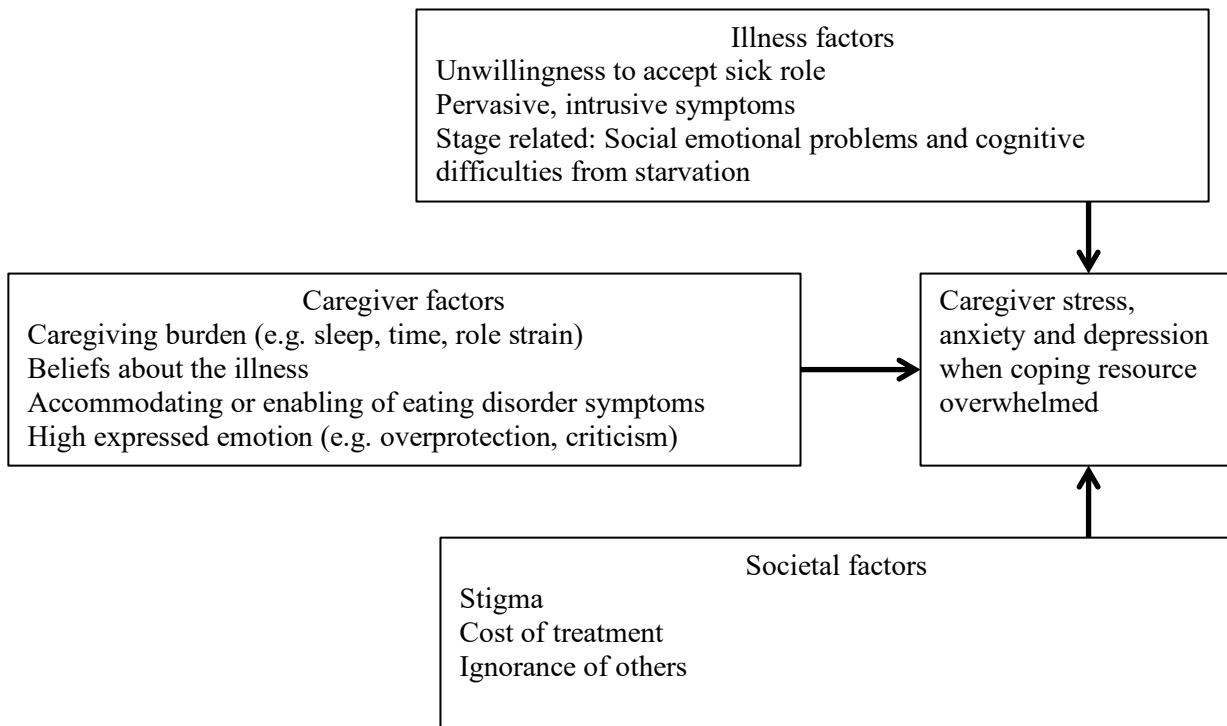
Figure 1

The Cognitive Interpersonal Maintenance Model of Anorexia Nervosa



Note. Model showing hypothesised cycles between ED symptoms and carer reactions.

Adapted from "The cognitive-interpersonal maintenance model of anorexia nervosa revisited: a summary of the evidence for cognitive, socio-emotional and interpersonal predisposing and perpetuating factors," by J. Treasure and U. Schmidt, 2013, *Journal of Eating Disorders*, 1(1), p. 19. CC BY 2.0.

Figure 2*Model of Caring Coping*

Note. Model of carer coping. Adapted from “Interventions for the Carers of Patients with Eating Disorders,” by J. Treasure and B.P. Nazar, 2016, *Current Psychiatry Reports*, 18(2), p. 16. CC BY 4.0.

Methodology

A systematic search on the following electronic databases was completed in January 2020: PsycINFO, Medline and Web of Science. These databases were chosen to identify the current review’s topics, as their collections comprise literature based on behavioural and social sciences. There were no time period filters in place. The search was limited to retrieve papers published in English only. Additional articles were sourced through scanning reference lists and through a Google Scholar search.

Search Terms

The search terms were identified through scoping the literature before the systematic search. The following search terms were used: (intervention OR treatment OR “self-help” OR skill* OR therap* OR education OR support* OR psychoeducation*) AND (parent* OR caregiver OR carer* OR family) AND (anorexia* OR bulimia* OR “binge eating disorder” OR “eating disorder”) AND (depress* OR “low mood” OR anxiety OR distress OR DASS OR HADS OR GHQ).

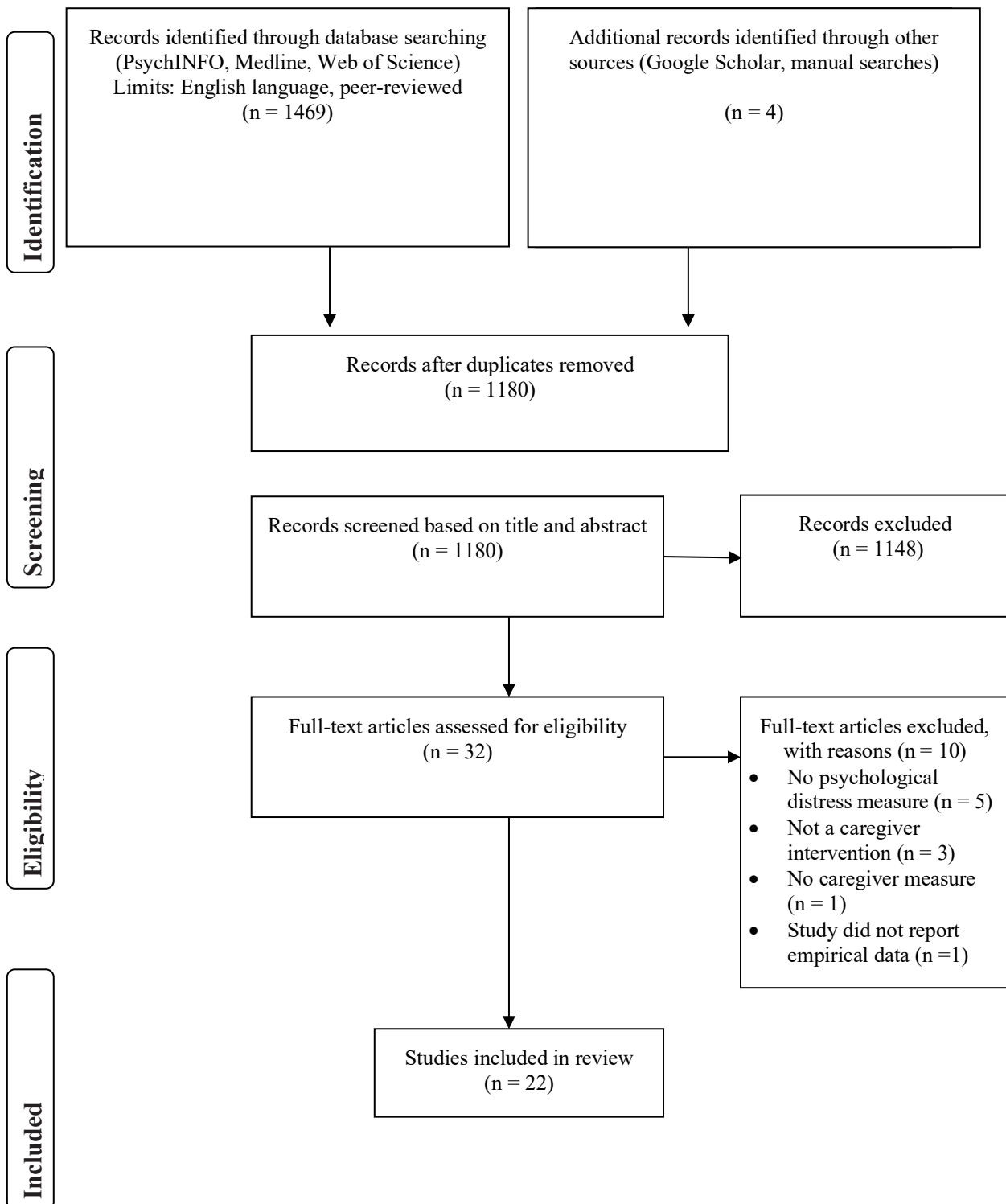
Eligibility Criteria

Studies were selected based on the following criteria:

1. Published in English and within a peer-review journal
2. Carers of people with EDs as participants
3. Use of a carer intervention in the methodology
4. Measure of psychological distress collected pre and post intervention. For purposes of this review level of distress was defined by scores on measures of anxiety, depression and psychological distress. This included subscale scores of these constructs in broader measures. Although an identified study (Dimitropoulos et al., 2019) was considered initially, the measure used, the World Health Organization Quality of Life assessment (WHOQOL-BREF; WHOQOL Group, 1998) did not meet the inclusion criteria regarding its validity to measure distress.

Exclusion Criteria

1. Where the intervention in the methodology was a family-based ED treatment
2. Where the study did not report original empirical data e.g. reviews or study protocols

Figure 3*Flowchart of Systematic Literature Search*

Literature Review

Review Structure

Twenty-two studies were identified through the systematic search. Of these 12 were papers also reviewed by Hibbs, Rhind et al. (2015) and a further 10 studies were identified through the search, all of which were more recent than the studies identified by Hibbs, Rhind et al. (2015). The findings of the 22 articles are summarised in Table 1. To synthesise the quality of the findings and identify gaps in the literature there is reference to methodological considerations throughout the review.

Critical appraisal checklists were referred to, to evaluate the methodological quality of the articles, specifically the downloadable Critical Appraisal Skills Programme (CASP, 2018) for assessing randomized controlled trials (RCTs) and the Downs and Black's (1998) checklist for non-randomized designs. However, in line with Booth et al.'s (2012) advice that checklists are helpful but can mislead conclusions if applied strictly, the current review used these as a guide of reference to systematically critique, but not to attribute any particular 'score' or to exclude articles.

Overview of Studies

Of the 22 studies, 14 were conducted in the United Kingdom (Adamson et al., 2019; Goddard et al., 2011; Grover, Naumann et al., 2011; Grover, Williams et al., 2011; Hibbs, Magill et al., 2015; Hodsoll et al., 2017; Lang et al., 2015; Magill et al., 2016; Salerno et al., 2016; Sepulveda, Lopez, MacDonald et al., 2008; Sepulveda, Lopez, Todd et al., 2008; Sepulveda, Whitney et al., 2008; Sepulveda et al., 2010; Whitney et al., 2011), three in Australia (Hoyle et al., 2013; Pepin & King 2013; Pepin & King 2016), two in Spain (Quiles et al., 2018; Sepulveda et al., 2019), one each in Canada (Keshen et al., 2020), Germany (Quadflieg et al., 2017) and Japan (Uehara et al., 2001).

Nine used a single-group pre-test post-test design (Grover, Williams et al., 2011; Lang et al., 2015; Pepin & King, 2013; Pepin & King, 2016; Sepulveda, Lopez, MacDonald

et al., 2008; Sepulveda, Lopez, Todd et al., 2008; Sepulveda, Whitney et al., 2008; Sepulveda et al., 2010; Uehara et al., 2001) and there was one case-series using a pre-test and post-test design (Adamson et al., 2019). Twelve RCTs were identified (Goddard et al., 2011; Grover, Naumann et al., 2011; Hibbs, Magill et al., 2015; Hodsoll et al., 2017; Hoyle et al., 2013; Keshen et al., 2020; Magill et al., 2016; Quadflieg et al., 2017; Quiles et al., 2018; Salerno et al., 2016; Sepulveda et al., 2019; Whitney et al., 2011), of which one of the newly identified studies was a longitudinal follow-up (Magill et al., 2016) of a previously reviewed study (Hibbs, Magill et al., 2015).

The quality appraisal tools used in this review indicated a good level of quality across the non-randomised studies given the limited nature of their design. Whilst RCTs are overall more controlled, the quality of the identified studies using this design was limited by issues of power. Only two studies identified in this review adequately met power in their analyses (Hodsoll et al., 2017; Quadflieg et al., 2017). Additional identified issues of quality are explored more thoroughly throughout the synthesis.

Psychological distress was assessed by four validated self-report measures: the General Health Questionnaire (GHQ; Goldberg, 1992), the Hospital Anxiety and Depression scale (HADS; Zigmond & Snaith, 1983), the Depression Anxiety and Stress Scale (DASS; Lovibond & Lovibond, 1993) and the Profile of Mood States (POMS; Yokoyama & Araki, 1991).

Broadly, the studies' interventions provided psychoeducation, skills-training or therapy-based interventions. The formats of the interventions were workshops, self-help materials / bibliotherapy with varying degrees of self-directed guidance and activity. All but four studies (Adamson et al., 2019; Lang et al., 2015; Quadflieg et al., 2017; Whitney et al., 2011) targeted the intervention solely at the carers and not their loved ones (see Table 1).

Table 1*Summary of Included Studies*

Study	Country	Design	Measure	Skills-based self-help			
				Participants N = Type of carer	ED information Diagnosis Age (Years) Treatment Setting	Intervention	Results (distress reductions)
Adamson et al. (2019)	UK	Case series	DASS-21	N = 21 Family	AN M = 27.00 Inpatient	ECHOMANTRA ^a compared to audit data	Post: Not significant 3-month follow-up: Not significant
Goddard et al. (2011)	UK	RCT	HADS GHQ-12	N = 153 Self-identified	EDs M = 20.85 Inpatient & outpatient	2 groups: 1. ECHO ^b 6 weeks 2. ECHO ^b + coaching Telephone coaching by professional or ex-carer 40 minutes each Up to 3 calls	Post: HADS & GHQ-12 significant 6-week and 3-month follow-up: HADS significant GHQ-12 not reported Between groups: No significant differences
Hibbs, Magill et al. (2015)	UK	RCT	DASS-21	N = 268 Self-identified	AN M = 26.00 Inpatient & day treatment	2 groups: 1. ECHO ^b Telephone coaching by professional or ex-carer 40 minutes each	Post: Not significant

						At least 4 calls, maximum 10	6-month and 12-month follow-up: Not significant
						2. Treatment as usual group	Between groups: No significant differences
Hodsoll et al. (2017)	UK	RCT	DASS-21	N = 149 Family	AN Under 21 Outpatient	3 groups: 1. ECHO ^b 2. ECHO ^b + coaching Telephone coaching by carers and graduates 30-60 minutes each Up to 10 calls 3. Treatment as usual group	Post: Not significant 12-month follow-up: Not significant Between groups: no significant differences
Keshen et al. (2020)	Canada	RCT	DASS-21	N = 47 Self-identified	ED Adult Outpatient	2 groups: 1. Adapted ECHO ^c 4 weeks 2.5 hours in total No telephone coaching 2. Treatment as usual group	Post: Not significant 3-month follow-up: Not significant Between groups: No significant differences
Magill et al. (2016)	UK	RCT	DASS-21	N = 268 (-59 lost to follow up at 2 years)	AN M = 27.00 Inpatient	Same as Hibbs, Magill et al. (2015)	Post: Reported in Hibbs

Self-identified						2-year follow-up: Not significant	
						Between groups: No significant differences	
Quadflieg et al. (2017)	Germany	RCT	GHQ-12	N = 269 Self-identified	EDs M = 20.90 Inpatient	<p>2 groups:</p> <p>1. German translated ECHO^d No telephone coaching</p> <p>2. Treatment as usual group</p> <p>* Authors also identified a subgroup of participants whom also sought professional support outside of the study compared in both groups:</p> <p>1. ECHO+ Participants from the ECHO group but also sought support</p> <p>2. Control + Participants in the control group but also sought support</p>	<p>Post: Not significant</p> <p>3-month follow-up: Not significant</p> <p>ECHO+ vs. Control+ Post: Significant</p> <p>3-month follow-up: Significant</p> <p>Between groups: ECHO+ significant compared to Control+</p>
Salerno et al. (2016)	UK	RCT	DASS-21	N = 149 Self-identified	AN & Atypical AN M= 16.70 Outpatient	<p>2 groups:</p> <p>1. ECHO^b Telephone coaching by professional or ex-carer</p>	<p>Post: Not significant</p> <p>12 month Follow-up: Not significant</p>

						40 minutes each Up to 5 calls	Between groups: No significant differences
						2. Control group	
Sepulveda, Lopez, MacDonald et al. (2008)	UK	Pre- post	HADS GHQ-12	N = 14 Self-identified	AN & BN M = 17.2 Inpatient, outpatient & not in treatment	ECHO ^b 3 months Telephone coaching by professional or ex-carer 30 minutes each 3 calls	Post: Not significant Follow-up: N/A
Therapy-based Self-help							
Study	Country	Design	Measure	Participants N = Type of carer	ED information Diagnosis Age (Years) Treatment setting	Intervention	Results (distress reductions)
Grover, Naumann et al. (2011)	UK	RCT	HADS	N = 63 Self-identified	EDs M = 20.40 -	2 groups: 1. OAO ^e online 4-months of online access Email/phone guidance by a clinician Up to 20 minutes a week 2. Wait-list control group	Post: Significant 6-month follow-up: Not significant Between groups: No significant differences
Grover, Williams et al. (2011)	UK	Pre- post	HADS	N = 27 Self-identified	AN M = 28.00 -	OAO ^e offline Duration not controlled (M = 135 days) Email/phone guidance by CBT clinician with ED expertise	Post: Overall HADS score significant HADS-anxiety significant

						Up to 20 minutes a week	HADS-depression significant
							10-12 week follow-up: HADS-depression significant
Hoyle et al. (2013)	Australia	RCT	DASS-21 GHQ-12	N = 36 Self-identified	AN - -	2 groups: 1. OAO ^e online with guidance 7 weeks access Guidance by a trainee psychologist Guidance duration not reported 2. OAO ^e online without guidance 7 weeks access	Post: Not significant 3-month follow-up: Not significant Between groups: No significant differences
Lang et al. (2015)	UK	Pre-post	HADS	N = 6 Mothers	AN M = 19.52 Outpatient	Self-help CRT ^f 2-hour training session with child with rationale for CRT for AN 6 weeks self-help Recommended 20 minutes of CRT twice weekly	Reduction in mean scores, significance not reported Follow-up: N/A
Workshops							
Study	Country	Design	Measure	Participants N = Type of carer	ED information ED Diagnosis Age (Years) Treatment Setting	Intervention	Results (distress reductions)

Pepin & King (2013)	Australia	Pre-post	GHQ-12	N = 15 Parent	AN & BN M = 20.13 -	CCSTW ^g Weekly 6 sessions 2.5 hours each session Encouraged to buy written manual but not mandatory	Post: Not significant 8-week follow-up: Not significant
Pepin & King (2016)	Australia	Pre-post	GHQ-12	N = 77 Self-identified	ED M = 19.05 -	CCSTW ^g Weekly 6 sessions 2.5 hours each session Encouraged to buy written manual but not mandatory	Post: Significant 8-week follow-up: Significant
Quiles et al. (2018)	Spain	RCT	HADS GHQ-12	N = 64 Family	ED M = 20.00 Outpatient	Two groups: 1. Spanish CCSTW ^g 6 sessions, 1 follow-up 2 hours each session 2. Psychoeducation workshop ^h 6 sessions, 1 follow-up 2 hours each session	Post: HADS-depression & GHQ-12 significant 3-month Follow-up: Not significant Effect size for time: Small Between groups: No significant differences
Sepulveda, Lopez,	UK	Pre-post	GHQ-12	N = 35 Self-identified	EDs Range = 15-33 -	CCSTW ^g 2 per month 6 sessions, 1 follow-up	Post: Significant

Todd et al. (2008)						2 hours each session	3-month follow-up: Significant
						Given written manual and PowerPoint slides	
Sepulveda, Whitney et al. (2008)	UK	Pre-post	GHQ-12	N = 57 Self-identified	AN & BN M = 23.50 -	CCSTW ^g 2 per month 6 sessions 2 hours each session	Post: Significant Follow-up: N/A
						Given written manual and PowerPoint slides	
Sepulveda et al. (2010)	UK	Pre-post	GHQ-12	N = 43 Family	AN & BN Range = 9-43 -	CCSTW ^g 2 per month 6 sessions, 1 follow-up 2 hours each session	Post: Significant 3-month follow-up: Significant
						Given written manual and PowerPoint slides	
Sepulveda et al. (2019)	Spain	RCT	HADS GHQ-12	N = 54 Family	EDs M = 23.92 Outpatient	2 groups: 1. Spanish CCSTW ^g 6 sessions, 1 follow-up 2 hours each session 2. Psychoeducation workshop ^h 6 sessions, 1 follow-up 2 hours each session	Post: GHQ-12 significant 3-month follow-up: Not significant Between groups: No significant differences
Uehara et al. (2001)	Japan	Pre-post	POMS	N = 28 Family	EDs M = 20.10 Inpatient & outpatient	Psychoeducation group ⁱ Monthly 5 sessions	Post: Significant Follow-up: N/A

							N/A
Whitney et al. (2011)	UK	RCT	GHQ-12	N = 119 Family	AN +18 Inpatient	2 groups: 1. Family day workshop ^j 3 full days 2. Individual family work ^k Weekly or fortnightly sessions 1- 2-hour sessions (up to 18 hours of treatment)	Post: Significant 3-year follow-up: Significant Between groups: No significant differences

Notes. ^a ECHOMANTRA. Carers integrated into inpatient treatment including providing meal support. Carers also provided with ECHO workbook, DVDs and attend a 1-day psychoeducation workshop. See Adamson et al. (2019) for a full description.

^b ECHO. Carers provided with manual (Treasure et al., 2007) and 5 DVDs (see Sepulveda, Lopez, MacDonald et al., 2008 for a description of DVD content) made up of content of that made for CCSTW.

^c ECHO DVD only. DVD made up of 17 vignettes demonstrating effective management of ED situations (e.g. supporting meal times).

^d German translated and adapted ECHO. Short translated excerpt from the ECHO manual; 5 DVDs for carers; DVD addressing the caregiver intervention topic presented to patients over two 90-minute group sessions.

^e Overcoming Anorexia Online. Integrative online platform with modules based on systemic-CBT.

^f Cognitive Remediation Therapy. See Tchanturia (2014) for a description.

^g Collaborative Care Skills Training Workshops (Sepulveda, Lopez, Todd et al., 2008). Focus on practical skills based on motivational interviewing and cognitive behavioural therapy (CBT) to support carers in developing skills to manage their emotions more effectively and support their loved one with shared goals in line with their loved one's readiness to change. Format made up of discussions, group work and role-plays.

^h Psychoeducation group. Content based on ED maintenance factors and consequences, information from Fairburn et al. (2009). Two sessions focussed on carer coping skills content.

ⁱ Psychoeducation intervention. Lectures and discussions on EDs, including etiology, course, complications, diagnosis, history, symptoms, treatment.

^j Family day workshop. Three-day course delivered to two families at a time. Psycho-education around stress-appraisal, focus on reducing criticism and improving communication. Motivational interview skills shared. Patient involved in most of the intervention. See Treasure et al. (2012) for a full description.

^k Individual family work. Phase 1: Engagement, provide information on AN. Instil parental confidence around recovery and reduce guilt. Phase 2: Problem-orientated. Focus on parental coping and managing ED symptoms.

Carer Workshops

Nine studies investigated the use of facilitated workshops for carers of people with EDs. One of these studies assessed a purely psychoeducational workshop (Uehara et al., 2001) and eight studies used skill-based curriculums (Pepin & King, 2013; Pepin & King, 2016; Quiles et al., 2018; Sepulveda, Lopez, Todd et al., 2008; Sepulveda, Whitney et al., 2008; Sepulveda et al., 2010; Sepulveda et al., 2019; Whitney et al., 2011) designed around a carer coping model (i.e. Treasure et al., 2005) and the interpersonal elements of a maintenance model of anorexia nervosa (i.e. Schmidt & Treasure, 2006).

Psychoeducation Workshops

The psychoeducational intervention described and investigated by Uehara et al. (2001) delivered five psycho-education workshops that combined lectures and group discussions. Content was based on history of EDs, diagnosis, symptoms, treatment, complications, course, aetiology and epidemiology. They used a single group pre-test post-test design and found a significant change in carer outcomes, including a reduction in their distress as measured by a Total Mood Disturbance Score on the POMS (Yokoyama & Araki, 1991). However, methodological issues such as no follow-up and no inclusion of a control group limits understanding whether the observed changes occurred as a result of the workshop or whether these changes would have maintained over time. The study was also conducted in Japan, which may limit the generalisability of the results to Western carers.

Skills-Based Workshops

Whitney et al.'s (2011) RCT allocated carers of adults with AN receiving inpatient treatment to either a psychoeducational and skill-based intervention named a Family Day Workshop (FDW) or individual family work. The FDW consisted of three full-day workshops delivered to two families at a time and focussed on stress appraisal, reducing criticism and hostility and increasing warmth and teaching motivational interviewing skills to

improve communication. The theory or model, which the individual family work was based on, was not stated, however, the authors described up to 18 hours of treatment aimed at reducing certain types of interpersonal interactions within the family. Psychological distress as measured by the GHQ-12 significantly reduced post-intervention and at three-month follow-up for both groups, however, no significant differences between the groups were found.

Seven of the studies (Pepin & King, 2013; Pepin & King, 2016; Quiles et al., 2018; Sepulveda, Lopez, Todd et al., 2008; Sepulveda, Whitney et al., 2008; Sepulveda et al., 2010; Sepulveda et al., 2019) investigated *Collaborative Care Skills Training Workshops* (CCSTW) which developed from the FDW. CCSTW has been developed for carers of people with all types of ED and is not restricted to delivering only two families at a time. The intervention is made up of six workshops focussing on expressed emotion, matching goals with their loved one's stage of change, motivational interviewing skills to develop effective communication skills and support loved ones in developing readiness to make changes. There is also a focus on functional analysis and problem-solving of problematic behaviours. There is time within the workshops to practice these skills in role-plays. Original versions of trialling this intervention involved providing participants with a written manual (i.e. Treasure et al., 2007) and copies of the PowerPoint slides (Sepulveda, Lopez, Todd et al., 2008; Sepulveda, Whitney et al., 2008; Sepulveda et al., 2010).

Five studies used a pre-test post-test design to evaluate changes in carer outcomes following completion of CCSTW. Three of these studies were conducted in the UK (Sepulveda, Lopez, Todd et al., 2008; Sepulveda, Whitney et al., 2008; Sepulveda et al., 2010) and two were conducted in Australia following the researchers attending a brief training in the UK (Pepin & King, 2013; Pepin & King, 2016). One study did not find significant reductions in distress as measured by the GHQ-12 (Pepin & King, 2013),

however, the sample size was small (N=15) thus limiting the possibility to reach statistical power to identifying changes. A later study conducted by the same authors with a larger sample found a significant reduction in distress that maintained at an eight-week follow-up (Pepin & King, 2016). Significant post-test reductions were also observed by the three original UK studies (Sepulveda, Lopez, Todd et al., 2008; Sepulveda, Whitney et al., 2008; Sepulveda et al., 2010) and maintained in the two studies that reported 3-month follow-ups (Sepulveda, Lopez, Todd et al., 2008; Sepulveda et al., 2010). However, the lack of comparison groups in these studies makes it difficult to determine the effectiveness of the intervention specifically.

Two RCTs have since been published (Quiles et al., 2018; Sepulveda et al., 2019) comparing a Spanish translation of CCSTW to a psychoeducation group. Both interventions were made up of six workshops, and in the psychoeducation group two sessions covered carer distress. Both studies found a significant small effect size for reduction of GHQ-12 scores post-intervention in both groups. Quiles et al. (2018) showed that this reduction maintained at a 3-month follow-up for carers that attended the psychoeducation group. Distress was also measured using the HADS and the subscales of depression and anxiety were reported separately. Quiles et al. (2018) found a significant small effect size for reduction in the HADS-depression subscale post-intervention for both groups, although, these findings were not observed by Sepulveda et al. (2019). In addition, Quiles et al. (2018) found this reduction in depression was maintained at follow-up in the psychoeducation group. There was also a reduction in anxiety for this group (with a small but statistically significant effect) this effect was also maintained at follow-up.

While there were attempts for methodological control through comparing CCSTW to another intervention, and using blind assessors at allocation and analysis, the lack of a non-intervention control group makes it difficult to understand the processes in which change may

have occurred over time. Collecting the HADS subscale scores also provides a better understanding of the constructs of distress that may be impacted by the intervention, however, Quiles et al. (2018) failed to report the CCSTW follow-up finding for subscale scores, despite reporting these findings for the comparison intervention group. It is unclear whether this was because of a lack of significant findings or not. Such omissions limit the conclusions that can be drawn regarding changes in depression and anxiety over time after receiving the CCSTW intervention.

Overall, taken together these studies provide some support that carer workshops may be able to reduce distress of carers for up to three years (Whitney et al., 2011) and cross-culturally. However, the RCTs did not find superiority of skills-based workshops compared to other interventions (Whitney et al., 2011; Quiles et al., 2018; Sepulveda et al., 2019). In one RCT (Quiles et al., 2018) favourable longer-term effects were observed in the direction of a psychoeducation group, although this RCT may have been limited by small sample sizes and statistical power to observe differences between the groups. Two RCTs report not undertaking a formal sample size calculation (Quiles et al., 2018; Whitney et al., 2011) and Sepulveda et al. (2019) completed an a priori power analysis but did not reach adequate power at time of analysis. In addition, the lack of a non-intervention group in these studies raises questions as to whether the interventions were responsible for the changes observed or if these changes were the result of other confounding variables that may have changed over time. Problematic sample homogeneity was also observed across studies, participants that made up the samples were mainly parents, specifically mothers. The results therefore may not represent the impact that carer workshops may have on distress for other relations.

Self-Help Interventions

Thirteen studies investigated the use of self-help materials for carers of people with EDs (Adamson et al., 2019; Goddard et al., 2011; Grover, Naumann et al. 2011; Grover,

Williams et al., 2011; Hibbs, Magill et al., 2015; Hodsoll et al., 2017; Hoyle et al., 2013; Keshen et al., 2020; Lang et al., 2015; Magill et al., 2016; Quadflieg et al., 2017; Salerno et al., 2016; Sepulveda, Lopez, MacDonald et al., 2008). Nine of these studies had interventions based on the skills-based material covered in CCSTW that had been developed into self-help material called *Experienced Carers Helping Others* (ECHO; Adamson et al., 2019; Goddard et al., 2011; Hibbs, Magill et al., 2015; Hodsoll et al., 2017; Keshen et al., 2020; Magill et al., 2016; Quadflieg et al., 2017; Salerno et al., 2016; Sepulveda, Lopez, MacDonald et al., 2008). Two therapy-based self-help interventions were also identified: three studies included interventions based on a systemic cognitive-behavioural therapy (CBT; Grover, Naumann et al., 2011; Grover, Williams et al., 2011; Hoyle et al., 2013) and one study investigated cognitive-remediation therapy (CRT; Lang et al., 2015).

Skills-Based Self-Help

One type of skills-based self-help intervention was identified in nine studies (Adamson et al., 2019; Goddard et al., 2011; Hibbs, Magill et al., 2015; Hodsoll et al., 2017; Keshen et al., 2020; Magill et al., 2016; Quadflieg et al., 2017; Salerno et al., 2016; Sepulveda, Lopez, MacDonald et al., 2008) and has been coined ECHO (Goddard, Macdonald, 2011). ECHO was developed with the aim of increasing accessibility of the material covered in CCSTW to more carers cost-effectively (Sepulveda, Lopez, MacDonald et al., 2008). The original format of ECHO was to provide carers with a skills-based manual (Treasure et al., 2007) and a set of DVDs (three theoretical, two practical) to provide the information and demonstration that is provided in CCSTW. The DVDs convey this using a combination of PowerPoint presentations and video-clips to demonstrate how the skills can be applied in a practical setting i.e. providing support during mealtimes.

The first study trialling this intervention (Sepulveda, Lopez, MacDonald et al., 2008) also offered telephone coaching as an additional means of support for carers. The duration

and inclusion of telephone coaching has varied across studies, from three (Goddard et al., 2011; Sepulveda, Lopez, MacDonald et al., 2008), five (Salerno et al., 2016) or up to ten (Hibbs, Magill et al., 2015; Hodsoll et al., 2017; Magill et al., 2016) calls being offered, and lasting for a duration of up to 30 (Sepulveda, Lopez, MacDonald et al., 2008; Goddard et al., 2011), 40 (Salerno et al., 2016) or 60 minutes (Hodsoll et al., 2017). Three more recent studies did not include any telephone coaching (Adamson et al., 2019; Keshen et al., 2020; Quadflieg et al., 2017). Most of the ECHO studies employed RCT designs (Goddard et al., 2011; Hibbs, Magill et al., 2015; Hodsoll et al., 2017; Keshen et al., 2020; Magill et al., 2016; Quadflieg et al., 2017; Salerno et al., 2016) except for Sepulveda, Lopez, MacDonald et al.'s (2008) feasibility study which utilised a pre-test post-test design, and Adamson et al.'s (2019) feasibility study of recent developments to ECHO using a case-series design.

There were five studies with samples made up of carers of people receiving outpatient ED treatment only (Salerno et al., 2016; Hodsoll et al., 2017; Keshen et al., 2020) or samples made up of a mix of carers of people receiving either outpatient, inpatient or no ED treatment (Sepulveda, Lopez, MacDonald et al., 2008; Goddard et al., 2011). These studies reported delivering the ECHO intervention similarly but with small variations to the duration of the telephone coaching, except for Keshen et al.'s (2020) adaptations to provide only one DVD and to not provide any coaching. Of these studies, Goddard et al. (2011) was the only study to find a significant change to distress. They found a reduction in carers scores on HADS and GHQ-12 measures post-intervention which also maintained at three-month follow-up. In this study the group allocation was to ECHO with or without coaching. The findings did not reveal any significant differences in distress between these groups, although this may be explained by the lack of power to find between-group differences, as reported by the authors.

There were four studies with samples made up initially by carers of people with EDs receiving inpatient treatment (Hibbs, Magill et al., 2015; Magill et al., 2016; Quadflieg et al.,

2017; Adamson et al., 2019). The reduction in carers distress scores observed in Goddard et al.'s (2011) study were not replicated in Hibbs, Magill et al.'s (2015) study that measured changes in distress of carers of young adults diagnosed with AN, nor in Magill et al.'s (2016) two-year follow-up of Hibbs, Magill et al.'s (2015) study.

Adamson et al.'s (2019) case-series adapted ECHO for carers and their loved ones with the aim of improving adult AN inpatient to outpatient treatment transition. They describe using a combination of the DVD and manual with a one-day psycho-education workshop as well as offering carers two opportunities to practice supporting mealtimes with their loved ones. This was combined with a therapeutic intervention aimed at the patient. The authors did not find a significant difference in carer distress scores following the intervention.

Quadflieg et al. (2017) also adapted their ECHO format for carers of young adults receiving inpatient treatment for a range of EDs. The intervention did not include the full manual or coaching, and some materials were provided to patients on carer topics. Medium effect sizes for the reduction in GHQ-12 scores were found in carers that had received ECHO and carers who had not received any intervention. The authors also found a small effect size for the reduction of GHQ-12 scores in favour of carers in the ECHO group who were also accessing professional help outside of the study when compared to carers in the control group accessing help outside of the study.

Overall, there were many studies that used rigorous experimental design to evaluate the effectiveness of ECHO, although taken together the ECHO intervention was minimally supported by most of these studies. Nonetheless, two RCTs (Goddard et al., 2011; Quadflieg et al., 2017) found significant results, although some caution is needed when interpreting these. For example, Quadflieg et al. (2017) only found a small effect size for ECHO when accounting for participants also accessing additional support outside the study. In addition,

the studies varied in their quality, such as Adamson et al.'s (2019) case-series that lacks experimental control by nature of the design.

Of the RCTs there were also methodological issues such as small samples that were not adequately powered (Goddard et al., 2011; Keshen et al., 2020; Magill et al., 2016) and where it was not possible to determine whether the samples were appropriately powered to observe differences due to reporting issues or no power calculations (Hibbs et al., 2015; Salerno et al., 2016). In a larger adequately powered RCT there was a lack of control over the blinding of study arms, meaning members of the study team were aware of what participants made up the different study conditions (Quadflieg et al. 2017). Nonetheless, Hodsoll et al.'s (2017) adequately powered RCT design included three study arms including a non-intervention group offering an opportunity to reliably compare differences between interventions and to possible carer changes over time without intervention (though none were found).

While a variety of distress measures had been used across studies, it was interesting that differences were only observed using HADS and GHQ-12 measures, it may be that the DASS-21 was not as sensitive to the constructs being identified by the other measures for this group of carers. Unfortunately, there were omissions of reporting subscale scores in some studies (Hibbs, Magill et al., 2015; Magill et al., 2016; Salerno et al., 2016; Hodsoll et al., 2017; Adamson et al., 2019) which limits the conclusions that can be drawn about what specific constructs were changing as a result of the interventions.

These studies covered a breadth of carers. Participants were recruited from a range of treatment settings and the samples were made up of carers of people with various types of ED diagnosis and age groups. Therefore, the findings can be generalised broadly to carers of people with EDs.

Therapy-Based Self-Help

Overcoming Anorexia Online. There were three studies that investigated a formulation based systemic-CBT approach called *Overcoming Anorexia Online* ([OAO]; Grover, Naumann et al., 2011; Grover, Williams et al., 2011; Hoyle et al., 2013). Originally the format of the intervention consisted of seven modules dispersed into nine workbooks. This intervention was designed as an interactive approach where carers build an understanding of how their coping behaviours and responses to their loved one interact with ED symptomology. There is a focus on both supporting their loved one and addressing their own needs.

The intervention was initially piloted as an offline intervention in a pre-test post-test study (Grover, Williams et al., 2011). Carers of people with a diagnosis of AN received nine workbooks and up to 20 minutes weekly support provided by a clinician trained in CBT and experienced in treating ED. Grover, Williams et al. (2011) found significant reductions from baseline distress as measured by the HADS (overall score, anxiety & depression subscales), at post-intervention and at 10-12 week follow-up. The HADS-depression subscale scores also significantly reduced from post-intervention at the follow-up.

Online versions of OAO have been examined in two RCTs that measured psychological distress (Grover Naumann et al., 2011; Hoyle et al., 2013). The online version was described as interactive in its approach, whereby carers could respond to questions, rate their progress and access feedback based on their responses. Whilst Grover Williams et al. (2011) did not control for the duration of the intervention (M = 135 days / 4.4 months), the time participants had access to the online platform varied across the RCTs from under two months (Hoyle et al. 2013) to four months (Grover Naumann et al., 2011). The content of the intervention offered by Grover, Naumann et al. (2011) was the same as that of Grover, Williams et al. (2011), apart from Grover, Naumann (2011) delivered their content on an online platform. There were also noticeably different samples as Grover, Naumann et al.

(2011) did not restrict the sample to carers of people with AN. They found a significant reduction in the HADS overall score post-intervention but there were no significant reductions found at follow-up. There were also no significant differences between carers that received OAO or those awaiting OAO. Similarly, Hoyle et al. (2013) did not find any significant reductions or differences in their sample of carers of individuals with AN accessing OAO either with or without support. This could be explained by their use of a shorter intervention condition than had been provided in previous studies (Grover Naumann et al., 2011; Grover, Williams et al., 2011) furthermore, the support in this study was not provided by a trained clinician, but by a trainee psychologist whom may have had less experience in this field.

Overall, the paucity of studies looking at OAO makes it difficult to draw conclusions about the effectiveness of OAO on reducing carer distress. While there were some short-term reductions in carer distress (Grover, Williams et al., 2011; Grover, Naumann et al., 2011), significant follow-up findings were not observed in the two RCTs indicating that the possible impact of OAO on distress may not last longer-term (Grover, Naumann et al., 2011; Hoyle et al., 2013). The significant findings observed by Grover, Williams et al. (2011) may therefore have been influenced by factors that were not controlled for such as the length of time taken to complete the intervention. This idea is supported by the lack of significant results observed in Hoyle et al.'s (2013) study given that the duration of the intervention was the shortest of the three studies. In addition, no significant differences were found between the intervention and a wait-list control group in Grover, Naumann et al.'s (2011) RCT.

It is important to highlight limitations in the depth of information reported in several of the studies. For example, Hoyle et al. (2013) did not provide details of their sample, such as the relationship of the carers to the person they were caring for. In addition, there were missed opportunities identified in the RCTs to report on all of the constructs of distress

measured on the outcome measures they utilised. As shown in Grover, Williams et al.'s (2011) study analysing the subscales separately provided findings that may have been missed if only the broader score was reported.

While the RCTs offer the opportunity for the effects of the intervention to be observed more accurately, both RCTs reported being underpowered (Grover, Naumann et al. 2011; Hoyle et al., 2013). This raises the possibility that potential differences over time or between groups may have not been observed due to insufficient power.

It was perhaps unsurprising that the samples in these studies were made up of mainly carers of individuals with AN given that OAO was initially developed for this population. Therefore, at this time it is not possible to confidently generalise these findings to carers of other ED diagnoses.

Cognitive Remediation Therapy. Lang et al. (2015) looked at a self-help version of CRT offered to mothers and their daughters diagnosed with AN using a pre-test post-test study design. CRT has been developed to target thinking styles using experiential tasks and it encourages cognitive flexibility and bigger picture thinking, without talking about ED related topics (Tchanturia, 2014). In the study the participants attended a two-hour workshop about CRT before commencing with the self-help materials in their own time over a six-week period. They were advised to engage with 20 minutes of the CRT exercises twice weekly. The paper reported a reduction of distress measured by the HADS; however, the small sample size did not reach power needed to calculate the differences in these scores statistically. Nonetheless, this is a novel study of carer intervention, which indicates need for further investigation using a more rigorous design.

Discussion

Overall Results

This review aimed to report on the effectiveness of carer interventions on reducing psychological distress. Alike Hibbs, Rhind et al.'s (2015) review broadly two types of intervention were identified, carer workshops and self-help interventions. Across these interventions there were mixed results regarding change in psychological distress post-intervention and at follow-up.

All the studies investigating the effectiveness of carer workshops reported a reduction of carer distress following an intervention. These included carer workshops based on the interpersonal maintenance model (Treasure & Schmidt, 2013) and workshops based on psycho-educational material. For the studies investigating self-help interventions, many of findings were broadly non-significant. Nonetheless, there were significant reductions in distress for up to 3-months reported by two of the RCTs observing the impact of the CCSTW material delivered in an accessible form, ECHO (Goddard et al., 2011; Quadflieg et al., 2017). These studies differed in what they provided in terms of additional guidance; Goddard et al. (2011) offered telephone coaching in one of their intervention groups; whereas Quadflieg et al. (2017) did not offer any coaching. In terms of therapy-based self-help interventions, there were far fewer studies identified. Significant reductions post-intervention (but not at follow-up) were observed in one of two RCTs looking at OAO (Grover, Naumann et al., 2011). Whereas, the sole study investigating CRT (Lang et al., 2015) did not reach the significant power required to statistically determine the reductions of distress reported.

Given that the CCSTW and ECHO interventions aim to disrupt maintenance cycles as theorised in the interpersonal maintenance model (Treasure & Schmidt, 2013), studies that found significant carer distress reductions following these interventions provide some support for this model. However, it is unclear what processes may have contributed to distress reductions given reductions were also observed following interventions not based on this

model, in addition to the absence of distress reductions in several of the self-help modalities based on this model.

Overall, in the current review determining the effectiveness of the specific interventions (and the impact of additional guidance) was less clear due to the studies available and methodological issues, which will be considered in turn below.

Methodological Considerations

Design

Most of the studies reviewed utilised an RCT study design. RCT designs benefit from control groups, which are randomly assigned and have researchers and participants blind to conditions and are therefore more likely to reduce effects being found due to variables other than those studied. RCTs also allow for the calculation of effect size which is helpful to both clinicians and researchers. Therefore, there can be some confidence that the reliability of the findings obtained were due to the interventions being investigated. Nonetheless, many of the studies identified for this review lacked adequate power to find significant differences across time or between groups. Only two studies reported being adequately powered for all of their analyses (Hodsoll et al., 2017; Quadflieg et al., 2017). The remaining RCTs were either underpowered (Grover, Naumann et al. 2011; Hoyle et al., 2013; Keshen et al., 2020; Magill et al., 2016; Sepulveda et al., 2019); only powered for post-intervention effects not between group analyses (Goddard et al., 2011); did not calculate a power analysis (Quiles et al., 2018; Salerno et al., 2016; Whitney et al., 2011); or calculated power but did not report whether this was met (Hibbs, Magill et al., 2015).

Across all the interventions only one RCT study found significant differences in favour of a carer intervention, ECHO, in comparison to a non-intervention control group (Quadflieg et al. 2017). However, these findings may be limited by researcher bias, as there was a lack of researcher blinding achieved in this study. Moreover, the results between the

intervention and control group was only significant when professional support outside of the study intervention was sought alongside. This may suggest that carers that seek professional support may respond better to the intervention and/or respond to the support they seek. However, it is unclear at this time why these positive effects were observed, but leads to further questions, for example, around what the benefits are of a higher dosage of support and the possible role of carer motivation.

There were some limitations in reporting across the studies regarding participant demographics. The omissions of such information make it difficult to determine the population of carers that the intervention was targeted at. Nonetheless, most studies reported samples that mainly consisted of family members and mothers. Overall, these findings cannot be confidently generalised broadly to carers of people with EDs.

Measure and Reporting of Psychological Distress

While all the measures used in the reviewed studies have been validated for assessing psychological distress in general public populations. Interestingly there were no significant findings found when studies used the DASS measure, this is in line with a finding in the previous review; that the type of distress measures used in studies explained the variance between studies (Hibbs, Rhind et al., 2015). It is possible that the DASS measure was not as sensitive to the change of the experiences of distress for this carer population. It is unclear from this review as to why this might be the case, nonetheless, this information may be useful for clinicians and researchers considering self-help measures for this population. In addition, the measures used in the reviewed studies were not specific measures for ED carers, such measures for other carer experiences in EDs have been developed such as measures of burden (Sepulveda, Whitney et al., 2008). It is possible a measure designed to assess psychological distress in these carers specifically would provide more validity for future investigations of distress in this population.

Fourteen studies used measures of distress whereby subscale scores can be calculated as well as the measures overall distress score, yet only three studies reported more than the overall score and all of these studies used the HADS (Grover, Williams et al., 2011; Quiles et al., 2018; Sepulveda et al., 2019). This additional reporting offers opportunity to understand what specific constructs of distress are impacted by carer interventions. In one study (Quiles et al., 2018) there were reductions in depression and anxiety after carers completed a psychoeducation group but only a reduction in depression following a skills workshop intervention. This may suggest that aspects of the psychoeducation group e.g. the specifics of the information shared, may have impacted on carer anxiety in a way that the workshop intervention did not. Grover, Williams et al. (2011) also reported a significant reduction in carers' HADS-depression subscale score from post-OAO to follow-up when the overall HADS score did not significantly reduce. These findings suggest that the use of broad measures of distress to assess possible changes after completing an intervention can potentially miss the intricacies of the changes to carer distress.

Follow-up assessments ranged from eight-weeks to two-years, offering opportunity to look at the maintenance of changes in psychological distress over time. Unfortunately, several studies did not utilise follow-up procedures (Lang et al., 2015; Sepulveda, Lopez, MacDonald et al., 2008; Sepulveda, Whitney et al., 2008; Uehara et al., 2001). All but one study (Pepin & King, 2013; of which was underpowered) investigating carer workshops found significant reductions in distress for up to two years. Of the self-help intervention studies only three found significant reductions at three-month follow-up (Goddard et al., 2011; Grover Williams et al., 2011; Quadflieg et al., 2017). Taken together, currently there is more evidence that reductions in psychological distress following carer workshops may be able to be maintained longer-term.

Clinical Implications

Overall, the studies reviewed indicate support for providing carer interventions. There were reported reductions in carer distress across a range of interventions, more so in relation to studies investigating carer workshops. Nonetheless, given the methodological issues discussed, it is not clear what interventions may be preferable to others at this time. Since positive findings were found for interventions delivered in a variety of formats this suggests opportunity for carers to access interventions in a range of settings including within their own homes. Services could therefore consider using a variety of these interventions to fit around the resources available to carers.

It is promising that carer interventions have been trialled in different countries and across cultures. Translations of more developed interventions have been made which could be provided to carers where English is not their first language.

It may be helpful for services to consider the range of additional support that can be offered to carers alongside interventions. The studies reviewed utilised different means of support or coaching that did not always require a trained clinician and some had introduced support by experienced and trained carers. It will remain important that services consider the suitability of those who provide support. Hoyle et al.'s (2013) study utilised trainee psychologists to provide support for OAO and did not replicate positive findings observed in a similar RCT (Grover, Naumann et al., 2011). In addition, Quadflieg et al. (2017) did not offer any additional guidance to their participants, but those who sought support outside of the study alongside the intervention were observed to have significantly greater reductions in their distress than participants awaiting the intervention but also seeking additional support outside of the study. Taken together, these results may indicate that effectiveness of interventions may be impacted by the quality of the additional support provided.

The different methods of measuring carer distress could be considered. Services are encouraged to consider the sensitivity of the instruments they use to assess carer needs and be

aware of different aspects of distress that may need attending to. In addition, it may be important to consider that not all aspects of distress are necessary addressed as part of a carer intervention.

Given the evidence for carer interventions is not clear at this time, it is important to consider that carers may be experiencing psychological distress that may not be addressed using carer interventions. Therefore, signposting to services that can assess and address their needs as a member of the general public should be supported and encouraged when appropriate.

Research Implications

Studies looking at the use of interventions for carers of people with EDs are a relatively recent area of research, showing promising reason to continue investigation. Despite there being many RCTs investigating different types of carer interventions, there appears to be a paucity of studies of high-quality design. There is an overall lack of studies that effectively compare interventions to another intervention or control group, as the majority of the studies lacked adequate power to calculate between-group differences. By utilising experimental designs that are rich in control, researchers will be able to report on more valid and generalizable conclusions on the effectiveness of specific interventions for carers. In addition, developments of Hodsoll et al.'s (2017) RCT design that used three conditions (i.e. ECHO with and without coaching and a wait-list control group) will enable investigation into whether carer interventions are more effective than others and account for changes in the carer role that may happen over time as a result of other external variables e.g. reduction or increase of loved ones ED symptom severity.

It is not clear at this stage if different carer interventions may be more suitable to some carers than others. For example, parents may respond to certain interventions differently to friends or partners of people with EDs. Therefore, it may be helpful if future

research compared the effects of interventions on different groups of carers to see if they are impacted differently. This may in turn provide a better understanding of the different needs between carer groups and could contribute to more effective interventions being developed.

This review identified differences in findings within studies when distress was considered more stringently. There is indication that observing changes in depression and anxiety separately in future intervention studies will assist with the development of carer interventions aimed to address these needs. In addition, research focussed on developing a better understanding of aspects of psychological distress in this population may open opportunities to develop novel interventions aimed more specifically at carer distress.

Conclusion

There is a growing body of good quality research evaluating interventions for carers of people with EDs demonstrated by a high number of RCTs across countries. The current evidence indicates that interventions could positively impact on carer distress. While there is more support for workshop interventions, forms of self-help also show promise. However, the findings that can be drawn from the reviewed research is somewhat constrained by the methodological issues identified. Many studies summarised in this review lacked the power required to analyse the impact of interventions on carers. There was also indication that interventions could impact on some constructs of distress and not others and this was only possible to identify when researchers had reported on subscale scores. Therefore, future research should consider improving methodological control and develop a better understanding of carer distress to ensure interventions can target this need.

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Pamela Fox BSc (Hons)

Major Research Project

Section B: Empirical Research

The Relationship Between Compassion and Predictors of Depressed Mood in Parents of
People With Eating Disorders

Word count: 7696 (395)

For submission to the European Eating Disorders Review

SALOMONS

CANTERBURY CHRIST CHURCH UNIVERSITY

Abstract

Objective: 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.

Method: 112 parents of people with eating disorders took part in this study. They completed questionnaires assessing their depressed mood, experiences of entrapment, shame, guilt, self-criticism, self-compassion and submissive compassion. Socio-demographic information was also collected including information about their loved one.

Results: 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.

Conclusions: This study explored processes of depression and the buffering effects of self-compassion on these processes. These findings support an evolutionary understanding of depression and the potential benefits of applying compassion-focused interventions for parents of people with eating disorders. Clinical and theoretical implications are considered.

Keywords: Eating Disorders, Carers, Depression, Mediation, Self-Compassion

Introduction

Carers of People With Eating Disorders

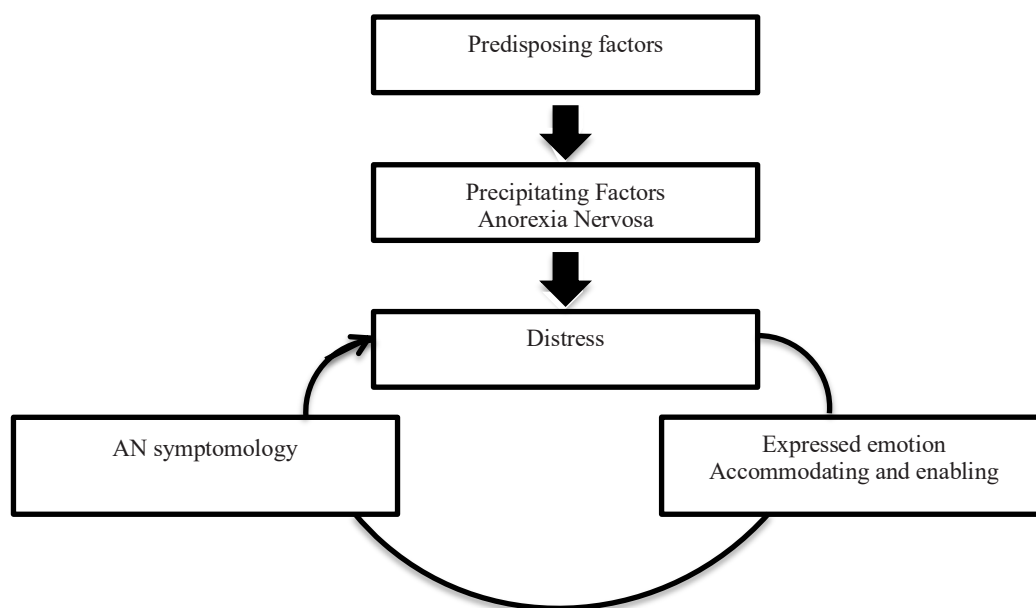
Individuals with an eating disorder (ED) typically present for treatment during adolescence (Micali et al., 2013), a period of time usually associated with transitioning from being under parental care to developing greater individual autonomy. The National Institute for Clinical Excellence (NICE) recommends family-based treatments for children and adolescents with EDs (NICE, 2017) and the majority of people with EDs across age-groups typically receive treatment from outpatient services. The median length of illness has been being recorded as six to seven years (Stoving et al., 2011) meaning the family of people with EDs can be impacted by their loved one's illness over an extended period of time. Carers have a valuable and demanding role in supporting their loved one's recovery, particularly parents (Golan & Crow, 2004). Carers have been recognised for being actively involved in providing care for their loved one no matter what 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 (Treasure et al., 2008).

In ED research, the study of parental distress appears to be only recently evolving (Kyriacou et al., 2008). The need to develop a better understanding of carers' experiences has been identified (Haigh & Treasure, 2003; Magliano et al., 2007) and research has since explored the impact of caregiving on wellbeing in EDs (Anastasiadou et al., 2014; Kyriacou et al., 2008). One study found that around 40% of carers reported experiences in line with having mental health difficulties of their own and 17% were experiencing a high level of psychological distress (Whitney et al., 2007). Moderate levels of depression have been found in this population (Anastasiadou et al., 2014) 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 (Kyriacou et al., 2008). While depression is clinically relevant for carers, a cognitive interpersonal maintenance model developed for AN then later applied to all EDs (Schmidt & Treasure, 2006; Treasure & Schmidt, 2013; see Figure 1) has indicated that carer distress can be implicated in the maintenance of ED symptoms (Schmidt & Treasure 2006; Goddard et al., 2011). This model has led to developments of both treatments for people with EDs (Schmidt et al., 2012) and a focus for carer intervention (Goddard et al., 2011), suggesting the importance of further understanding carers' wellbeing.

Figure 1

The Cognitive Interpersonal Maintenance Model of Anorexia Nervosa



Note. Model showing hypothesised cycles between ED symptoms and carer reactions.

Adapted from "The cognitive-interpersonal maintenance model of anorexia nervosa revisited: a summary of the evidence for cognitive, socio-emotional and interpersonal predisposing and perpetuating factors," by J. Treasure and U. Schmidt, 2013, *Journal of Eating Disorders*, 1(1), p. 19. CC BY 2.0.

Psychological Theories of Depression in Carers

Although the aetiology of depression is complex and likely to be linked to biopsychosocial interactions (Akiskal & McKinney, 1975; Gilbert, 2004), there are several important evolutionary theories that contribute to understanding this state. 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 (Gilbert, 1992). Researchers have studied the functions of regulating mood in this way to make sense of how depressive states can occur. Nesse (2000) proposed depression has an adaptive function by reducing drive in environments where one's efforts do not produce worthwhile results. Seligman's theory of learned helplessness (1974) 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 drive system for acquiring things that are important to us; a threat system to protect the self; and a soothing system that helps us rest when we are not under threat (Gilbert, 2009).

Experience of Entrapment

Early animal studies demonstrated the problems that arise from defeats when an animal is unable to leave their place of conflict vs. when they can escape (MacLean, 1990). Gilbert and Allan (1998) have applied this understanding to human experiences and they have described 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 (Gilbert, 2001), and various studies have found that higher levels of entrapment are associated with carer depression (Pearlin et al., 1990; Willner & Goldstein, 2001; Martin et al., 2006).

Shame and Guilt

Shame and guilt are understood to originate from different mentalities, competitive for shame and caregiving for guilt (Gilbert, 2003). Shame is understood to have evolutionary roots in a self-focussed threat system associated with the need to demonstrate acceptability among others and has been defined as one feeling inadequate and flawed (Gilbert, 1998). 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 (Kim et al, 2011). While shame is considered to be part of the threat system, there is growing evidence that guilt is not (Johnson & O'Brien, 2013). Guilt and shame are often misused as interchangeable terms, but unlike shame, guilt it 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 (Gilbert, 1998; Tangney & Dearing, 2002). A meta-analysis has shown shame to be more strongly related to depression than guilt (Kim et al., 2011).

The experience of feeling shame and guilt in parents of people with EDs has been widely acknowledged (Treasure et al., 2008). Shame and entrapment were found to be associated in a population of carers of people with dementia (Martin et al., 2006) 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 (Tangney & Dearing, 2002).

Self-Criticism

Another construct associated with depression is self-criticism (Blatt, 2004; Gilbert et al., 2004). Self-criticism has been characterised by negative self-judgement in response to the perception of failure (Gilbert et al., 2004). This construct has also been shown to be associated with shame (Gilbert et al., 2004). While cognitive theories describe self-criticism

as a single process (Beck et al., 1979), Gilbert et al. (2004) has 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. 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.

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 (Berking & Whitley, 2014). Self-compassion has been associated with the soothing emotion regulation system (Gilbert, 2009) and is considered a helpful alternative reaction to supposed failure (Gilbert et al., 2004). Self-compassion has been shown to be negatively associated with shame (Barnard & Curry, 2012), moreover, in an empirical study, participants' scores on shame and self-criticism measures reduced after receiving a self-compassion intervention (Gilbert & Procter, 2006). 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 (Durkin et al., 2016); be negatively associated with depression in parents of children with autism (Neff & Faso, 2015); and relate to beneficial emotional coping strategies and protect carers of people with dementia from feeling burdened (Lloyd et al., 2019). It is proposed that self-compassion may prevent or reduce experiences of depressed mood through its ability to reduce the threat systems responses (Johnson & O'Brien, 2013).

Catarino et al. (2014) explored the differences in motives for compassionate caring, contrasting those that are for the wellbeing of others with those due to a desire to develop or

protect personal reputation i.e. to prevent rejection. The latter motive, submissive compassion, was not correlated to genuine compassion and was linked to poorer wellbeing. Submissive compassion in carer populations has not yet been researched; however, shame has been highly correlated to this construct (Catarino et al., 2014).

Rationale, Aims and Hypotheses

The proposed study intended to look at the relationship between the variables described above (entrapment; shame; guilt; self-criticism; self-compassion; submissive compassion) and to investigate whether they predict depressed mood in parents of people with EDs. This study intended to investigate these variables in parents and not carers broadly, this was decided as a means of controlling for potential differences that may be experienced by different carers i.e. partners of people with EDs may experience the caring role differently. The current study does not have the capacity to compare groups of carers sufficiently alongside the investigation proposed, however, this is another important area that should be independently studied.

It is possible that the findings observed in the carer studies described above will be replicated in this different carer sample, including the protective nature of self-compassion. First, the current study aimed to see if 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 (Martin et al., 2006) would be similarly found in parents of people with EDs. Second, self-criticism and submissive compassion have not yet been studied in a carer sample, therefore, this study offers novel investigation into the relationships that these variables have to depression and associated variables in a carer sample. Finally, this study is the first of the author's 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 variables being investigated, there were three specific a priori hypotheses:

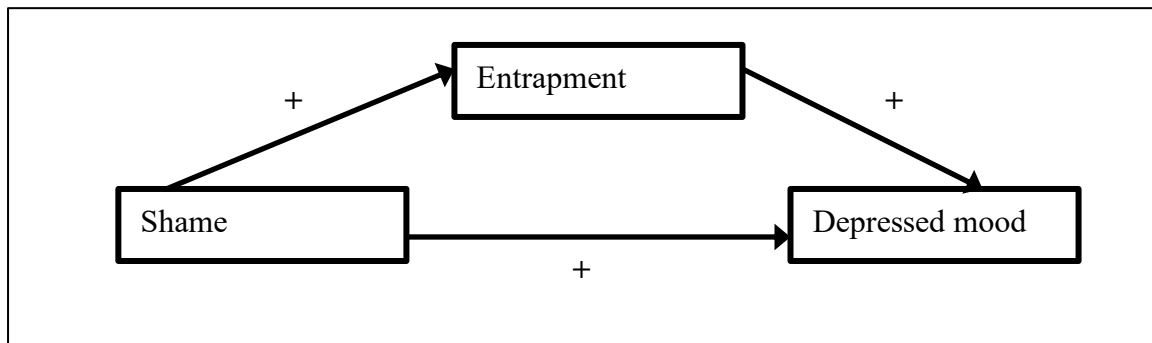
Hypothesis 1. Entrapment was expected to mediate the relationship between shame and depressed mood. Depicted in Figure 2.

Hypothesis 2. Self-criticism was expected to mediate the relationship between shame and depressed mood. Depicted in Figure 3.

Hypothesis 3. Self-compassion was expected to protect against effects of depressed mood through reducing: i) Entrapment; ii) Shame; and iii) Self-criticism. Depicted in Figure 4.

Figure 2

Model of Entrapment as a Mediator Between Shame and Depressed Mood

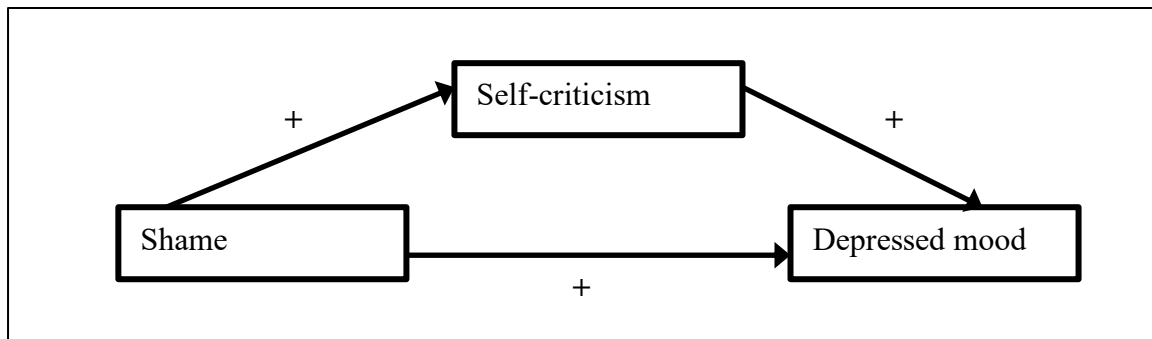


Note. Conceptual model depicts a direct relationship between shame and depressed mood.

The model also shows an indirect effect between shame on depressed mood through entrapment. Plus and minus symbols indicate positive or negative relationship.

Figure 3

Model of Self-Criticism as a Mediator Between Shame and Depressed Mood

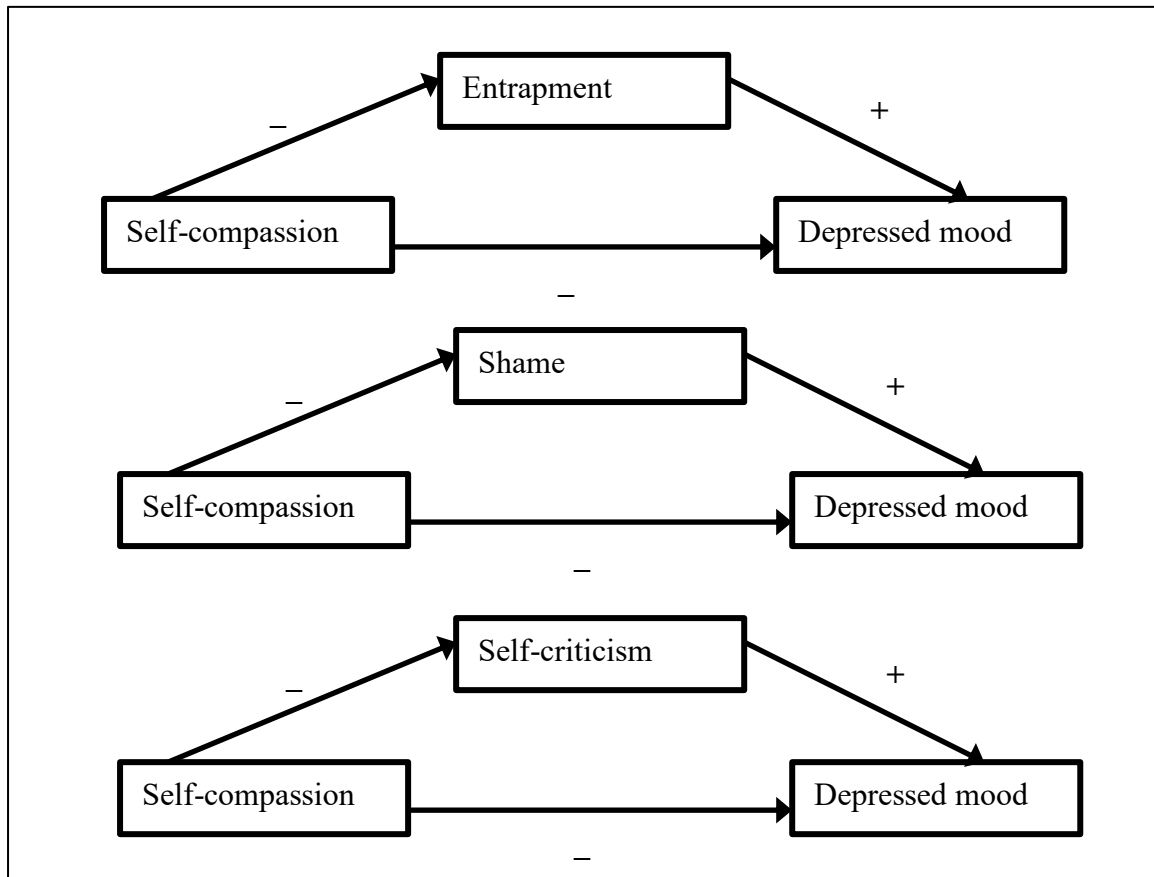


Note. Conceptual model depicts a direct relationship between shame and depressed mood.

The model also shows an indirect effect between shame on depressed mood through self-criticism. Plus and minus symbols indicate positive or negative relationship.

Figure 4

Models of Entrapment, Self-Criticism and Shame as Mediators Between Self-Compassion and Depressed Mood



Note. Conceptual models depict a direct relationship between self-compassion and depressed mood. The models also show three different indirect effects of shame on depressed mood.

Plus and minus symbols indicate positive or negative relationship.

Method

Ethics

The study was approved by The Salomons Ethics Panel, Salomons Centre for Applied Psychology, Canterbury Christ Church University (Ref. No. 075). The committee were aware that the study planned to recruit participants outside of the UK. All participants provided

informed consent. The well-being of participants was ensured by providing information on sources of support that could be accessed globally, this information was provided if participants withdraw from the survey online and was provided at the end of the online and offline surveys (see procedure).

Service-User Involvement

In designing this study several parents of people with EDs and people whom had past experience of being a carer were consulted. The recruitment procedures were informed greatly by these carers.

Design

This study had a cross-sectional design and used self-reported questionnaires to examine depressed mood in parents of people with EDs. 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 the term ‘predictor’ is used to indicate this statistical relationship and not imply causality.

Sampling Strategy

The research was advertised online through social media, online forums and ED associations, including the UK’s leading ED charity (i.e., Beat Eating Disorders). The researcher also contacted ED carer support groups and attended three UK based carer support groups to share information about the research. Other ED carer support group facilitators offered to share information about the research with group attendees and through their mailing lists. 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.

Participants

The data from a total of 112 parents (107 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. The mean age of the participants was 52.29 years (SD = 6.78). Additional demographic information is detailed in the results section and Table 1.

Procedure

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 using the platform Qualtrics. 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 (Appendix A), followed by a consent form (Appendix B), then the research questionnaires. Parents interested in the study were invited to read the information sheet and ask the lead researcher questions before signing the consent form or taking part. In the situation where the researcher attended the support group to advertise the study, the researcher was available to answer questions in person. Parents were informed that they could take away the research pack and decide whether they would like to take part at a later date, prepaid envelopes were provided for participants to return completed questionnaires. The online version required participants to select a consent option before they could access study questionnaires. The offline version required participants to provide their initials to each of the consenting statements and the consent form was separated from the participant's answers to maintain confidentiality.

The survey started with demographic questions (Appendix C) followed by six questionnaires (see measures sections). After completing the survey, participants were presented information about potential sources of support (Appendix D). There were also choices to enter into a prize draw for a £50 Amazon voucher and to receive a copy of the results (Appendix E), participants were required to provide contact details for these options

and it was explained that the information provided in this section were separated from their answers on the questionnaires.

Measures

The eight variables being investigated were measured by six self-report questionnaires which were completed in the following order:

Depressed Mood

The Centre for Epidemiological Studies-Depression Scale (CES-D; Radloff, 1977). This 20-item, self-report measure assesses respondents' current depressive symptoms, items are self-statements (e.g., "I had crying spells"). Respondents rate items on how frequently they applied to them over the past week. Ratings are based on a 4-point Likert scale from 0 (rarely or none of the time \ less than 1 day) to 3 (most or all of the time \ 5-7 seven days). Scores range from 0 to 60 (with higher scores indicating more 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 (Gotlib & Hammen, 1992). Radloff (1977) demonstrated that the measure has concurrent validity by clinical and self-report standards, in addition to evidence of construct validity. Martin et al. (2006) found this scale to have a Cronbach's alpha of 0.92 in a sample of carers of people with dementia.

Experience of Entrapment

The Carer's Entrapment Scale (Martin et al., 2006) was adapted for carers from Gilbert and Allan's (1998) Entrapment Scale developed for depressed populations. This 10-item, self-report measure assesses respondents' experience of flight motivation and entrapment in their caring role. Items include 'I am in a situation I feel trapped in'. Respondents rate the degree to which each item represents their view of themselves. Ratings are based on a 5-point Likert scale from 0 (not like me at all) to 4 (extremely like me). 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 (Gilbert & Allan, 1998; Gilbert et al., 2002; Willner & Goldstein, 2001). Cronbach's alphas in excess of .85 have been reported in student and clinical populations (Gilbert & Allan, 1998; Gilbert et al., 2002). Martin et al. (2006) did not specify the Cronbach's alpha in their sample of carers of people with dementia. It was therefore important in the current study to measure and report on the internal consistency of this measure with this sample (Cronbach's alphas for all measures reported in results section).

Submissive Compassion

The Submissive Compassion Scale (Catarino et al., 2014). This 10-item, self-report measure assesses respondents' extent to help and care for others in order to be liked and avoid rejection. Items include 'I worry that if I am not caring enough, people will reject me'. Respondents rate the degree to which each item represents their view of themselves. Ratings are based on a 5-point Likert scale from 0 (not at all like me) to 4 (extremely like me). Scores range from 0 to 40 (with higher scores indicating higher levels of submissive compassion).

The scale has been shown to have good internal consistency (Cronbach's alphas above .85) in samples of students (Catarino, et al., 2014; Gilbert et al., 2017).

Shame and Guilt

The Caring Shame and Guilt Scale (Martin et al., 2006). This 12-item, self-report measure assesses respondents' shame (six-items) and guilt (six-items) in relation to their caring role. Shame items include items relating to self-criticism, criticism from others and meeting the expectations of other people (e.g. "I worry that others will criticise me if I am not caring enough"). Guilt items include items relating to fears of having harmed others and sense of responsibility (e.g. "I feel it is my responsibility to care for my relative"). Respondents rate the degree to which each item represents their view of themselves. Ratings

are based on a 5-point scale from 0 (not at all like me) to 4 (extremely like me). Scores on each scale range from 0 to 24 (with higher scores indicating higher levels of shame or guilt).

Martin et al. (2006) report designing the scale with face validity. They also reported Cronbach's alphas above .85 in a sample of carers of people with dementia.

Self-Compassion

The Self-Compassion Scale from the Compassionate Engagement and Action Scales (CEAS; Gilbert et al., 2017). This 13-item, self-report measure assesses compassion towards the self (e.g. "I notice, and am sensitive to my distressed feelings when they arise in me"). The scale is split across two sections. Section one consists of items that have been formulated to reflect compassionate engagement made up the six attributes in the compassion-focused therapy model: empathy, distress tolerance, care for wellbeing, non-judgement, sensitivity to suffering, sympathy (Gilbert, 2009). There are also two (reversed) filler items in this section. Section two of each scale has four items that reflect compassionate actions to manage distress and one (reversed) filler item. Respondents rate each item according to how frequently it applies to them. Ratings are based on a scale from 1 (never) to 10 (always). The total score on the scale is calculated by summing the item ratings (not including filler items). 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. (2017) analysed the factor structures of these scales in student samples from three different countries and in two languages (English and Portuguese). 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 (Gilbert et al., 2017).

Self-Criticism

The Forms of Self-Criticising/Attacking and Self-Reassuring Scale (FSCRS; Gilbert et al., 2004). This 22-item, self-report measure assesses respondent's self-criticising and self-reassuring reactions to perceived failures. Only scores from the two self-criticising subscales were used for this particular study. The inadequate self-criticism subscale focuses on a sense of personal inadequacy (e.g. "There is a part of me that puts me down") and the hated self-criticism subscale measures the sense of self-persecution (e.g. "I call myself names"). Respondents rate how they believe they usually think and react when things do not go right for them. Ratings are based on a 5-point Likert scale from 0 (not like me at all) to 4 (extremely like me). 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. (2004) has shown Cronbach's alphas above .85 for both forms of self-criticism in a sample of students. Studies have replicated this reliability and demonstrated good construct validity and temporal stability in the general population and clinical settings (Baião et al., 2014; Castilho et al., 2015; Kupeli et al., 2013).

Data Analysis

Descriptive and Correlation Analyses

The Statistics Package for the Social Sciences (SPSS, Version 24) was used to perform descriptive and correlation analyses. The descriptive statistics were used to explore the demographics of the sample, their scores on the study variables and to test the internal reliability (Cronbach's alpha) on the measure scores to check for bias. Pearson correlation analyses were conducted to explore relationships between depressed mood, entrapment, guilt, shame, self-criticism, self-compassion and submissive compassion.

Mediation

Hayes' (2018) bootstrapping approach to mediation analysis was adopted, utilizing the PROCESS macro for SPSS. This method produces a confidence interval for indirect pathways. Several simple mediation models (as described in Figure 5) were performed in preference to a single multiple mediation model as to the author's knowledge these variables have not been explored together in this way before. Entering several variables into a model with little theoretical understanding could risk making unsound conclusions. When multiple mediation models could be used (for hypotheses 2 & 3iii) they had the advantage of being able to test the relative influence of each of the mediating variables.

To test hypothesis 1, the caring shame score was the predictor and the depression score was the response, with the entrapment score entered as a mediator. To test hypothesis 2, the caring shame score was the predictor and the depression score was the response, 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 the depression score as the response. Two of the analyses (for hypotheses 3i & 3ii) were simple mediation analyses with entrapment and shame as the mediators. The third (for hypothesis 3iii) was a parallel mediation analysis with inadequate self-criticism and hated self-criticism entered in parallel.

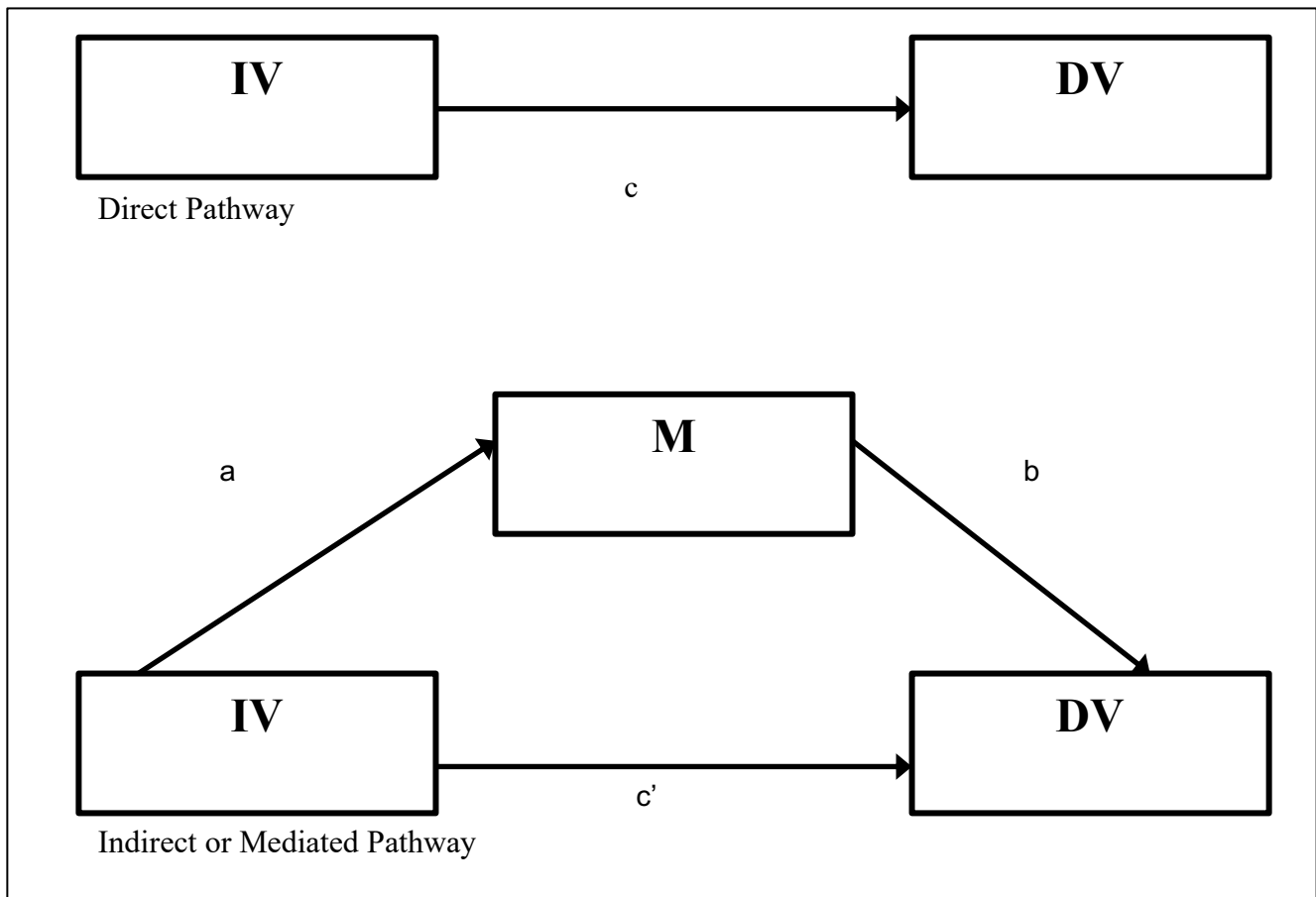
Bootstrapping is a multiple resampling technique. This approach is conducted by sampling data from the studied sample repetitively and resulting in additional samples to provide a sampling distribution. In mediation analyses, using a bootstrapping approach, indirect effects are estimated from confidence intervals that are computed to allow for a range of mediation to be stated instead of reliance on testing for significance. Bootstrapping was chosen for this study as it has been shown to be more robust in the face of deviations from the normal distribution and frequently more powerful than alternative approaches (MacKinnon, et al., 2007). As bootstrapping is not reliant on assumptions regarding sample distribution there is no requirement for tests for homogeneity of variance, multicollinearity, outliers and

deviations from normal distribution (Hayes, 2018). Participants were asked to complete the questionnaires alone as a means of avoiding violation of the assumption of independence.

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 (2018, p. 519) suggests preference for this metric in comparison to standardised regression coefficients.

Power Calculations and Sample Size

An a priori calculation to estimate the number of participants needed to detect correlations between the variables was computed with the G*Power programme (Faul et al., 2007). Set within limits recommended by Cohen (1988; $\alpha = .05$; $\beta = .80$), a sample of 84 was required to detect a medium effect size ($r = .30$). The mediation analysis did not depend on a priori power calculation due to the bootstrapping method utilised (Hayes, 2018).

Figure 5*Simple Mediation Model*

Note. Adapted from Hayes (2018). A total effect (path c) occurs when there is a relationship between an independent variable (IV) and a dependent variable (DV) without controlling for any potential mediator variable (M). Simple mediation is understood to have occurred when there is a total indirect effect (path ab) of the IV on the DV through a mediator (M). This process requires the combination of ‘path a ’ and ‘path b ’ to reach significance. Full mediation is said to have occurred when the total effect (path c) is reduced by the total indirect effect to a non-significant direct effect (path c' ; the relationship between the IV and DV after controlling for potential M). Partial mediation is said to have occurred when the total effect (path c) is reduced by the total indirect effect but the direct effect (path c') remains statistically significant.

Results

Demographics

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	Albanian	7	6.25
	American	2	1.79
	Australian	8	7.14
	British	85	75.90
	Canadian	3	2.68
	Dutch	1	0.89
	French	1	0.89
	German	1	0.89
	Irish	2	1.79
	New Zealander	1	0.89
	Spanish	1	0.89
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)		52.29 (6.78)	38-72
Time caring (months) n = 109		49.37 (43.80)	2-192
Age of individual with ED (years)		19.94 (5.51)	11-40

Descriptive Statistics

Means, standard deviations (SD) and Cronbach's alphas for all variables are displayed in Table 2. All Cronbach's alphas were above the minimum acceptable value (0.70; Bland & Altman, 1997), they were in fact above .80 and therefore indicate high internal consistency across the measures.

The CES-D was the only measure to have a stated clinical cut off (≥ 16 ; Radloff, 1977), the overall mean of the participants in this study were 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 (Castilho et al., 2014; Gilbert et al., 2004; Longe et al., 2010). The mean scores from the Caring Shame and Guilt Scale and the Entrapment Scale were not too dissimilar from scores found in a student population (Catarino et al., 2014) and carers of people with dementia (Martin et al., 2006). Similarly, the mean score for self-compassion as measured by the CEAS was not noticeably different to scores observed in the general population (Gilbert et al., 2017). The Submissive Compassion Scale does not have any defined cut-offs, however, the mean score found in this study was lower than observed in student population studies (Catarino et al., 2014; Gilbert et al., 2017).

Correlation Analysis

Pearson's correlation analyses were conducted to explore relationships between all the variables. Table 2 shows two-tailed Pearson's correlation coefficients between all variables. The bivariate correlations with depression were all significant except for the scores of submissive compassion and guilt. Significant relationships were observed between self-criticism and all the variables measured. A strong positive correlation was observed between submissive compassion and shame. Self-compassion was found to have significant negative relationships with all of the variables measured, with the exception of submissive compassion.

Mediation Analyses

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 Table 3 and Figure 6, higher shame scores predicted higher scores on entrapment ($a = .49, p < .001$), and carers who had higher scores of experienced entrapment had higher levels of depressed mood ($b = .22, p < .05$). A bootstrap confidence interval for the indirect effect ($ab = .11$) based on 5,000 bootstrap samples was entirely above zero (.02 to .21). There was no evidence that shame affected change in depressed mood independent of its effect on entrapment ($c' = .21, p = .12$) and subsequently entrapment was understood to fully mediate the relationship between shame and depressed mood in this model.

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 Table 4 and Figure 7, higher shame scores predicted higher scores on the mediator variables; inadequate self-criticism ($a_1 = .75, p < .001$), and hated self-criticism ($a_2 = .27, p < .001$). Higher scores on hated self-criticism predicted higher levels of depressed mood ($b_2 = .61, p < .05$), but higher scores on inadequate self-criticism did not significantly predict depressed mood ($p = .16$). A bootstrap confidence interval for the total indirect effect ($a_1b_1 + a_2b_2 = .30$) based on 5,000 bootstrap samples was entirely above zero (.15 to .47). There was no evidence that shame affected change in depressed mood independent of its effect on self-criticism ($c' = .01, p = .93$) 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.

As can be seen in Table 4, 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.

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 Table 5 and Figure 8, higher self-compassion scores predicted significant reductions in entrapment scores ($a = -.14, p < .05$) and entrapment scores predicted higher depressed mood scores ($b = .23, p < .05$). The bootstrapped confidence interval for the indirect effect ($ab = -.03$) was entirely below zero ($-.07, -.00$). The significant total effect of self-compassion on depressed mood ($c = -.15, p < .05$) remained significant when entrapment was added into the model as the mediator ($c' = -.12, p = .04$) and subsequently entrapment was understood to partially mediate the relationship between self-compassion and depressed mood in this model.

There was also a significant direct effect of self-compassion on depressed mood independent of shame scores ($c' = -.12, p = .04$). Table 6 shows that the effect of self-compassion on change in depressed mood scores was not mediated by shame ($ab = -.03, BCI [-.08, .00]$).

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 (as described in Figure 9) was used by entering shame into the model as a mediator followed by entrapment. Results are shown in Table 7 and Figure 10. 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 ($a_1d_2b_2 = -0.01$, BCI [-.03, -.00]). There was no evidence that self-compassion influenced depressed mood independent of its effect on shame and entrapment ($c' = -.10$, $p = .08$) 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.

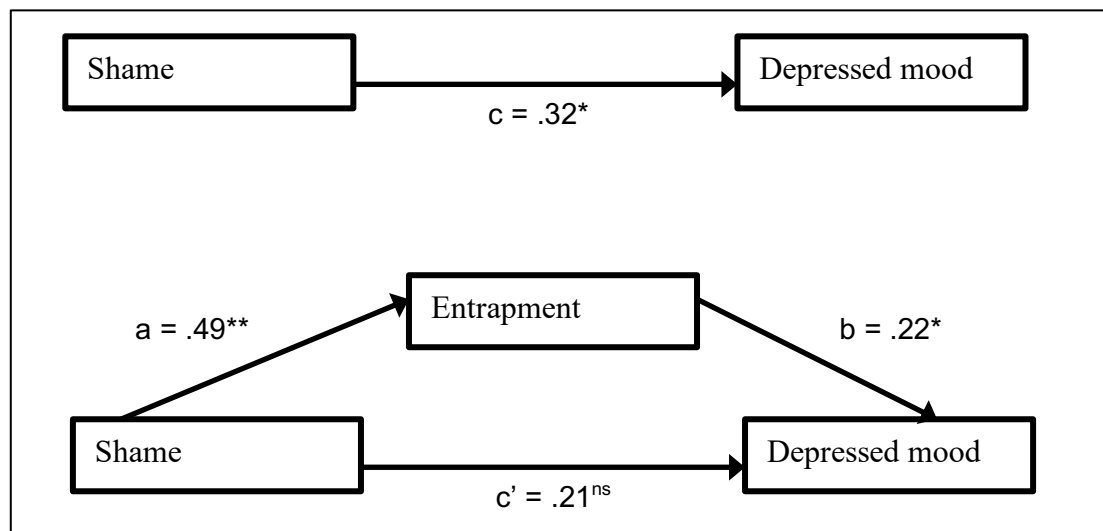
iii) The Indirect Effect of Self-Compassion on Depressed Mood Mediated by Changes in Variations of Self-Criticism. From a parallel mediation analysis, carer self-compassion indirectly influenced experienced depressed mood via its effect on self-criticism. As can be seen in Table 8 and Figure 7, higher self-compassion scores predicted lower scores on the mediator variables; inadequate self-criticism ($a_1 = -.26$, $p < .001$), and hated self-criticism ($a_2 = -.13$, $p < .001$). Higher scores on hated self-criticism predicted higher levels of depressed mood ($b_2 = .58$, $p < 0.05$), but higher scores on inadequate self-criticism did not significantly predict depressed mood ($p = .15$). A bootstrap confidence interval for the total indirect effect ($a_1b_1 + a_2b_2 = -.12$) based on 5,000 bootstrap samples was entirely below zero (-.19 to -.06). There was no evidence that self-compassion influenced depressed mood independent of its effect on self-criticism ($c' = -.03$, $p = .60$) 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.

As can be seen in Table 8, 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.

Figure 6

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, * $p < .05$; ** $p < .001$.

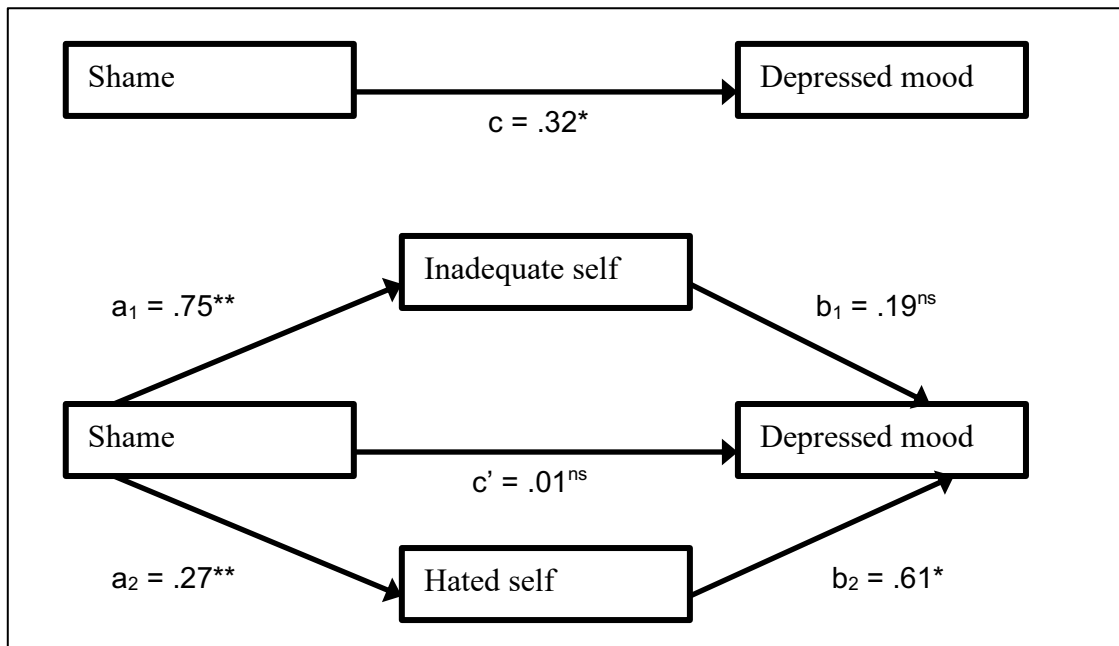
Table 2*Descriptive Statistics and Pearson's Correlations of Study Variables*

	(a)	(b)	(c)	(d)	(e)	(f)	(g)	
	Depression ¹	Entrapment ²	Sub.Comp. ³	Shame ⁴	Guilt ⁴	Self-compassion ⁵	Criticism - inadequete ⁶	Criticism – hatedself ⁶
(a) Entrapment ²	.29**							
(b) Sub.Comp. ³	.11	.25**						
(c) Shame ⁴	.23*	.35**	.74**					
(d) Guilt ⁴	.16	.20*	.56**	.64**				
(e) Self-compassion ⁵	-.25**	-.22*	-.15	-.28**	-.22*			
(f) Criticism - inadequete ⁶	.42**	.52**	.38**	.54**	.38**	-.41**		
(g) Criticism – hatedself ⁶	.45**	.51**	.32**	.40**	.22*	-.41**	.73**	
Means (SD)	26.46 (8.90)	21.68 (9.37)	16.40 (9.56)	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	0.91	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 Submissive Compassion Scale; ⁴ Caring Shame and Guilt Scale; ⁵ The Compassionate Engagement and Action Scales; ⁶ The Forms of Self-Criticising/Attacking & Self-Reassuring Scale. *p < .05; **p < .001

Figure 7

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, $*p < .05$; $**p < .001$.

Table 3

Results From a Mediation Analysis Testing Hypothesis 1. The Effect of Shame on Depressed Mood Mediated by the Increase of Feelings of Entrapment

Antecedent		Consequent						
		M (Entrapment)			Y (Depression)			
		Coeff.	SE	<i>p</i>	Coeff.	SE	<i>p</i>	
X (Shame)	<i>a</i>	.492	.127	< .001	<i>c'</i>	.209	.132	.116
M (Entrapment)					<i>b</i>	.216	.093	.022
Constant	<i>i_M</i>	15.573	1.780	< .001	<i>i_Y</i>	19.184	2.262	< .001
R ² = 0.121				R ² = 0.098				
F(1, 110) = 15.066, <i>p</i> < .001				F(2, 109) = 5.937, <i>p</i> = .004				
				Unstandardized effects	SE	LBCI	UBCI	
Total effect of shame on depression				.315 <i>c</i>	.126	.065	.565	
Total indirect effect of shame on depression				.106 <i>ab</i>	.047	.024	.205	

Note. X: Predictor variable. M: Mediator variable. Y: Dependent variable. LBCI, UBCI: Lower and upper bootstrapped 95% confidence interval.

Table 4

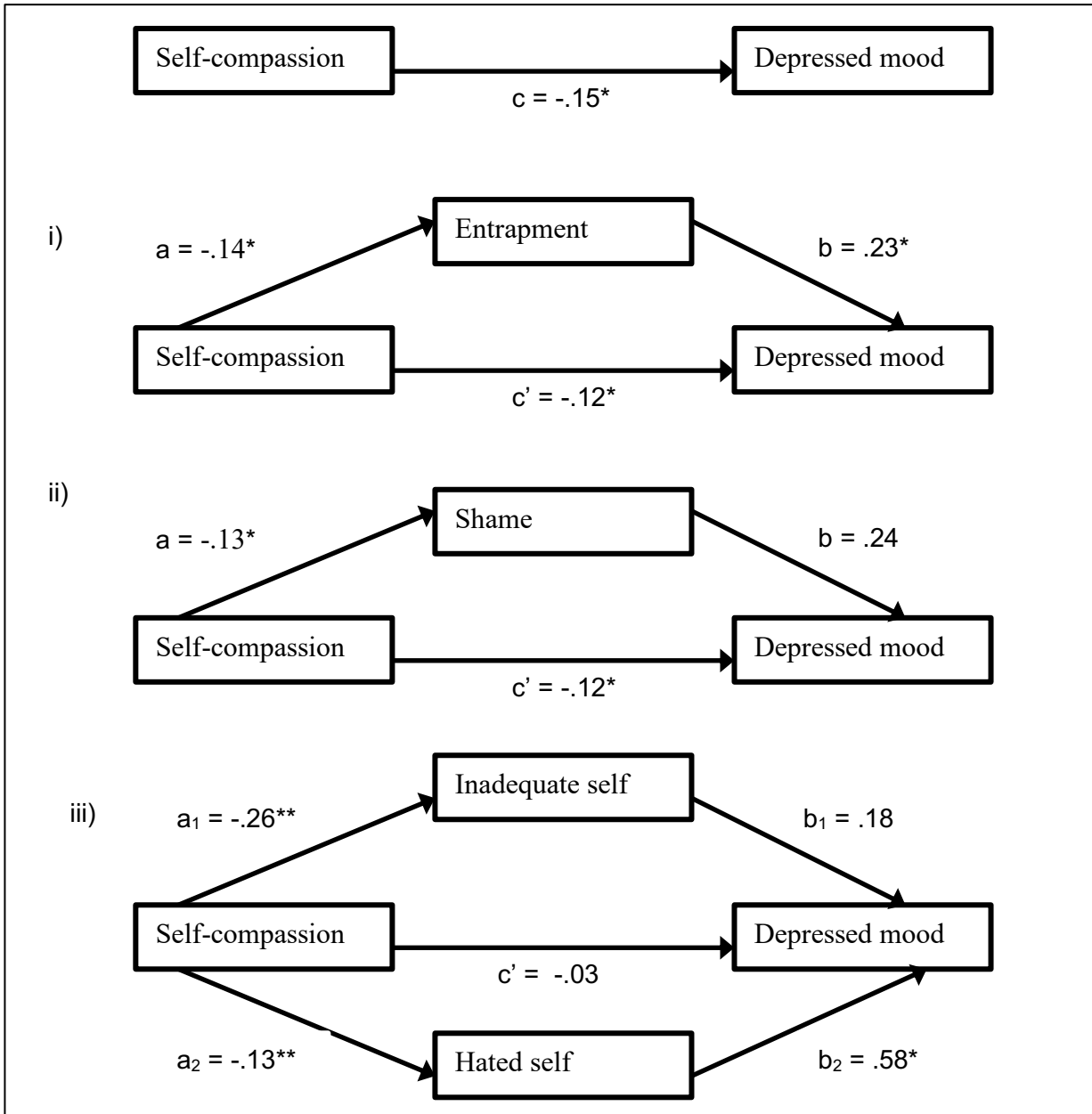
Results From a Parallel Mediation Analysis Testing Hypothesis 2. The Effect of Shame on Depressed Mood Mediated by the Increase of Self-Criticism

Antecedent		Consequent										
		M ₁ (Inadequate)			M ₂ (Hated)			Y (Depression)				
		Coeff.	SE	<i>p</i>		Coeff.	SE	<i>p</i>		Coeff.	SE	<i>p</i>
X (Shame)	<i>a</i> ₁	.747	.112	< .001	<i>a</i> ₂	.270	.060	< .001	<i>c</i> '	.013	.137	.927
M ₁ (Inadequate)		–	–	–		–	–	–	<i>b</i> ₁	.186	.132	.160
M ₂ (Hated)		–	–	–		–	–	–	<i>b</i> ₂	.605	.246	.016
Constant	<i>i</i> _{M1}	9.634	1.576	< .001	<i>i</i> _{m2}	1.358	.842	.110	<i>i</i> _Y	19.929	1.949	< .001
		R ² = 0.288				R ² = .1562				R ² = 0.218		
		<i>F</i> (1, 110) = 44.410, <i>p</i> < .001				<i>F</i> (1, 110) = 20.361, <i>p</i> < .001				<i>F</i> (3, 108) = 10.011, <i>p</i> < .001		
						Unstandardized effects			SE	LBCI	UBCI	
Total effect of shame on depression						.315 <i>c</i>			.126	.065	.565	
Indirect effect of shame on depression						.302 <i>a</i> ₁ <i>b</i> ₁ + <i>a</i> ₂ <i>b</i> ₂			.079	.154	.466	
Indirect effect shame via M ₁ on depression						.139 <i>a</i> ₁ <i>b</i> ₁			.098	-.055	.334	
Indirect effect of shame via M ₂ on depression						.163 <i>a</i> ₂ <i>b</i> ₂			.075	.031	.323	

Note. X: Predictor variable. M₁: Mediator variable one. M₂: Mediator variable two. Y: Dependent variable. LBCI, UBCI: Lower and upper bootstrapped 95% confidence interval.

Figure 8

Mediation Models for the Indirect Effects of Self-Compassion on Reducing Depressed Mood in the Form of Statistical Diagrams



Note. ^{ns} not significant, $*p < .05$; $**p < .001$.

Table 5

Results From a Mediation Analysis Testing Hypothesis 3i. The Effect of Self-Compassion on Depressed Mood Mediated by the Decrease of Entrapment

Antecedent		Consequent							
		M (Entrapment)			Y (Depression)				
		Coeff.	SE	<i>p</i>	Coeff.	SE	<i>p</i>		
X (Self-comp)	<i>a</i>	-.144	.060	.018	<i>c'</i>	-.118	.057	.041	
M (Entrapment)					<i>b</i>	.226	.089	.012	
Constant	<i>i_M</i>	29.977	3.553	≤ .001	<i>i_Y</i>	28.386	4.248	≤ .001	
R ² = 0.050				R ² = 0.112					
F(1, 110) = 5.800, <i>p</i> = .018				F(2, 109) = 6.902, <i>p</i> ≤ .001					
						Unstandardized effects	SE	LBCI	UBCI
Total effect of self-compassion on depression						-.151 <i>c</i>	.057	-.264	-.038
Total indirect effect of self-compassion on depression						-.033 <i>ab</i>	.018	-.072	-.003

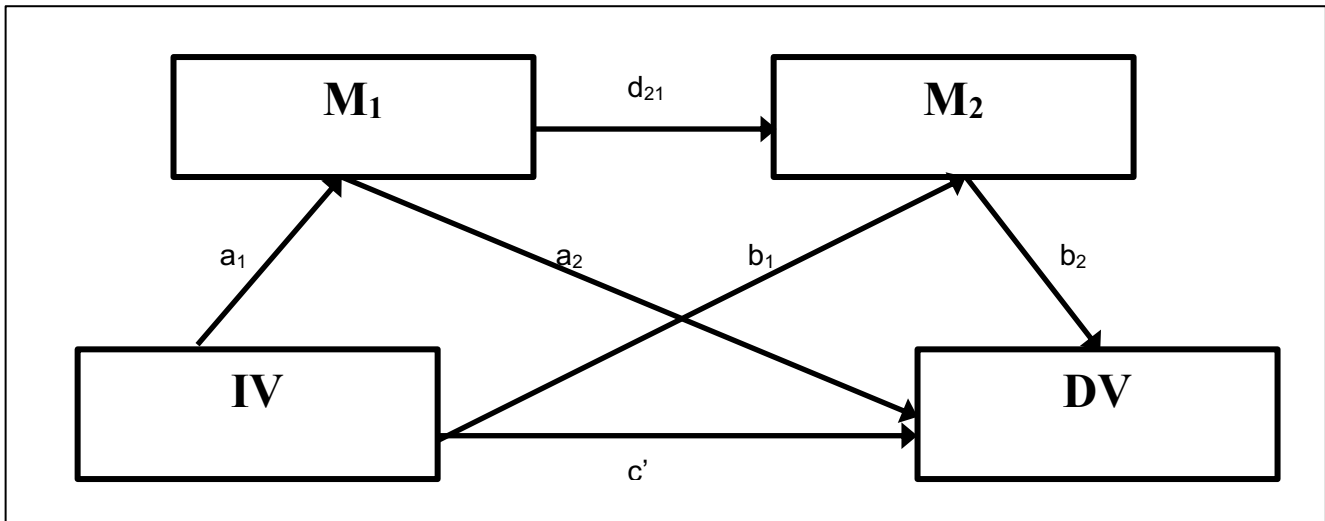
Note. X: Predictor variable. M: Mediator variable. Y: Dependent variable. LBCI, UBCI: Lower and upper bootstrapped 95% confidence interval.

Table 6

Results From a Mediation Analysis Testing Hypothesis 3ii. The Effect of Self-Compassion on Depressed Mood Mediated by the Decrease of Shame

Antecedent		Consequent						
		M (Shame)			Y (Depression)			
		Coeff.	SE	<i>p</i>	Coeff.	SE	<i>p</i>	
X (Self-comp)	<i>a</i>	-.128	.042	.003	<i>c'</i>	-.1201	.059	.043
M (Shame)					<i>b</i>	.241	.130	.066
Constant	<i>i_M</i>	19.778	2.470	≤ .001	<i>i_Y</i>	30.394	4.219	≤ .001
R ² = 0.079				R ² = 0.089				
F(1, 110) = 9.438, <i>p</i> = .003				F(2, 109) = 5.302, <i>p</i> = .006				
					Unstandardized effects	SE	LBCI	UBCI
Total effect of self-compassion on depression					-.151 <i>c</i>	.057	-.264	-.038
Total indirect effect of self-compassion on depression					-.031 <i>ab</i>	.022	-.082	.005

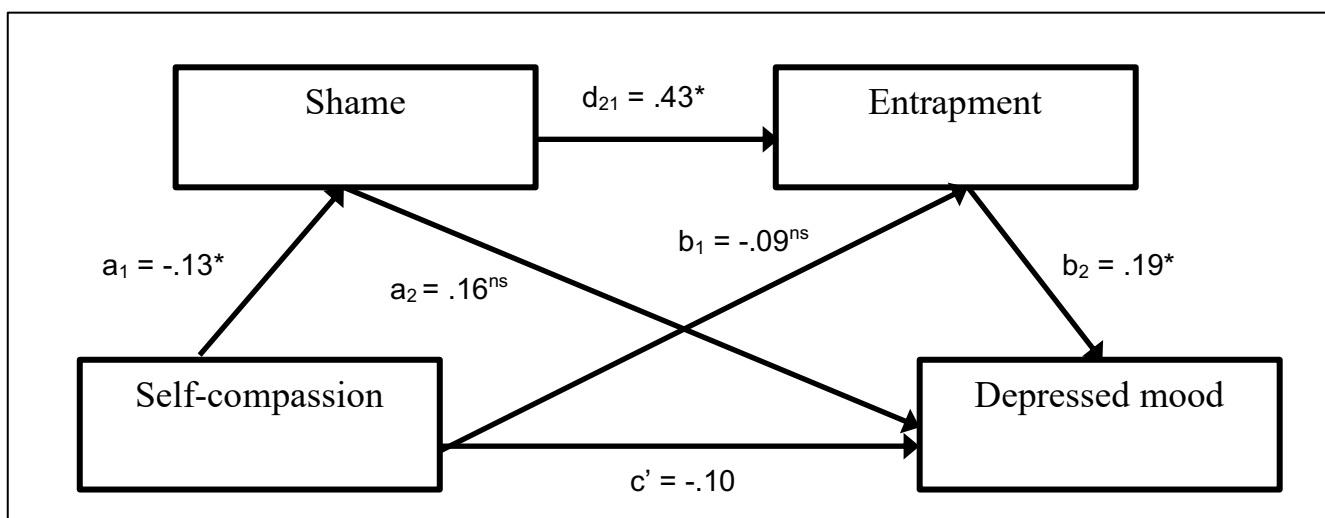
Note. X: Predictor variable. M: Mediator variable. Y: Dependent variable. LBCI, UBCI: Lower and upper bootstrapped 95% confidence interval.

Figure 9*Sequential Mediation Model*

Note. Adapted from Hayes (2018). This sequential mediation model assesses specific indirect effects of the independent variable (IV) through the first mediator (a_1b_1) and the second mediator (a_2b_2). It also assesses sequential mediation through the merged indirect effect through the first and second mediators of which a relationship is present ($a_1d_{21}b_2$).

Figure 10

The Indirect Effect of Self-Compassion on the Reduction of Depressed Mood Sequentially Mediated by Reduction in Shame and Entrapment



Note. ^{ns} not significant, $*p < .05$; $**p < .001$.

Table 7

Results From Post-hoc Sequential Mediation Analysis. The Indirect Effect of Self-Compassion on Reduction of Depressed Mood, Sequentially Mediated Through Shame Then Entrapment

Antecedent	Consequent											
	M ₁ (Shame)			M ₂ (Entrapment)			Y (Depression)					
	Coeff.	SE	p	Coeff.	SE	p	Coeff.	SE	p			
X (Self-comp)	<i>a</i> ₁	-.128	.041	.003	<i>a</i> ₂	-.088	.060	.142	<i>c</i> '	-.103	.059	.081
M ₁ (Shame)	–	–	–	<i>d</i> ₂₁	.437	.131	.001	<i>b</i> ₁	.156	.134	.245	
M ₂ (Entrapment)	–	–	–					<i>b</i> ₂	.193	.093	.041	
Constant	19.778	2.470	< .001	21.332	4.279	< .001	26.283	4.607	< .001			
	R ² = .079			R ² = .139			R ² = 0.124					
	<i>F</i> (1, 110) = 9.438, <i>p</i> = .003			<i>F</i> (1, 109) = 8.707, <i>p</i> < .001			<i>F</i> (3, 108) = 5.071, <i>p</i> = .003					
							Unstandardized effects	SE	LBCI	UBCI		
Total effect of self-compassion on depression							-.151 <i>c</i>	.057	-.264	-.038		
Indirect effect of self-compassion on depression via M ₁							-.020 <i>a</i> ₁ <i>b</i> ₁	.021	-.066	.016		
Indirect effect self-compassion on depression via M ₂							-.017 <i>a</i> ₂ <i>b</i> ₂	.015	-.051	.007		
Indirect effect of self-compassion on depression via M ₁ and M ₂							-.011 <i>a</i> ₁ <i>d</i> ₂₁ <i>b</i> ₂	.006	-.026	-.001		

Note. X: Predictor variable. M₁: Mediator variable one. M₂: Mediator variable two. Y: Dependent variable. LBCI, UBCI: Lower and upper bootstrapped 95% confidence interval.

Table 8

Results From a Parallel Mediation Analysis Testing Hypothesis 3iii. The Effect of Self-Compassion on Depressed Mood, Mediated by the Decrease of Shame

Antecedent	Consequent											
	M ₁ (Inadequate)			M ₂ (Hated)			Y (Depression)					
	Coeff.	SE	<i>p</i>	Coeff.	SE	<i>p</i>	Coeff.	SE	<i>p</i>			
X (Self-comp)	<i>a</i> ₁	-0.261	.055	< .001	<i>a</i> ₂	-0.127	.027	< .001	<i>c</i> '	-0.030	.058	.605
M ₁ (Inadequate)	–	–	–	–	–	–	–	–	<i>b</i> ₁	.179	.123	.148
M ₂ (Hated)	–	–	–	–	–	–	–	–	<i>b</i> ₂	.583	.250	.022
Constant	<i>i</i> _{M1}	33.940	3.266	< .001	<i>i</i> _{m2}	12.020	1.607	< .001	<i>i</i> _Y	22.072	4.394	< .001
			R ² = .170				R ² = .167				R ² = .220	
			<i>F</i> (1, 110) = 22.516, <i>p</i> < .001				<i>F</i> (1, 110) = 21.990, <i>p</i> < .001				<i>F</i> (3, 108) = 10.122, <i>p</i> < .001	
							Unstandardized effects	SE	LBCI	UBCI		
Total effect of self-compassion on depression							-.151 <i>c</i>	.057	-.264	-.038		
Indirect effect of self-compassion on depression							-.120 <i>a</i> ₁ <i>b</i> ₁ + <i>a</i> ₂ <i>b</i> ₂	.031	-.188	-.064		
Indirect effect self-compassion via M ₁ on depression							-.047 <i>a</i> ₁ <i>b</i> ₁	.033	-.120	.015		
Indirect effect of self-compassion via M ₂ on depression							-.074 <i>a</i> ₂ <i>b</i> ₂	.033	-.145	-.013		

Note. X: Predictor variable. M₁: Mediator variable one. M₂: Mediator variable two. Y: Dependent variable. LBCI, UBCI: Lower and upper bootstrapped 95% confidence interval.

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, followed by consideration of the limitations of this study. The clinical and theoretical implications that can be drawn from this study and suggestions for future research are referred to throughout.

Main Findings from Descriptive Statistics and Correlations

In this sample of parents of people with EDs the mean depressed mood score was above the measures cut-off indicating risk of significant depressive symptomology. This finding supports previous research reporting on the high level of psychological need in carers of people with EDs (Anastasiadou et al., 2014) and highlights the ongoing importance of developing the understanding of carer distress to inform interventions that will effectively address these needs.

This is the first study that the author is aware of to measure submissive compassion in a sample outside a student population. Interestingly parents in this study did not score as high on this measure as reported in student groups (Catarino et al., 2014; Gilbert et al., 2017) and it is possible a floor effect impacted on subsequent findings (Lewis-Beck et al., 2004). The lower scores obtained on this measure may explain the lack of relationship observed between depressed mood and submissive compassion. However, this study did replicate previous findings that submissive compassion is positively related to caring shame and guilt (Catarino et al., 2014) and self-criticism (Gilbert et al., 2017). This supports the understanding that

caring from motivations to be liked is related to factors that have been shown to predict depression (Catarino et al., 2014; Gilbert et al., 2017). While it is unclear why parents in this study scored lower than younger student populations it is possible to conclude that to some extent submissive compassion did not resonate with parents of people with EDs. Moreover, this suggests unsurprisingly that parents are not caring for their loved ones in order to be liked or to avoid rejection, but experience distress in this type of relationship through other factors. This further supports the need to develop models of depression that are specific to parents, given that their experiences of depression may be driven by processes different to those seen in other populations.

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 (Treasure et al., 2008), 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 (Gilbert, 2003). 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 (Gilbert, 2003; Gilbert, 2002; Tangney & Dearing, 2002). This developing understanding indicates that it may be helpful for interventions aimed at reducing depressed mood to attribute more of a focus on alleviating the experience of shame, specifically in this population by focussing on reducing feelings of shame related to caring for someone with an ED.

Main Findings from Mediation Analyses

Hypothesis 1.

This study aimed to investigate the indirect relationship between shame and depressed mood through the experience of entrapment. First, 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 (Cheung et al., 2004; Kim et al., 2011) including in this study, however, the finding that entrapment fully mediated this relationship (i.e. shame no longer significantly predicted depressed mood independent of its effect on entrapment) suggests that this process is likely to be through experiences of wanting (but being unable) to escape the carer role. Therefore, the results of this study supported and developed upon previous findings of these constructs in carers of people with dementia (Martin et al., 2006). These findings highlight the importance of understanding and targeting entrapment to relieve depressed mood in parents of people with EDs.

Hypothesis 2.

The study also aimed to investigate the relationship between shame and depressed mood mediated by self-criticism. 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 (i.e. shame no longer significantly predicted depressed mood independent of its effect on self-criticism) 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 (Rector et al., 2000), these findings indicate that targeting constructs that make up 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.

Hypothesis 3.

The negative relationship between self-compassion and depression is well documented (Macbeth & Gumley, 2012) including in carer samples (Neff & Faso, 2014), however, this is the first study of the author's knowledge to investigate the processes by which self-compassion may protect parents of people with EDs from experiencing depressed mood.

Hypotheses 3i and 3ii. The study aimed to investigate the indirect effect of self-compassion on depressed mood mediated by changes in caring experience. The finding that self-compassion significantly predicted reductions in entrapment and shame scores in these separate models suggests a possible ameliorating effect self-compassion can have 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 the 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 the theoretical understanding around the negating effect of self-compassion on the threat system (Johnston & O'Brien, 2013), which is likely to be made up of responses such as shame contributing to feelings of entrapment (Tangney & Dearing, 2002). 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 (Gilbert & Proctor, 2005; Judge et al., 2012) and may offer similar effects for parents of people with EDs.

Hypothesis 3iii. 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 Proctor's (2005) results of a compassion focussed therapy intervention that significantly reduced hated self-criticism only. Therefore, it is possible that self-compassion may reduce the effects of depressed mood via the process of reducing hated self-criticism. Overall these findings highlight an important area for future research to better understand these different modalities of self-criticism and explain why there may be a stronger buffering impact from self-compassion on hated self-criticism.

Limitations

The design of this study has several limitations that will be considered in turn. First, 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.

Nonetheless, future research could benefit from longitudinal studies to reliably confirm the direction of causation of the variables observed in this study. In addition, greater empirical control would allow for causal links to be drawn, for example, by the manipulating self-compassion as part of an intervention study and including a control group to compare the results of parents of people with EDs with comparison groups.

It is recognised that using questionnaires in this study can be considered a limited method of capturing the vastly complicated constructs they set out to characterise and measure. The author encourages that the data is looked at as suggestive and that of which to be developed on. Future research may benefit from encompassing a variety of methods to investigate these constructs, for example through measuring physiological responses and collecting qualitative feedback.

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 different 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 is not unusual in ED research (Treasure & Nazar, 2016; Whitney et al., 2007) and future research should consider improvements that will ensure a better representation of all types of carers of people with EDs.

Another possible limitation of the study is that online and offline versions of the study were available. While control was taken to ensure the same material was provided in either

version there were differences that could not be controlled for. For example, if participants completed the questionnaires offline at home, they may have been able to complete the questionnaires over a longer period of time. It is not clear if these differences could have impacted on participant responses.

The researcher also sought to control the variation in the study by ordering the questions and questionnaires identically to all participants. However, it is recognised that as a result of this method of control it is possible that the study may have been at risk of ordering effects (e.g. effects of boredom) and randomising the questionnaires may have controlled for this.

Summary of Implications

Clinical Implications

NICE guidance (2017) 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. In addition, in most NHS trusts there is a split of services between children (under 18s) and adults which result in many services not being commissioned to work with parents. This study supports the need for all services and clinicians working with people with EDs to be encouraged to consider that parents may be experiencing depressed mood and could need their own support. Expanded funding for all age ED services is likely to be able to support this need and support parents whom play an important role in caring for their loved ones.

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 (Rector et al., 2000).

Self-compassion was implicated in neutralising variables in models of 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 (Gilbert & Proctor, 2005; Judge et al., 2012).

Research Implications

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 will develop the understanding of depressed mood in parents of people with EDs which are likely to have different experiences to other researched samples. 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. 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.

The study's findings provide support for the role of self-compassion in alleviating depressed mood in parents of people with EDs, though, there appears to be a gap in understanding the stronger impact self-compassion was indicated to have on hated self-criticism. There will be benefits from focussing future research to better understanding self-compassion and the impact it may have on protecting parents of people with EDs from experiencing or developing depressed mood. Experimental studies will be better positioned to test whether self-compassion can causally reduce the predictors of depression proposed and support the models investigated.

While the author of this study discussed the recruitment strategy with current and former carers, there may have been further opportunities to seek consultation from underrepresented groups. There is a need for future researchers in the ED field to consider approaches to improving sample diversity in order for the research to be representative of all carers and their range of caregiving experiences.

Conclusion

This study has built upon the existing understanding around depressed mood in parents of people with EDs. More specifically the relationship between variables from an evolutionary understanding of depression that may contribute to this experience in parents of people with EDs and how self-compassion may protect against it. Shame was shown to be a predictor of entrapment and these data 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 alleviating effect on self-criticism. In comparison, self-criticism of a hateful nature was also shown to be a mediator between the shame and depressed mood relationship. These findings 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-focussed therapies may have something to offer.

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Section C
Appendix of supporting material

Appendices

- A. Participant information sheet
- B. Participant consent form
- C. Demographic questions
- D. Information about sources of support
- E. Future Contact form
- F. Study Advertisement
- G. Ethical approval
- H. Study summary for ethics panel
- I. Journal submission guidelines

Appendix A
Participant information sheet

PIS Version 3.0
01/2019

Information about the research

Relationship between compassion and predictors of depression in parents of people with an eating disorder

Hello. My name is Pam and I am a trainee clinical psychologist at Canterbury Christ Church University. I would like to invite you to take part in a research study. Before you decide whether to take part, it is important that you understand why the research is being done and what it would involve for you.

Talk to others about the study if you wish.

(Part 1 tells you the purpose of this study and what will happen to you if you take part. Part 2 gives you more detailed information about the conduct of the study).

What is the purpose of the study?

This research will be exploring your (a parent and carer of a loved one with an eating disorder) wellbeing and seeing if there are certain experiences you might have as a carer that may contribute to depressed mood. This will help develop a greater understanding of the needs of carers and help develop interventions focussed on supporting your wellbeing.

Why have I been invited?

You have been approached for this study because I am interested in understanding your experience and needs as a parent and carer of someone with an eating disorder.

Do I have to take part?

It is up to you to decide whether to join the study. If you agree to take part, I will then ask you to sign or provide electronic consent depending on how you would prefer to complete the study, on paper or online. You are free to withdraw at any time, without giving a reason.

What will happen to me if I take part?

If you agree to take part you will be asked to sign the consent form attached to this information sheet or follow the link below to be forwarded to this information online followed by a consent form. This is to acknowledge that you have read these guidelines and understood the purpose of the study.

https://cccusocialsciences.az1.qualtrics.com/jfe/form/SV_6sPaIN4b2uJOZtX

There will be six questionnaires that will take you about 30-35 minutes in total to complete. You will also be asked to provide some general information about yourself. I am interested in your views so therefore it is important that you complete the research pack on your own.

At no point on any questionnaire will you be asked to provide your name or any identifiable information. The written and online consent forms will be separated from the completed questionnaires. Your responses will therefore remain anonymous.

Once you have completed all the questionnaires please place them in the envelope provided and seal it. If you are completing this at the carers support group please return them to me. If you are completing them at home, please return the completed research

pack in the stamped addressed envelope provided. Alternatively please use the online questionnaires as advised.

What are the possible disadvantages and risks of taking part?

It is not anticipated that any physical or psychological harm will occur from participation in this study. However, providing care can be a stressful activity and some of the questions may make you more aware of these difficulties.

What are the possible benefits of taking part?

Your views will help develop the understanding of carers' experiences and needs. The information you provide will contribute to my research thesis. The findings will hopefully be published in an academic journal. You will be asked at the end of the study to provide your email address if you would like to receive a summary of the findings.

As a thank you, you will also have the option to enter into a prize draw to win one of two £50 Amazon vouchers for completing the research pack.

What if there is a problem?

Any complaint about the way you have been dealt with during the study or any possible harm you might suffer will be addressed. The detailed information on this is given in Part 2.

Will information from or about me from taking part in the study be kept confidential?

Yes.

Answers you provide to the questions will be kept separate from your consent and contact information if you have provided this (i.e. to receive a summary of results and/or prize draw). Therefore, your answers will remain anonymous.

We will follow ethical and legal practice and all information about you will be handled in confidence.

This completes part 1.

If the information in Part 1 has interested you and you are considering participation, please read the additional information in Part 2 before making any decision.

Part 2 of the information sheet

What will happen if I don't want to carry on with the study?

If you withdraw from the study, we would like to use the data collected up to your withdrawal.

Complaints

If you have a concern about any aspect of this study, you should ask to speak to me and I will do my best to address your concerns. You can contact me by leaving a message on the 24-hour voicemail phone number 01227 927070. Please leave a contact number and say that the message is for me [Pam Fox] and I will get back to you as soon as possible. If you remain unhappy and wish to complain formally, you can do this by contacting Dr. Fergal Jones, Research Director, Salomons Institute for Applied Psychology, Canterbury Christ Church University at fergal.jones@canterbury.ac.uk.

Will information from or about me from taking part in the study be kept confidential?

All information which is collected from or about you during the course of the research will be kept strictly confidential.

All data will be stored at the University for 10 years (in locked storage if completed offline and on a password protected computer if completed online).

What will happen to the results of the research study?

It is my intention to prepare these findings to be published within an academic journal. However, prior to this, if you have provided your email address with the intention of receiving a summary of results then these will be sent to you. If you have taken part in this study at your local support group I will send a summary results there. The results of the study will also be made available on the study website:

https://cccusocialsciences.az1.qualtrics.com/jfe/form/SV_6sPaIN4b2uJOZtX

Who is organising and funding the research?

This study is being funded by Canterbury Christ Church University as part of my training towards becoming a clinical psychologist.

Who has reviewed the study?

All research in the NHS is looked at by an independent group of people, called a Research Ethics Committee, to protect your interests. This study has been reviewed and given favourable opinion by The Salomons Ethics Panel, Salomons Centre for Applied Psychology, Canterbury Christ Church University.

Further information and contact details

If you would like to speak to me and find out more about the study or have questions about it answered, you can leave a message for me on a 24-hour voicemail phone line at 01227 927070. Please say that the message is for me [Pam] and leave a contact number so that I can get back to you. Alternatively, you can email me; my email address is p.p.fox406@canterbury.ac.uk.

Appendix B
Participant consent form

CF Version: 3.0
Study Number: 1.0
01/2019

CONSENT FORM

Title of Project: Relationship between compassion and predictors of depression in
parents of people with an eating disorder

Name of Researcher: Pamela Fox, Trainee Clinical Psychologist

Please initial box

1. I confirm that I have read and understand the information sheet dated 01/2019 (version 3.0) for the above study. I have had the opportunity to consider the information, ask questions and have had these answered satisfactorily.	
2. I understand that my participation is voluntary and that I am free to withdraw at any time without giving any reason.	
3. I understand that data collected during the study may be looked at by the lead supervisors (Dr Kate Foxwell & Dr Chris Irons). I give permission for these individuals to have access to my data.	
4. I agree for my anonymised data* to be used in further research studies	
* Anonymised data are details that do not have anything that would identify you, and so protecting your privacy	
5. I agree to take part in the above study.	

Name of Participant _____

Date _____

Signature _____

Name of Person taking consent _____

Date _____

Signature _____

Appendix C
Demographic Questions

Thank you for taking the time to participate in this study.
In the first part of this questionnaire there are questions about your demographics. The following pages comprise of a series of six questionnaires.

1. Please select your gender (Please circle)

Male Female Not listed or prefer not to say

2. How old are you?

3. What would best describe your relationship status? (Please circle)

Married Partnered Single
Divorced Separated Widowed

4. What is your nationality?

5. What is your ethnicity?

6. How old is your loved one?

7. What relationship is your loved one to you?

Son Daughter Not listed or prefer not to say

8. What diagnosis does your loved one have?

Anorexia Nervosa Bulimia Nervosa
Binge Eating Disorder Other specified feeding or eating disorder (OSFED)

9. How long have you cared for your loved one while they have had an eating disorder? (Please give your answer in years and months)

Appendix D
Information about sources of support

DS Version 2.0
01/2019

DEBRIEF SHEET

Title of Project: Relationship between compassion and predictors of depression in parents of people with an eating disorder

Thank you for taking part in the study exploring your wellbeing and seeing if there are certain experiences you might have as a carer that may contribute to depressed mood. This will help develop a greater understanding of the needs of carers and help develop interventions focussed on supporting your wellbeing.

Providing care can be a stressful activity and some of the questions may make you more aware of these difficulties. If you are worried about your health you are strongly advised to speak to a health professional. Please see below for the contact details of support services should you wish to talk to someone or access further support.

Samaritans

Confidential support for people experiencing feelings of distress or despair.

Phone: 116 123 (free 24-hour helpline)

Website: www.samaritans.org.uk

SANE

Emotional support, information and guidance for people affected by mental illness, their families and carers.

Phone: 0300 304 7000 (daily, 4.30 to 10.30pm)

Peer support forum: www.sane.org.uk/supportforum

Website: www.sane.org.uk/support

YoungMinds

Information on child and adolescent mental health. Services for parents and professionals.

Phone: Parents' helpline 0808 802 5544 (Mon to Fri, 9.30am to 4pm)

Website: www.youngminds.org.uk

Beat

Phone: 0808 801 0677

Website: <https://www.beateatingdisorders.org.uk/>

Befrienders Worldwide

Befrienders Worldwide is a network of international centres across 39 countries set up to help people who need support emotionally.

Website: www.befrienders.org

What will happen to my answers?

All information which is collected from or about you during the course of the research will be kept strictly confidential. All data will be stored at the University for 10 years (in locked storage if completed offline and on a password protected computer if completed online).

Complaints

If you have a concern about any aspect of this study, you should ask to speak to me and I will do my best to address your concerns. You can contact me by leaving a message on the 24-hour voicemail phone number 01227 927070. Please leave a contact number and say that the message is for me [Pam Fox] and I will get back to you as soon as possible. If you remain unhappy and wish to complain formally, you can do this by contacting *Dr. Fergal Jones, Research Director, Salomons Institute for Applied Psychology, Canterbury Christ Church University at* fergal.jones@canterbury.ac.uk.

Further information and contact details

If you would like to speak to me and find out more about the study or have questions about it answered, you can leave a message for me on a 24-hour voicemail phone line at 01227 927070. Please say that the message is for me [Pam] and leave a contact number so that I can get back to you. Alternatively, you can email me; my email address is p.p.fox406@canterbury.ac.uk.

If you would like to receive a summary of the findings and/or enter into a ballot to receive one of two £50 amazon vouchers please use the sheet overleaf to provide your email address.

Appendix E
Future Contact Form

Relationship between compassion and predictors of depression in parents of people with an eating disorder

If you would like to receive a summary of the findings and/or enter into a ballot to receive one of two £50 amazon vouchers please enter your email address clearly below and circle your responses to the statements below.

This page will be separated from your responses in the questionnaire to maintain your confidentiality.

Email address:

I would like to receive a summary of the results YES/NO

I would like to be entered into the prize draw YES/NO

Appendix F
Study Advertisement



Relationship between compassion and predictors of depression in parents of people with an eating disorder

Name of researcher: Pamela Fox, Trainee Clinical Psychologist

Email: Pamela Fox at p.p.fox406@canterbury.ac.uk

What is the purpose of this research?

The purpose of this research is to explore the wellbeing of parents of a loved one with an eating disorder and see if there are certain experiences you might have as a carer that may contribute to depressed mood. This will help develop a greater understanding of the needs of carers and help develop interventions focused on supporting carer wellbeing.

Who can take part?

You can take part in this study if you are a parent of someone with an eating disorder. You also must also be over 18 years of age and have a good understanding of written English.

What does the study involve?

The study will involve completing six questionnaires on an online platform. This will take approximately 30-35 minutes. The questionnaires will ask you about different aspects of your mood and thoughts about yourself. You will also be asked to provide some general information about yourself.

As a thank you, you will be given the opportunity to enter into a prize draw to win one of two £50 amazon vouchers.

How can you take part?

To read further information about the study please follow the link (https://cccsocialsciences.az1.qualtrics.com/jfe/form/SV_6sPalN4b2uJOZtX). This link will also guide you to the study page if you wish to take part. If you have any questions about the study, please contact Pamela Fox at p.p.fox406@canterbury.ac.uk.

Appendix G
Ethical Approval

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Appendix H
Study summary sent to Salomons Ethics Committee

The Relationship Between Compassion and Predictors of Depressed Mood in Parents of People with Eating Disorders

Background

Parents of people with eating disorders (ED) have a number of unmet needs, including high levels of psychological distress. The proposed study intended to look at the relationship between variables previously associated with depression and to investigate whether they predict depressed mood in parents of people with EDs. The study also investigated the protective nature that self-compassion may have on preventing or alleviating depressed mood in parents of people with eating disorders.

Method

We developed a research pack (available offline and online) that consisted of six previously validated scales measuring depressed mood, entrapment, guilt, shame, self-compassion, self-criticism and submissive compassion. Participants were recruited through advertisements shared on online ED carer forums, through ED charities and by contacting carer support groups. 112 parents completed the survey. Correlation and multiple mediation analyses were carried out using a bootstrapping approach.

Results

In one model the relationship between shame and depressed mood was mediated self-criticism. In another model the relationship between shame and depressed mood was mediated by the experience of entrapment, this adds to the evidence that shame may contribute to depression via its impact on these mediators. Self-compassion and depressed mood had a negative relationship of which was found to be fully mediated by a combination of shame and entrapment. Similarly, in another model self-criticism mediated this relationship.

Conclusions

Parents high on shame measures appear vulnerable to depressed mood through the mechanisms of self-criticism of a hateful nature and entrapment. Increasing self-compassion may help alleviate or reduce the likelihood of developing depressed mood for shame-prone parents experiencing entrapment in their caring role and parents experiencing high levels of self-criticism of a hateful nature.

Appendix I
European Eating Disorders Review submission guidelines

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Appendix J
Study summary to be sent to participants

The Relationship Between Compassion and Predictors of Depressed Mood in Parents of People with Eating Disorders

Background

Parents of people with eating disorders (ED) have a number of unmet needs, including high levels of psychological distress. This study aimed to look at particular thoughts and feelings that may or may not be experienced by parents of people with EDs and see whether these were predictors of depressed mood. The study also aimed to look at the protective nature that self-compassion may have on preventing or alleviating depressed mood in parents of people with EDs.

Method

We developed a research pack (available offline and online) that consisted of six previously validated questionnaires. These questionnaires measured depressed mood, entrapment (i.e. feeling trapped in caring role and unable to escape), guilt, shame, self-compassion, self-criticism and submissive compassion. Parents were recruited through advertisements shared on online ED carer forums, through ED charities, including BEAT and by contacting carer support groups. 112 parents completed the survey. Analyses (correlation and multiple mediation) were carried out to look into the relationships between these caring experiences and if they predicted depressed mood.

Result and Conclusions

Parents scoring high on shame measures appear vulnerable to depressed mood through the process of experiencing higher self-criticism and feelings of being trapped in their caring role. Increasing self-compassion may help alleviate or reduce the likelihood of developing depressed mood for shame-prone parents feeling trapped in their caring role and parents experiencing high levels of self-criticism.