DOCTOR OF CLINICAL PSYCHOLOGY (DCLINPSY)

Doctorate in Clinical Psychology: Main Research Portfolio

Panting, Holly

Award date:
2018

Awarding institution:
University of Bath

Research Portfolio Submitted in Part Fulfilment of the requirements for the Degree of Doctorate in Clinical Psychology

---

Holly Panting

Doctorate in Clinical Psychology

University of Bath

Department of Psychology

August 2018

Word counts

Main Research Project…….7019

Service Improvement Project……..4940

Critical Review of the Literature…….7504

Executive Summary……..778

Connecting Narrative……..3179

Abstracts

Holly Panting
HP442@bath.ac.uk
Clinical Psychologist in Training

August 2018

Abstracts

Main Research Project

Examining the links between eating disorders and irritable bowel syndrome

Abstract

Objectives: Research indicates that people with eating disorders (ED) are more likely to have irritable bowel syndrome (IBS) than the general population. However, the links between ED and IBS are not well understood. Cognitions are likely to be important in understanding these links, but studies have not yet examined specific cognitions which may make people with ED more vulnerable to developing IBS. This study aimed to examine the links between ED and IBS, to develop understanding in this area. The role of specific beliefs, and related behaviours, which we hypothesised might link ED and IBS were examined. Additionally, perfectionism was examined as it was hypothesised to possibly be associated in the links between ED and IBS.

Methods: A cross-sectional, between-group questionnaire design compared four groups of women, who have: (i) ED, (ii) IBS, (iii) both ED and IBS (ED/IBS), and (iv) neither condition (healthy controls). Questionnaires assessed ED psychopathology, IBS symptoms, specific IBS-related beliefs and behaviours, and perfectionism.

Results: 77% of women with ED met diagnostic criteria for IBS, and the ED group had significantly more IBS symptoms than healthy women. The ED/IBS group had significantly more IBS-related cognitions and behaviours than women with ED (no IBS) and healthy women, but not significantly different to women with IBS. There were no clear group differences for perfectionism.

Conclusions: This study found a high prevalence of IBS in women with ED, in line with previous studies findings. Perfectionism doesn't appear to be associated with the links between ED and IBS. We conclude that the links between ED and IBS may, in part, lie in cognitions, and subsequent behaviours, and this requires replication and further research.

Service Improvement Project

Reflective practice is key to promoting psychologically informed care. Are there ways in which reflective practice could be better integrated into Recovery Team working?

Abstract

Reflective practice is emphasised as important for healthcare professionals. However, research on the structure, content, utility and outcomes of reflective practice groups is limited. Existing research focuses primarily on inpatient staff experiences. This study aimed to examine the barriers and enablers to reflective practice groups for staff working in a specific Secondary Community Mental Health Recovery Team, with a view to making reflective practice sessions more accessible and useful. This mixed-methods study consisted of a focus group (n=6) and survey (n=19). Data were analysed using thematic analysis, and descriptive statistics. Following this, recommendations were made to the reflective practice facilitators to guide and improve delivery of reflective practice sessions. Staff felt reflective practice sessions were useful; however, the majority do not attend. Staff articulated some of the specific barriers to attending reflective practice sessions, including practical (e.g. time and frequency of sessions), cultural (e.g. prioritising reflective practice when busy), and emotional (e.g. anxiety about presenting cases). The practical barriers have been relatively accessible to change. However, cultural and emotional barriers are less accessible and may take longer to change. This is the first study to examine staff experiences of reflective practice in a community mental health setting. Results indicate that staff find reflective practice useful, which highlights the importance of supporting reflective practice in this setting. The findings of this study had a significant impact on the commitment to and engagement with reflective practice in this specific Team. However, further research on a wider scale is needed to examine the replicability of the findings.

Critical Review of the literature

A systematic review examining whether compassion focused therapy interventions are associated with changes in the theoretical components of the model: the threat, soothing and drive systems

Abstract

There is increasing evidence that Compassion Focused Therapy (CFT) is an effective intervention, with studies so far reporting positive clinical outcomes across a range of conditions. However, it is not yet clear whether CFT interventions are associated with the changes predicted by the CFT model; the balancing of the three emotion regulation systems (threat, drive and soothing). This systematic review aimed to assess the associations between CFT interventions and changes in these specific components of the model. A systematic search of electronic databases (PubMed, APA PsychNET, Web of Science, and Embase) was conducted and identified 14062 papers. Following screening against inclusion and exclusion criteria, 16 studies were included, including four RCTs. Quality assessment was conducted using the Cochrane Risk of Bias tool (for RCTs) and the Newcastle Ottawa scale (for non-RCTs), and showed that the studies were generally of poor quality. In general, CFT interventions were associated with increases in self-compassion, and concomitant decreases in shame, self-criticism, and anxiety and depression. However, outcomes reported for the soothing, threat, and drive system responses were limited. Understanding the association between CFT interventions and these systems is hampered by a lack of controlled studies, and the variability of the outcome measures reported. Future research is required to develop and validate outcome measures for components in each of the emotion regulation systems posited by the model. Further controlled trials of CFT interventions should report outcome measures related to all aspects of the CFT model.

Contents page

List of Tables

MAIN RESEARCH PROJECT:

SERVICE IMPROVEMENT PROJECT:

CRITICAL REVIEW OF THE LITERATURE:

List of figures

MAIN RESEARCH PROJECT:

SERVICE IMPROVEMENT PROJECT:

CRITICAL REVIEW OF THE LITERATURE:

Acknowledgements

I would like to acknowledge and express gratitude to all the people who have supported, inspired, and believed in me - I wouldn't be where I am today without that. I would particularly like to thank the Clinical Psychology course team at the University of Bath for all their support, guidance, and encouragement. Thanks to my Clinical Tutor, Cara Davis, who's constant and kind support has helped me to get through training, and to remember not to lose track of what is important.

Research

I would like to thank the course staff who have supervised my research: main research project supervisors Paul Salkovskis and Emma Griffith; service improvement project supervisor Megan Wilkinson-Tough; and literature review supervisor Liz Marks. I have really appreciated all of their time, guidance and encouragement. I would also like to thank the NHS field supervisors for giving their time and support to my research projects: main research project supervisor Sam Clark-Stone; and service improvement project supervisors Hilary Priestman, and Laura Hill.

Placement

I am grateful to my placement supervisors for their hard work in creating such fantastic placement experiences, and for their support, advice and encouragement: Andrew Iles (working age adult placement), Liz Curtis (older adult placement), Charlotte Swift (learning disabilities placement), Shaun Brassington (children and adolescent mental health placement), Nicky Dobbin and Emma Rodgers (clinical health placement), and Hilary Priestman (specialist CAT placement).

Personal

Finally, I would like to thank my family and friends for their support and belief in me throughout my journey, and particularly during Clinical Training. Special thanks to my cohort for their continuous support and advice, and for helping me to keep perspective. Ash, no words can express my gratitude for your unwavering support, love, patience and understanding (and proof reading!) – thank you for everything.

Main Research Project

Examining the links between eating disorders and irritable bowel syndrome

Holly Panting
HP442@bath.ac.uk
Clinical Psychologist in Training

Course Supervisors: Professor Paul Salkovkis and Dr Emma Griffith
Field Supervisor: Sam Clark-Stone

August 2018

Word count: 7019

Target journal: British Journal of Clinical Psychology

Examining the links between eating disorders and irritable bowel syndrome

Abstract

Objectives: Research indicates that people with eating disorders (ED) are more likely to have irritable bowel syndrome (IBS) than the general population. However, the links between ED and IBS are not well understood. Cognitions are likely to be important in understanding these links, but studies have not yet examined specific cognitions which may make people with ED more vulnerable to developing IBS. This study aimed to examine the links between ED and IBS, to develop understanding in this area. The role of specific beliefs, and related behaviours, which we hypothesised might link ED and IBS were examined. Additionally, perfectionism was examined as it was hypothesised to possibly be associated in the links between ED and IBS.

Methods: A cross-sectional, between-group questionnaire design compared four groups of women, who have: (i) ED, (ii) IBS, (iii) both ED and IBS (ED/IBS), and (iv) neither condition (healthy controls). Questionnaires assessed ED psychopathology, IBS symptoms, specific IBS-related beliefs and behaviours, and perfectionism.

Results: 77% of women with ED met diagnostic criteria for IBS, and the ED group had significantly more IBS symptoms than healthy women. The ED/IBS group had significantly more IBS-related cognitions and behaviours than women with ED (no IBS) and healthy women, but not significantly different to women with IBS. There were no clear group differences for perfectionism.

Conclusions: This study found a high prevalence of IBS in women with ED, in line with previous studies findings. Perfectionism doesn't appear to be associated with the links between ED and IBS. We conclude that the links between ED and IBS may, in part, lie in cognitions, and subsequent behaviours, and this requires replication and further research.

Keywords: Eating disorders, irritable bowel syndrome, IBS, functional gastrointestinal disorder, cognitions, CBT, perfectionism

Examining the links between eating disorders and irritable bowel syndrome

Eating disorders (ED) are estimated to affect over 1.25 million people in the UK (Beat, 2017). ED have both physical and psychological complications and, as a consequence, the physical, social and psychological costs to the individual are high (Mathers, Vos, Stevenson, & Begg, 2001).ED have been conceptualised using a transdiagnostic model, which identifies processes and maintaining factors which are common across all subtypes of ED (anorexia, AN; bulimia, BN; binge eating disorder, BED; and eating disorder not otherwise specified, EDNOS; Fairburn, 2008). The Cognitive Behavioural transdiagnostic model of ED states that dysfunctional self-evaluation is common across all ED, whereby there is an overevaluation of the importance of control over eating (dietary restraint), weight or shape which subsequently affections cognition and behaviour (Fairburn, Cooper, & Shafran, 2003). In addition, four additional mechanisms are proposed to maintain ED for some patients; perfectionism, low self-esteem, interpersonal problems, and mood intolerance (Fairburn et al., 2003)

The transdiagnostic model of ED has led to development of a Cognitive Behavioural treatment (CBT) protocol for all ED subtypes (CBT-E), which has been evidenced to be an efficacious treatment for all ED subtypes (Fairburn et al., 2003). A recent study used structural equation modelling to test the transdiagnostic model across different ED subtypes (AN, BN, EDNOS) and found that though the overevaluation of weight, shape and dietary restraint was significant in all subtypes, there were differences between them (Lampard, Tasca, Balfour, & Bissada, 2013). For example, the association between overevaluation of weight and shape and dietary restraint was significantly higher in people with BN than people with AN or EDNOS. As such, though the transdiagnostic model is widely used in ED research and practice, it may be that some ED processes and maintaining factors are more prominent in some ED subtypes than others.

People with ED have a higher prevalence of functional gastro-intestinal disorders (FGID), with estimates of 83% (Wang, Luscombe, Boyd, Kellow, & Abraham, 2014), and 98% (Boyd, Abraham, & Kellow, 2005), which compares to general population estimates of 20% in Western populations (Drossman, Li, Andruzzi, Temple, Talley, Thompson, Whitehead, Janssens, Funch-Jensen, & Corazziari, 1993).

Conversely, 84% of patients with FGID have no ED co-morbidity (Porcelli, Leandro, & De Carne, 1998).

Irritable bowel syndrome (IBS) is the most common FGID (Camilleri & Choi, 1997). IBS is defined by current diagnostic criteria (Rome IV) as recurrent abdominal pain related to defecation or in association with a change in stool frequency or form, and includes bloating as a common accompanying symptom (Lacy, Mearin, Chang, Chey, Lembo, Simren, & Spiller, 2016). Symptoms must be chronic, occurring at least once per week on average, and have a duration of at least six months. The aetiology of IBS is not known (Soares, 2014), and it is considered to be multi-factorial (Tang, Lin, & Zhang, 2013). However, various physiological factors have been proposed to contribute to IBS (e.g., gastrointestinal dismotility, visceral hypersensitivity, and increased intestinal permeability; e.g., gastrointestinal dismotility, visceral hypersensitivity, and increased intestinal permeability; Soares, 2014). The biopsychosocial model is the most prominent model used to understand IBS (Tanaka, Kanazawa, Fukudo, & Drossman, 2011). The biopsychosocial model of IBS states that IBS symptoms result from, and are maintained by, the interaction between biological factors (e.g., physiological symptoms), psychosocial factors (e.g., cognitions, emotions, and subsequent behaviours, personality traits such as perfectionism), and environmental factors (Soares, 2014). The Cognitive Behavioural model (CBT) of IBS focuses on psychological factors that can act as maintaining factors for IBS symptoms and subsequent patient distress over time, and emphasizes the role of cognitions and subsequent behaviours. Research shows that CBT for IBS can be effective for relieving IBS symptoms and improving the quality of life of patients with IBS (Boyce, Gilchrist, Talley, & Rose, 2000; Greene & Blanchard, 1994).

ED patients frequently complain of gastrointestinal symptoms, for example, bloating, and constipation (Sato & Fukudo, 2015). This is perhaps not surprising, given that ED-related behaviours (e.g., self-induced vomiting, laxative abuse, and dietary restriction) have been suggested to have negative effects on the digestive system (Abraham & Kellow, 2011). Although estimates vary, people with ED are suggested to have a high prevalence of IBS: for example 64-69% in outpatient samples (Dejong, Perkins, Grover, & Schmidt, 2011; Perkins, Keville, Schmidt, & Chalder, 2005), and 93-98% in inpatient samples (Abraham & Kellow, 2011; Boyd et al., 2005). IBS prevalence is much lower in the general population (e.g. 6-21% UK prevalence; Canavan, West, & Card, 2014), and in other mental health populations (e.g. 10-15% in

anxiety and depression; Saito, Schoenfeld, & Locke, 2002; Saito, Schoenfeld, & Locke III, 2002). However, Dejong et al. (2011) argue there is poor recognition and treatment of IBS in patients with ED.

Why examine the links between ED and IBS?

The links between ED and IBS are not well understood, and this understanding is vital for the development of treatment approaches for comorbid ED and IBS (Tang, Toner, Stuckless, Dion, Kaplan, & Ali, 1998). The presence of IBS in people with ED has negative implications for quality of life(Abraham & Kellow, 2011), and can adversely affect treatment outcomes (Hadley & Walsh, 2003). Given this, it could be suggested that there is a malignant interaction between ED and IBS, with the presence of each disorder exacerbating the other. Research examining IBS in 101 ED inpatients found that 98% met criteria for one FGID, with IBS being the most prevalent (Boyd et al., 2005). Moreover, this study found that there were psychological variables that predicted IBS (e.g., anxiety, neuroticism), whereas ED characteristics (e.g., BMI) did not predict IBS. Boyd et al., (2005) Boyd et al. (2005)also found that IBS symptoms are highly likely to persist following significant recovery from the ED, which suggests that in addition to gastrointestinal factors and ED-related features, there could be other factors that contribute to the maintenance of IBS over time, including psychological factors such as cognition..

Existing research examining the links between ED and IBS

To date, few studies have examined the links between ED and IBS, and this represents a significant gap in the literature. Dejong et al. (2011) examined 64 outpatients with a diagnosis of bulimia nervosa (BN), and found that the presence of IBS was not related to ED diagnosis, symptoms or thoughts. This contradicts two studies which examined ED and IBS in patients with ED (all subtypes) and found that ED cognitions were associated with IBS symptoms (Abraham & Kellow, 2011; Hadley & Walsh, 2003; Perkins et al., 2005). However, the Dejong et al. (2011) study had a small sample size, and no control group for comparison. Perkins et al. (2005) examined the prevalence of IBS in a large sample of patients with current or past ED (n=234), and concluded that the onset of IBS symptoms occurred long after the onset of ED symptoms (mean of 10 years) in 88% of their sample. Abraham and Kellow (2011)

found that specific psychological features of ED were predictors of IBS in a sample of 160 patients with ED, and specifically, cognitions around control.

When comparing these studies, however, it is important to note that Dejong et al. (2011) only examined patients with BN, whereas both Perkins et al., (2005) Perkins et al. (2005) and Abraham and Kellow (2011) examined patients with all subtypes of ED, in line with the transdiagnostic model of ED. It has been suggested that the aetiology and maintaining factors of IBS might be different for the different subtypes of ED (Perkins et al., 2005), and as such, it might be that these studies had different findings because of these sampling differences. It could be that some ED subtypes make patients more vulnerable to developing gastrointestinal symptoms due to the behavioural features of the ED. For example, laxative use, binge eating, and self-induced vomiting seen in patients with BN might increase the likelihood of developing gastrointestinal symptoms. However, the eating disorder psychopathology associated with AN (e.g., dietary restriction) or BED (e.g., binge eating) may have a differential effect on physiology and therefore may make affect patients vulnerability of developing gastrointestinal symptoms. Despite this, two studies have found no differences between the type and prevalence of gastrointestinal symptoms in people with AN and BN (Hutson & Wald, 1990; Kamal, Chami, Andersen, Rosell, Schuster, & Whitehead, 1991).

How can we better understand the mechanisms that link ED and IBS?

Multiple factors are likely to contribute to the higher prevalence of IBS in people with ED. One suggested factor is the impact that ED-related behaviours (e.g., self-induced vomiting, laxative abuse, and dietary restriction) have on gastrointestinal processes (Krahn, Kurth, Nairn, Redmond, Drewnowski, & Gomberg, 1996; Porcelli et al., 1998; Sullivan, Blewett, Jenkins, & Allison, 1997). Whilst the direct impact of these ED-related behaviours on gastrointestinal functioning has been well recognised, it has been suggested that it is likely that there are other predisposing, precipitating and maintaining factors that link ED and IBS (Perkins et al., 2005). CBT models of ED would suggest that people with ED engage in ED-related behaviours after experiencing, or subsequently to, ED-related cognitions around shape, weight, and eating concerns. Existing studies examining the links between ED and IBS have found that ED cognitions are both associated with, and predictive of, IBS symptoms in patients who have both ED and IBS. Additionally, the role of cognition is central to both the

biopsychosocial model for understanding IBS, and the transdiagnostic model of ED. As such, one potential mechanism that may link ED and IBS could be shared (or similar) beliefs or cognitions around eating and gastro-intestinal (GI) functioning. People with ED are potentially vulnerable to developing gastrointestinal symptoms (e.g., bloating, constipation, diarrhea), which could be IBS, or an artefact of the impact of ED behaviours. The cognitions that people with ED have in response to these gastrointestinal symptoms may leave them more vulnerable to the development and maintenance processes of IBS, in line with the biopsychosocial model of IBS. Therefore, it could be suggested that the meaning attributed to the gastrointestinal symptoms could subsequently affect whether people with ED develop IBS.

One of the linking mechanisms between ED and IBS may be cognition. However, no studies have examined specific cognitions which may make people with ED more vulnerable to developing IBS. For example, research has not examined whether people with ED are more likely to have IBS-related cognitions, which is an important step in understanding the links between ED and IBS. In addition, beliefs about control may be an important cognitive factor, as a previous study found that cognitions around control in patients with ED were predictive of IBS symptoms (Abraham & Kellow, 2011). People with ED have been shown to have altered cognitions around control (e.g. fear of loss of; overevaluation of the importance of; and sensitivity to control; Bartholdy, Campbell, Schmidt, & O'Daly, 2016). People with ED who have altered beliefs about control may respond to gastrointestinal symptoms in a way that leaves them vulnerable to developing IBS. It is therefore suggested that the meaning that people with ED attribute to the gastrointestinal symptoms might subsequently affect whether they develop IBS. The meaning attributed may be directly impacted by beliefs about control.

The potential role of perfectionism

An additional factor that may be a linking mechanism between ED and IBS is perfectionism, which is defined as a "striving for flawlessness, unrelenting high standards, overly critical self-evaluations, and concerns about others' evaluations" (Flett & Hewitt, 2002). Perfectionism is conceptualised as multidimensional (Stoeber & Otto, 2006), and two dimensions are: *perfectionistic strivings* (unrelenting high standards and a self-oriented striving for perfectionism); and *perfectionistic concerns* (concern about making mistakes, and fears of negative evaluation by others; Stoeber & Damian, 2014).

Perfectionism may be implicated in the links between ED and people with IBS. Several studies have found that patients with ED have higher levels of perfectionism than controls (e.g., mean score on Multidimensional Perfectionism Scale of 9.5 for ED patients, which is significantly lower than the mean score of 6.2 for healthy controls, $p<.001$; (Sutandar‐Pinnock, Blake Woodside, Carter, Olmsted, & Kaplan, 2003). Additionally, studies have also suggested that people with IBS have high levels of perfectionism (MacDonald & Bouchier, 1980), though levels of perfectionism in patients with IBS compared to controls does not seem to be examined in the literature. Perfectionism has been shown to perpetuate both symptoms for both ED and for IBS (Bardone-Cone, Wonderlich, Frost, Bulik, Mitchell, Uppala, & Simonich, 2007; Creed, 2007).

It has been suggested that people with ED have high levels of perfectionistic strivings (Kerr, Skok, & McLaughun, 1991; Stice, 1994), and that people with IBS have more characteristics of perfectionistic concerns (Sosland, 2002). High levels of perfectionism in people with ED and people with IBS has been shown to adversely affect treatment outcome (Bardone-Cone et al., 2007; Creed, 2007). As such, perfectionism is a trait common in both patients with ED and patients with IBS, and has been shown to both perpetuate symptoms and adversely affect treatment outcome. It may be that perfectionism is a factor which could help to explain part of the link between ED and IBS, in line with the biopsychosocial model. Moreover, it may be that different dimensions of perfectionism are present in people with ED, people with IBS, and people with both condition. However, to date, no studies have examined the potential role of perfectionism in people who have both ED and IBS, and this is a gap in the literature.

The present study

This study aims to examine the links between ED and IBS. Cognitions are likely to be important in understanding these links, but studies have not yet examined specific cognitions and subsequent behaviours which may make people with ED more vulnerable to developing IBS. Additionally, perfectionism is prevalent in both people with ED and people with IBS, however, studies have not examined if there is an association between perfectionism and the links between ED and IBS.

To do this, four groups of women were recruited: women with ED, women with IBS, women with both ED and IBS (subsequently referred to as ED/IBS to aid the reader), and a control group of healthy women with neither condition. This design allowed us firstly to identify the prevalence of IBS in a sample of women with ED, as previous estimates vary. Secondly, it allowed us to compare IBS cognitions and subsequent behaviours in women with ED (with and without IBS), and women with IBS, benchmarked against the control group. In addition, the four groups were compared to examine if there is was association with perfectionism, and if there were differences between groups in types of perfectionism. The research questions are:

1. Do women with ED have a higher prevalence of IBS than healthy women?
2. What are the roles of specific cognitions and subsequent behaviours in linking ED and IBS?
3. Is there an association between perfectionism and the links between ED and IBS?

Based on existing research in this area, several hypotheses were made. The primary and two secondary hypotheses are that:

1. Women with ED will have more IBS symptoms than the control group (HC).
2. Women with ED/IBS will have more IBS beliefs and behaviours than both the ED and HC groups, but will not differ from the IBS group.
3. Women with ED/IBS will score more highly for beliefs about control than other groups.

There are two tertiary hypotheses:

4. Women with ED/IBS will score highest for perfectionism.
5. Perfectionistic strivings will be higher in women with ED, perfectionistic concerns will be higher in women with IBS, and that both perfectionistic strivings and perfectionistic concerns will be highest in women with ED and IBS.

Method

Design

This study employed a cross-sectional between-group questionnaire design, comparing four groups of women who have: (i) ED, (ii) IBS, (iii) both ED and IBS (referred to as ED/IBS to aid the reader, (iv) neither of these conditions (healthy controls). Women were recruited because we hypothesised that the linking factors are likely to differ for men (Kerr et al., 1991; Stice, 1994). NHS ethical approval and NHS Trust authorisation for the study was obtained (Appendix A: University of Bath, 17-093; NHS REC, 17/SC/0102). A person with personal experience of ED and IBS was consulted in the development and design of the study.

Participants

A total of N=208 women were recruited via: NHS specialist ED Services in the South West of England; posters advertising the study displayed in NHS waiting areas and at the University of Bath; and social media adverts. A-priori power analysis indicated a sample size of n=28 was required in each group, however, recruitment continued until all groups achieved this: women with ED (n=29), women with IBS (n=48), women with ED/IBS (n=96), and the control group (n=35).

Inclusion criteria for the eating disorders groups (with and without IBS) were to meet diagnostic criteria for ED (all subtypes), and for ED to be the main problem. The IBS group had to meet diagnostic threshold for IBS, with no current or historical ED. Healthy controls had to have no ED or IBS diagnosis, and have not dieted in the last 4 weeks. Exclusion criteria for all participants were being under 18 years of age, male, current substance dependence, and current or historical episode of psychosis.

Procedure

Participants either completed the questionnaires online via Qualtrics (n=198), or on paper (n=10). All participants completed screening questions to ensure they met the inclusion criteria. All participants were provided with a study information sheet, consent form, questionnaire pack, and debrief sheet. Participants were requested to give a unique identifying code so they could later withdraw their responses. Participants were offered a £5 voucher on completion of the questionnaires, to thank them for their time.

Measures

Self-report questionnaires used were (Appendix B):

Eating Disorder symptomology

The 22-item Eating Disorders Diagnostic Scale (EDDS; Stice, Telch, & Rizvi, 2000) assessed the presence and type of ED, with higher scores indicating more symptoms. The EDDS has been shown to have good test-retest reliability (r=.87), internal consistency (mean α=.89), and criterion validity with interview diagnosis (mean k=.83; Stice, Fisher, & Martinez, 2004). The 28-item Eating Disorders Examination-Questionnaire (EDE-Q; Fairburn & Beglin, 1994) assessed ED psychopathology. The EDE-Q has subscales of restraint, eating concern, shape concern, and weight concern, with higher scores indicating more ED psychopathology. The EDE-Q has been shown to have good internal consistency (mean α=.89) and test-retest reliability (r=.81; Rose, Vaewsorn, Rosselli-Navarra, Wilson, & Weissman, 2013). The 16-item Clinical Impairment Assessment Questionnaire (CIA; Bohn, Doll, Cooper, Connor, Palmer, & Fairburn, 2008) assessed the severity of ED-related psychosocial impairment, with scores ranging from 0-48 and higher scores indicating more impairment. The CIA has been shown to have acceptable levels of internal consistency (mean α=.94) and test-retest reliability (r=.94; Reas, Rø, Kapstad, & Lask, 2010).

IBS symptomology

The Irritable Bowel Syndrome Severity Scoring System (IBS-SSS; (Francis, Morris, & Whorwell, 1997) diagnostically assessed IBS. This 5-item measure is widely used in IBS studies (Everitt, Landau, Little, Bishop, McCrone, O'Reilly, Coleman, Logan, Chalder, & Moss-Morris, 2015), and is reported to have good reliability and validity, though reliability data is not widely published (Francis et al., 1997). Scores range from 0-500, with a cut-off score of 75 indicating caseness for IBS. Severity scores were: 75–174 mild IBS, 175–299 moderate IBS, 300–500 severe IBS (Francis et al., 1997). The IBS-SSS uses the Rome I criteria for IBS and though recently amended (Drossman, 2016), studies show the Rome I criteria remain valid (Simren, Palsson, & Whitehead, 2017; Spiller, Aziz, Creed, Emmanuel, Houghton, Hungin, Jones, Kumar, Rubin, & Trudgill, 2007).

Cognitive factors

General cognitive factors related to IBS were assessed using two measures of IBS-related beliefs (Beliefs-G and Beliefs-P). Beliefs about control (Beliefs-C) were assessed using a sub-set of five items from these two measures:

Beliefs-G:

Cognitions related to IBS were assessed using the 13-item Beliefs about Gastrointestinal Problems scale (Beliefs-G; Carrick, Salkovskis, & Griffith, 2016), which is adapted from the Cognitive Scale for Functional Bowel Disorders (CSFBD; Toner, Stuckless, Ali, Downie, Emmott, & Akman, 1998). Participants report agreement with cognitions on a Likert scale of 1-10, with a total score ranging from 13-130, where higher scores indicate more unhelpful IBS-related cognitions. Initial analysis of the psychometric properties of this scale using a moderate sample (N=143) showed good internal consistency (Carrick et al., 2016).

Beliefs-P

The 22-item Beliefs about Physical Symptoms Scale (Beliefs-P; Carrick et al., 2016) assessed cognitions about IBS symptoms. This was adapted from, and includes items derived from CBT IBS literature. Participants report agreement with cognitions on a Likert Scale of 1-10, with the total score ranging from 22-220, and higher scores indicating more unhelpful cognitions. Initial analysis of the psychometric properties of this scale using a moderate sample (N=143) showed good internal consistency (Carrick et al., 2016).

Beliefs about control (Beliefs-C) were examined using a sub-set of five control-related items selected by the authors from the Beliefs-G and Beliefs P-scales, which were chosen a-priori. These items were summed to give a total score ranging from 5-50, with higher scores indicating more unhelpful beliefs about control.

Behavioural factors

IBS-related behaviours were assessed using the 18-item Gastrointestinal Symptoms and Behaviour Scale (Behaviour-P; (Carrick et al., 2016), which was adapted from the IBS Behavioural-Responses Questionnaire (Reme, Darnley, Kennedy, & Chalder, 2010). Participants report agreement with behaviours on a Likert Scale of 1-10, with a total score ranging from 18-180, and higher scores indicating more unhelpful

behaviours. Initial analysis of the psychometric properties of this scale using a moderate sample (N=143) showed this scale to have good internal consistency (Carrick et al., 2016).

Perfectionism

Perfectionism was assessed using the 16-item Perfectionism Scale (Salkovskis & Kobori, Unpublished), which was developed using items from the Frost Multidimensional Perfectionism Scale; and the Persistence, Perseveration and Perfectionism Questionnaire (Frost, Marten, Lahart, & Rosenblate, 1990; Waller, Shaw, Meyer, Haslam, Lawson, & Serpell, 2012). The scale has two dimensions which map onto perfectionistic strivings and perfectionistic concerns, with higher scores indicating more perfectionism. Psychometric properties of this scale were examined using the sample in this study.

Psychological wellbeing

Depression was assessed using the Patient Health Questionnaire (Kroenke, Spitzer, & Williams, 2001), with scores ranging from 0-27 and higher scores indicating higher depression. The PHQ-9 has been found to have good criterion validity (r=.88), internal consistency (r=.86), and test-retest reliability validity (r=.84; Kroenke, Spitzer, Williams, & Löwe, 2010). Anxiety was assessed using the Generalised Anxiety Disorder questionnaire (GAD-7; Spitzer, Kroenke, Williams, & Lowe, 2006) with scores ranging from 0-21, and higher scores indicating higher anxiety. The GAD-7 has been shown to have good internal consistency (mean α=.89; (Löwe, Decker, Müller, Brähler, Schellberg, Herzog, & Herzberg, 2008), and good criterion validity (r=.82, (Spitzer et al., 2006). The 5-item Work and Social Adjustment Scale (WSAS; (Mundt, Marks, Shear, & Greist, 2002) assessed functional impairment. Scores range from 0-40 with higher scores indicating higher impairment. Studies have found the WSAS to have internal reliability (r=.70) and test-retest reliability (r=.73; (Mundt et al., 2002).

Analytic plan

The data were analysed using SPSS (V24.0, Chicago, IL). Histograms, p-plots and boxplots were examined, and showed acceptable levels of normal distribution and minimal outliers on all measures. Demographic and psychological characteristics of

groups were compared using a one-way ANOVA for continuous variables, and Chi-Square for categorical variables. Psychometric properties of the Beliefs-G, Beliefs-P, Beliefs-C, Behaviour-P, and Perfectionism scale were investigated. Factor analysis for each of these scales was completed, using Varimax rotation. Subscales were then computed on the basis of the factors identified.

The primary, secondary and tertiary analyses were completed using Mixed Model ANOVAs. Mauchley's Test of Sphericity was completed for repeated measures analyses to evaluate serial dependency, and where present, the Greenhouse-Geisser estimates were used. Levene's Test was also conducted for homogeneity variance. Where post-hoc analysis was conducted, Homogeneity of Variance assumptions (HOV) were tested. Where met, Fisher's Least Significance Difference (LSD) was used; where not met, Dunnett's T3 was used.

Results

Demographic characteristics

Participants' demographic characteristics are displayed in Table 1. There were no significant differences between groups in BMI, education level, or relationship status. One-way ANOVA indicated a significant difference between groups for age, with the ED/IBS group being significantly older than healthy controls (HC).

Table 1. Group demographic information and analysis of differences between groups (N=208)

Variable	ED (n=29)	ED/IBS (n=96)	IBS (n=48)	Healthy controls (n=35)	ANOVA/Chi-Square analysis
Age Mean (SD)	$28.38_{a,b}$ (9.39)	30.66_{b} (9.86)	$30.46_{a,b}$ (11.02)	24.34_{a} (5.55)	$F_{(3,207)}$=4.14, p<.01
Body mass index (BMI): Mean (SD)	24.11_{a} (7.54)	29.56_{a} (14.74)	26.25_{a} (13.76)	24.00_{a} (5.40)	$F_{(3,207)}$=2.57, p>.05
Ethnicity:					
White British	62.1% (n=18)	79.2% (n=76)	77.1% (n=37)	80.0% (n=28)	*
Other	27.6% (n=8)	11.5% (n=11)	16.7% (n=8)	11.4% (n=4)	
Employment status:					
Employed	48.3% (n=14)	63.5% (n=61)	66.7% (n=32)	48.6% (n=17)	*
Student	37.9% (n=10)	15.6% (n=15)	16.7% (n=8)	51.4% (n=18)	
Not employed	13.8% (n=4)	20.8% (n=20)	14.6% (n=7)	0% (n=0)	
Education level:					
GCSE and below	13.8% (n=4)	15.6% (n=15)	18.8% (n=9)	2.9% (n=1)	$\chi^2_{(3, n=208)}$=2.61, $p>.05_{N.B.}$
A-Levels	24.1% (n=7)	30.2% (n=29)	25.0% (n=12)	54.3% (n=19)	
Undergraduate	51.7% (n=15_	41.7% (n=40)	43.8% (n=21)	28.6% (n=10)	
Postgraduate	10.3% (n=3)	12.5% (n=12)	12.5% (n=6)	14.3% (n=5)	
Relationship status:					
Married	27.6% (n=8)	49.0% (n=47)	45.8% (n=22)	28.6% (n=10)	$\chi^2_{(3, n=208)}$=7.27, p>.05
Not married	72.4% (n=21)	51.0% (n=49)	54.2% (n=26)	71.4% (n=25)	

Standard deviations in parentheses

$_{a,b,c}$ Those scores with different subscripts significantly differ from each other (p<.05)

* Insufficient numbers in this category to complete Chi-Square analysis, please refer to percentages

N.B. Chi-Square analysis completed on education level collapsed into (1) degree, and (2) no-degree, due to insufficient numbers to analyse all education level categories.

General psychological characteristics

Participants' general psychological characteristics are displayed in Table 2. One-way ANOVAs indicated significant differences between groups for PHQ-9, GAD-7, and WSAS scores, such that the ED/IBS group scored significantly higher on all three measures than the IBS group. HC scored significantly lower than the other groups on all three measures.

Table 2. General psychological characteristics mean scores by group and analysis of differences between groups

Measure Mean (SD)	ED (n=29)	ED/IBS (n=96)	IBS (n=48)	Healthy controls (n=35)	ANOVA analysis
PHQ-9	$12.83_{a,b}$ (7.21)	15.06_{b} (6.78)	11.00_{a} (5.87)	6.09_{c} (7.03)	$F_{(3,207)}$=16.20, p<.0001
GAD-7	$12.07_{a,b}$ (6.53)	12.15_{b} (5.69)	10.65_{a} (6.01)	5.74_{c} (5.96)	$F_{(3,207)}$=10.58, p<.0001
WSAS	$16.52_{a,b}$ (10.72)	20.19_{b} (10.05)	12.60_{a} (9.36)	6.34_{c} (7.03)	$F_{(3,207)}$=19.21, p<.0001

Standard deviations in parentheses

$_{a,b,c}$ Those scores with different subscripts significantly differ from each other (p>.05)

Eating disorder and IBS characteristics

Participants' eating disorder characteristics and their IBS characteristics are displayed in Table 3. ANOVAs and post-hoc analysis indicated that the groups were distinct from one another, in that the expected characteristics were found for each group (e.g., ED group showed ED characteristics, IBS group showed IBS characteristics, HC group showed neither). Of the participants who met diagnostic criteria for ED (in both the ED and ED/IBS group), n=40 had not received a formal diagnosis of ED (32% of sample). Of the participants who met diagnostic criteria for IBS (in both the IBS and ED/IBS groups), n=68 had not received a formal diagnosis of IBS (47% of sample).

Table 3. Eating disorder and IBS characteristics by group and analysis of differences between groups

Measure Mean (SD)	ED (n=29)	ED/IBS (n=96)	IBS (n=48)	Healthy controls (n=35)	ANOVA analysis
EDE-Q global	3.12_a (1.40)	3.33_a (1.39)	1.53_b (1.09)	1.52_b (1.10)	$F_{(3,207)}$=40.20, p<.0001
CIA	26.76_a (13.39)	30.78_a (12.40)	14.08_b (13.27)	5.60_c (6.63)	$F_{(3,207)}$=47.39, p<.0001
EDDS diagnostic category:					
Anorexia	27.6%	18.8%	*N/A*	*N/A*	*
Bulimia	20.7%	22.9%			
Binge eating disorder	6.9%	8.3%			
Other	41.4%	42.7%			
IBS-SSS total	30.34_a (19.72)	246.56_b (119.58)	256.77_b (119.37)	23.71_a (21.57)	$F_{(2,207)}$=73.17, p<.0001
IBS-SSS severity rating:					
Mild	*N/A*	30.2%	35.4%	*N/A*	$\chi^2_{(2,n=144)}$=3.62, p>.05
Moderate		38.5%	22.9%		
Severe		31.3%	41.7%		

Standard deviations in parentheses

$_{a,b,c}$ Those scores with different subscripts significantly differ from each other (p>.05)

* Insufficient numbers in this category to complete Chi-Square analysis, please refer to percentages

EDE-Q global, Eating Disorders Examination-Questionnaire global (total eating disorder psychopathology score); CIA, Clinical Impairment Assessment (clinical impairment associated with eating disorder symptoms); EDDS, Eating Disorder Diagnostic Scale (eating disorder DSM-V diagnosis); IBS-SSS, IBS Symptom Severity Scale (scale total, and severity rating presented).

Psychometric properties of scales

Internal consistency (Cronbach's alpha; α), and factor analysis was completed on the Beliefs-P, Beliefs-G, Behaviour-P, and Perfectionism scales (Appendix C). The

Beliefs about Control scale (Beliefs-C), was also examined for internal consistency (α=.878).

Beliefs about Gastrointestinal Problems (Beliefs-G)

Factor analysis indicated Beliefs-G was best accounted for by a single factor (α=.960), and subsequent analysis was conducted using the monolithic Beliefs-G scaled score.

Beliefs about Physical Symptoms (Beliefs-P)

Factor analysis indicated Beliefs-P (α=.962) was best accounted for by three factors: (1) distressing beliefs about symptoms (α=.962), (2) perceived controllability of symptoms (α=.788), and (3) perceived benefits of reduced activity (α=.820). Subsequent analysis was conducted using the three Beliefs-P subscale scaled scores.

Gastrointestinal Symptoms and Behaviour (Behaviour-P)

Factor analysis indicated Behaviour-P (α=.948) was best accounted for by two factors: (1) avoidant self-management of symptoms (α=.943), and (2) symptom-focused self-management (α=.921). Subsequent analysis was conducted using the two Behaviour-P subscale scaled scores.

Perfectionism Scale

Factor analyses for the Perfectionism scale (α=.946), broadly confirmed the division into the two subscales: perfectionistic strivings (α=.913), and perfectionistic concerns (α=.942). Subsequent analysis was conducted using the two Perfectionism subscale scaled scores.

Primary analysis

For participants who met criteria for ED (n=125), 96 (77%) met criteria for IBS. Forty-five participants had a formal diagnosis of IBS, with 51 having no formal diagnosis.

The primary hypothesis was that participants with ED will have more IBS symptoms than the HC, and for this analysis, the ED and ED/IBS group were collapsed into a larger ED group in order to examine this hypothesis. A one-way ANOVA (group:

ED total, IBS, HC) for IBS symptoms (IBS-SSS) found a significant main effect for group $F_{(2,207)}$=38.77, Greenhouse Geisser (GG) p<.0001. Post-hoc analyses using Dunnett's T3 (Table 4) showed that all participants with ED (n=125) had significantly more IBS symptoms than HC (p<.0001). Additionally, the ED total group had significantly less IBS symptoms than the IBS group (p<.05). The findings were consistent with the hypothesis.

Further post-hoc analysis conducted on all four groups (ED, ED/IBS, IBS and HC) using Dunnett's T3 (Table 3) showed that participants with ED (n=29) had significantly less IBS symptoms than both the ED/IBS (n=96) and IBS group (p<.0001), but not significantly different to HC. Additionally, the ED/IBS group did not significantly differ from the IBS group in terms of IBS symptoms.

Table 4. Mean IBS symptom score by group

	ED total (n=125)	IBS (n=48)	Healthy controls (n=35)
IBS-SSS total score Mean (SD)	196.32_a (139.40)	256.77_b (119.37)	23.71_c (21.57)

Standard deviations in parentheses
$_{a,b,c}$ Those scores with different subscripts significantly differ from each other (p>.05)

Secondary analysis

The secondary hypothesis was that participants with ED/IBS would have more IBS beliefs and behaviours than both the ED and HC groups, but would not differ from the IBS group. Furthermore, that women with ED/IBS would score more highly for beliefs about control than other groups.

IBS beliefs

A 4x4 Mixed Model ANOVA was completed with group as the between-subjects factor (ED, ED/IBS, IBS and HC) and the four belief scales (Beliefs-G, three Beliefs-P subscales) as the within-subjects factor. There was a significant main effect of scale ($F_{(2.57, 207)}$=18.27, GG p<.0001) and group ($F_{(3,207)}$=37.83, GG p<.0001). The interaction was not significant ($F_{(7.72, 207)}$=2.28, GG p>.05), shown in Figure 1. Post-hoc tests (with Bonferroni adjustment) showed that the ED/IBS group had significantly

more IBS beliefs on all four scales than both the ED and HC groups, but not significantly different to the IBS group (Table 5). This was in line with the hypothesis made.

Table 5. Mean beliefs and behaviours scale scores and post-hoc analysis of differences between groups

Mean (SD)	ED (n=29)	ED/IBS (n=96)	IBS (n=48)	Healthy controls (n=35)
Beliefs-G	2.75_a (2.26)	5.77_b (2.51)	5.92_b (2.77)	2.44_a (1.94)
Beliefs-P – Distressing beliefs about symptoms subscale	2.69_a (1.87)	5.48_b (2.29)	5.79_b (2.38)	1.82_a (1.54)
Beliefs-P – Perceived controllability of symptoms subscale	3.65_a (2.48)	5.91_b (1.93)	5.91_b (2.08)	2.94_a (2.25)
Beliefs-P – Perceived benefits of reduced activity subscale	2.77_a (1.85)	4.30_b (2.46)	4.50_b (2.46)	1.95_a (1.56)
Behaviour-P – Avoidant self-management of symptoms subscale	2.75_a (2.13)	4.87_b (2.48)	4.44_b (2.49)	1.80_a (1.55)
Behaviour-P – Self-focused self-management of symptoms subscale	3.02_a (2.07)	5.94_b (2.26)	6.76_b (2.49)	1.89_a (1.31)
Beliefs-C	14.90_a (11.02)	27.69_b (12.71)	28.54_b (13.81)	11.49_a (9.07)

Standard deviations in parentheses

$_{a,b,c}$ Those scores with different subscripts significantly differ from each other ($p>.05$)

Levene's test was not significant, so LSD was used for multiple comparisons

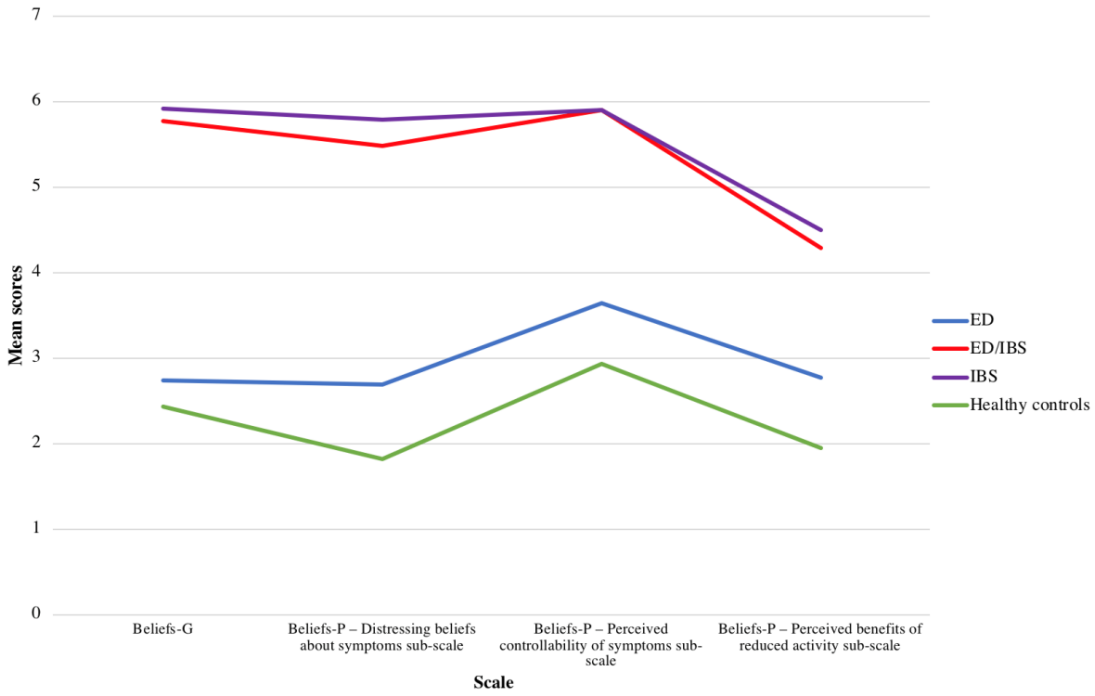

Figure 1. Mean belief scales scores by group

IBS behaviours

A 4x2 Mixed Model ANOVA was completed with group as the between-subjects factor (ED, ED/IBS, IBS and HC) and the IBS behaviour scales (two Behaviour-P subscales) as the within-subjects factor. There was a significant main effect of scale ($F_{(1.00,208)}$=38.33, GG p<.0001) and group ($F_{(3, 208)}$=38.11, GG p<.0001). These effects were modified by a significant interaction ($F_{(3.00,158)}$=10.96, GG p<.0001), shown in Figure 2.

Post-hoc tests (with Bonferroni adjustment) showed that the ED/IBS group had significantly more IBS behaviours on both subscales (Table 5) than both the ED and HC groups, but not significantly different to the IBS group. This was in line with the hypothesis made.

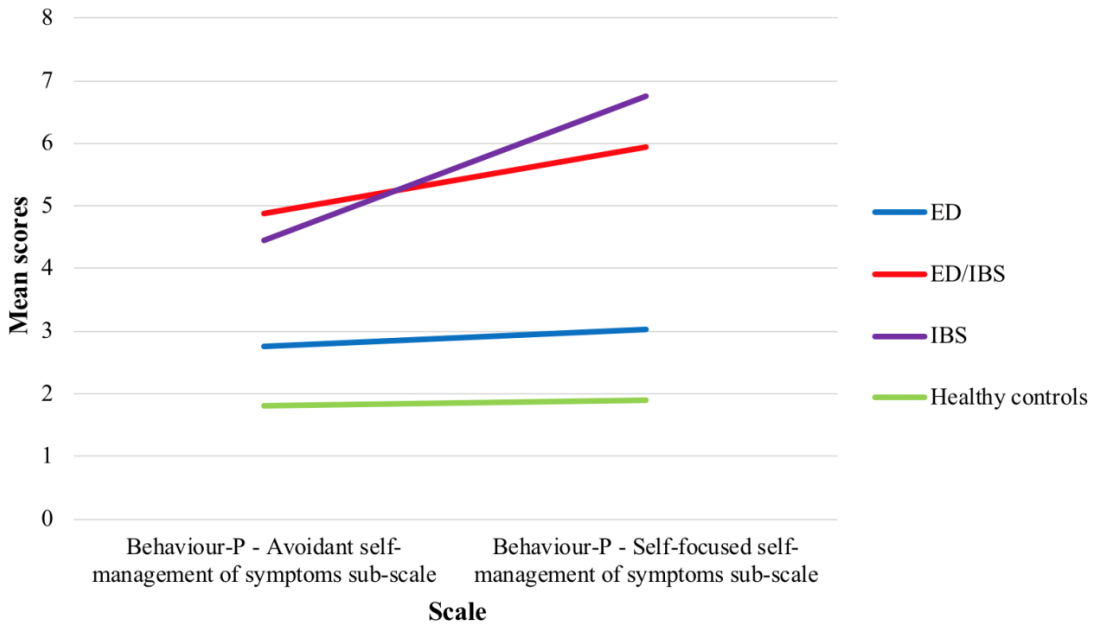

Figure 2. Mean behaviour subscale scores by group

Beliefs about control

A one-way ANOVA (group: ED, ED/IBS, IBS, HC) for beliefs about control (Beliefs-C), found a significant main effect for group $F(_{3,207})$= 22.50, p<.0001. Post-hoc analysis (Table 5) found that participants with ED/IBS had significantly more control cognitions than participants with ED and HC, however not significantly different to participants with IBS. The findings were not in line with the hypothesis.

Tertiary analysis

It was hypothesised women with ED/IBS would score highest for perfectionism. Furthermore, that perfectionistic strivings would be higher in women with ED, perfectionistic concerns higher in women with IBS, and that both perfectionistic strivings and perfectionistic concerns will be highest in women with ED and IBS.

Total perfectionism

A one-way ANOVA was completed using a four-group comparison (ED, ED/IBS, IBS, HC), with the total perfectionism scale as the dependent variable. There was not a significant main effect of group ($F(_{3,206})$=1.10, p>.05), and there were no significant differences between group scores (Table 7), which was not in line with the hypothesis.

Table 6. Mean perfectionism scores by group

Mean (SD)	ED (n=29)	ED/IBS (n=96)	IBS (n=48)	Healthy controls (n=35)
Perfectionism total	4.87_{a} (1.18)	4.93_{a} (1.18)	4.61_{a} (1.50)	4.53_{a} (0.98)
Perfectionistic strivings	4.91_{a} (1.28)	5.01_{a} (1.49)	4.88_{a} (1.58)	5.09_{a} (1.41)
Perfectionistic concerns	4.84_{ab} (1.25)	4.87_{a} (1.56)	4.41_{ab} (1.73)	4.10_{b} (1.24)

Standard deviations in parentheses

$_{a,b,c}$ Those scores with different subscripts significantly differ from each other ($p>.05$)

Types of perfectionism

A 4x2 Mixed Model ANOVA was completed with four groups as the between-subjects factor (ED, ED/IBS, IBS and HC) and the perfectionistic strivings and perfectionistic concerns scales as the within-subjects factor. There was a significant main effect of scale ($F_{(1.00,203)}=20.29$, GG $p<.0001$). There was not a significant main effect of group ($F_{(2,3203)}=.89$,GG $p>.05$). The interaction was significant ($F_{(3.00,203)}=4.98$, GG $p<.01$), and is shown in Figure 3.

As the interaction was significant, a simple main effects analysis was conducted on the perfectionism subscales (Table 6). Post-hoc tests (with Bonferroni adjustment) found no significant differences between groups for perfectionistic strivings. For perfectionistic concerns, the ED/IBS group scored significantly higher than HC, but was not significantly different from either the ED or the IBS group. These findings were not in line with the hypotheses made.

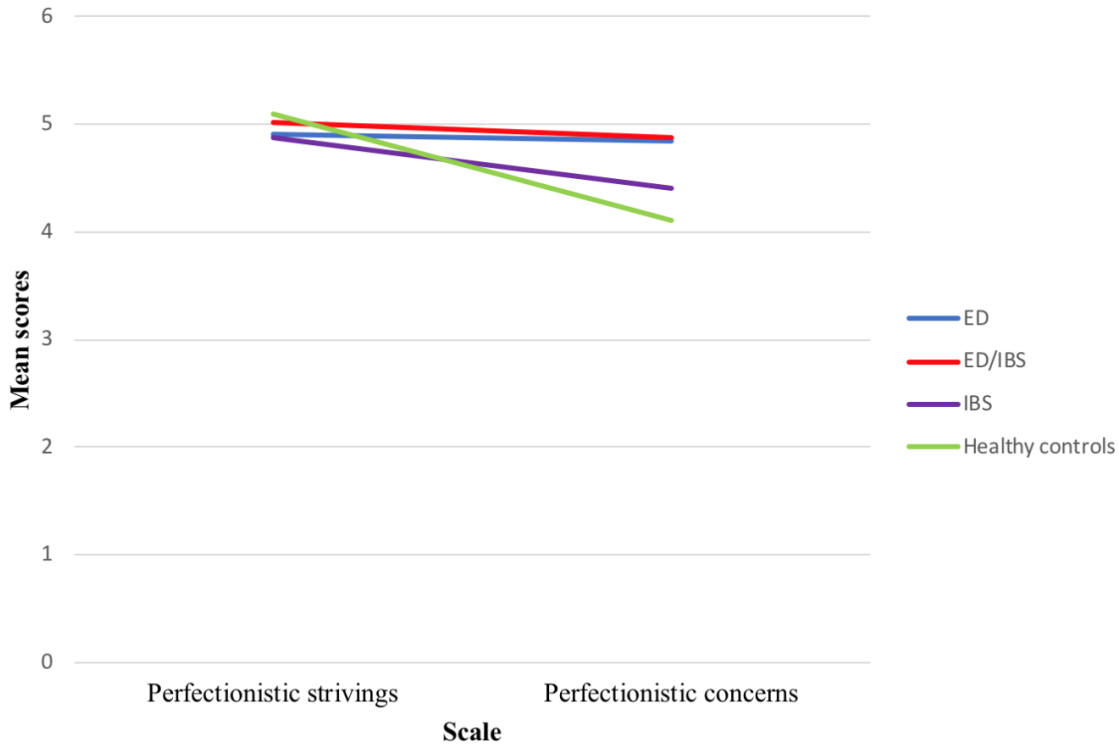

Figure 3. Mean perfectionism subscale scores by group

Discussion

This study aimed to examine the links between ED and IBS in a sample of women, to develop understanding in this area. Firstly, this study sought to report the prevalence of IBS in an outpatient ED sample, as previous estimates have varied. We found that 77% of women with ED met diagnostic criteria for IBS, which is far higher than general population prevalence estimates. Secondly, this study found that the ED/IBS group had significantly more IBS-related cognitions and behaviours than both women with ED and healthy women, but not different to women with IBS. However, for beliefs about control, the ED/IBS group did not score significantly higher than the other groups, contrary to our hypothesis. Finally, this study found no differences in total perfectionism scores between groups. Perfectionistic concerns were significantly higher in the ED/IBS group compared to controls, but the ED/IBS group was not significantly different to either the ED or the IBS group. There were no group differences in perfectionistic strivings.

Do women with ED have a higher prevalence of IBS than healthy women?

This study found that 77% of women with ED met the diagnostic criteria for IBS. This proportion is far higher than prevalence estimates for both general population (e.g., 6-21%; (Canavan et al., 2014), and other mental health populations (e.g. 10-15%; Saito et al., 2002). However, our findings are similar to previous ED outpatient IBS prevalence estimates of 64-69% (Dejong et al., 2011; Perkins et al., 2005). Additionally, only one-third of the women who met diagnostic criteria for IBS in this study stated they had received a formal diagnosis of IBS, though this is similar to the findings of other studies (Perkins et al, 2005). These findings support previous literature demonstrating high levels of comorbidity between the two disorders, and highlights the need for more research seeking to understand the mechanisms linking ED and IBS.

This study found that, as hypothesised, the ED group had significantly more IBS symptoms than healthy controls. Previous studies examining the links between ED and IBS have not been controlled, and as such, this is the first study to benchmark IBS symptoms in women with ED against a control group. It is perhaps not surprising that the ED group were found to have more IBS symptoms than the healthy controls, given the negative effects that ED-related behaviours have been suggested to have on gastrointestinal processes (Abraham & Kellow, 2011). However, physiological factors alone may not fully explain the links between ED and IBS, because firstly, IBS is multi-factorial (Tang et al., 2013), and secondly, research has found that the onset of IBS symptoms occurs long after the onset of ED (Dejong et al., 2011). In line with the biopsychosocial model of IBS (Tanaka et al., 2011), it is likely that there are several factors which are implicated in the links between ED and IBS, including physiological factors, however, psychological factors (e.g., cognitions and subsequent behaviours) may also play a part in the development and maintenance of IBS in women with ED.

What are the roles of specific cognitions and subsequent behaviours in linking ED and IBS?

This study hypothesised that cognitions, and subsequent behaviours, might be a factor linking ED and IBS. This study extends previous research by examining specific cognitions which may make women with ED more vulnerable to developing IBS. Findings showed that the ED/IBS group had significantly more IBS-related cognitions and behaviours than both the ED group and healthy controls. Moreover, the ED/IBS

group did not significantly differ from the IBS group in terms of IBS beliefs and behaviour.

Previous studies have used correlational analysis to examine factors associated with IBS symptoms, which limits our confidence in the conclusions drawn because this study design does not allow comparison of key variables across groups. These studies have broadly found that IBS symptoms correlate with ED psychopathology (Abraham & Kellow, 2011). The present study found that the ED/IBS group had similar IBS-related cognitions and behaviours to the IBS group. This indicates that cognitions may be important in understanding the links between ED and IBS, which is in line with the biopsychosocial model of IBS (Tanaka et al., 2011). IBS-related cognitions, and subsequent IBS behaviours, that occur in response to gastrointestinal symptoms may make women with ED more vulnerable to developing IBS. IBS-related cognitions may also be key factors that maintain IBS (Tang et al., 2013). Cognitions and behaviours are central to CBT models, and therefore it makes sense that women with ED who have more IBS cognitions and behaviours will have more IBS symptoms, as these cognitions are likely to affect physiological functioning (Jones, Koloski, Boyce, & Talley, 2011)

This study examined beliefs about control as a specific cognition that may potentially impact on the meaning that people with ED attribute to gastrointestinal symptoms. To our knowledge, no other study has examined the role of beliefs about control in a sample of people who have both ED and IBS, however, a previous study found that cognitions around control in patients with ED were predictive of IBS symptoms (Abraham and Kellow, 2011). However, this study found that beliefs about control did not differ between the ED/IBS group and the IBS group, which was contrary to the hypothesis. It could be that people with IBS have altered cognitions about control (Kennedy, Chalder, McCrone, Darnley, Knapp, Jones, & Wessely, 2006). However, beliefs about control were measured in this study by a sub-set of five items chosen from the IBS beliefs measures. This means that beliefs about control may have been inflated in the IBS group because the items chosen related to beliefs about control of IBS specifically, as opposed to more general beliefs about control, and this might have impacted on the results found. Beliefs about control therefore do not appear to be implicated in the links between ED and IBS.

Is there an association between perfectionism and the links between ED and IBS?

Finally, this study found that that perfectionism doesn't appear to be associated with the links between ED and IBS. There were no significant differences between groups for perfectionistic strivings, which was surprising given previous research (Kerr et al., 1991; Stice, 1994). This may relate to sampling bias, or may indicate that women with IBS also have high levels of perfectionist strivings. Perfectionistic concerns were higher in the ED/IBS group than healthy controls, but did not significantly differ from either the IBS group or ED group, which was contrary to the hypothesis. This could mean that perfectionist concerns are not associated in the links between ED and IBS.

Strengths and limitations

This study extended previous research in that the design allowed the comparison of key variables between different groups. A further strength is the inclusion of a control group, which allowed benchmark comparisons between the groups to be completed. The recruitment plan meant that this study had a moderate sample size (N=208), and was powered in line with the a-priori calculation. We can, therefore, be relatively confident in the conclusions drawn. In addition, we can ascertain that there were no major confounding variables between the groups, such that the groups represent distinctly different populations.

This study used a sample of convenience, and the recruitment methods actively sought women with ED and IBS, and this may have inflated the numbers of people with IBS who participated. Recruitment took place in a community setting, and it is important to note that a proportion of participants who met diagnostic criteria for ED and were therefore included in our ED sample, had not received a formal diagnosis of ED (n=40, 32% of sample). Similarly, there were a proportion of participants who met diagnostic criteria for IBS and were therefore included in our IBS sample, but had not received a formal diagnosis of IBS (n=68, 47% of sample). Participants who had not received a formal diagnosis of either ED or IBS were not excluded from the study, and this has implications for the findings and may affect the validity of the results. However, the diagnostic measures used in the study have been shown to have good reliability and validity. Future research could examine the links between ED and IBS in a sample of participants who have received a formal diagnosis of ED and/or IBS.

Furthermore, though demonstrating good psychometric properties, the IBS beliefs and behaviours scales used are non-validated, and might have been difficult for

the healthy control group to complete, as they do not have gastrointestinal symptoms. This means that the healthy control participants may not have completed these questionnaires correctly, and their total scores may have had a floor effect (whereby they scored zero or very low on the measures), which is likely to amplify the differences found between groups, and therefore affect the reliability and validity of the group analysis and results presented. As such, caution needs to be taken in interpreting the results of this study, and replication is needed. Additionally, the community sample recruited may differ to clinical samples. Moreover, the groups had unequal sample sizes, which may have affected the both the homogeneity of variance assumption and the statistical power of the analysis, and therefore this may have affected the reliability of the ANOVA analysis. There was a higher proportion of students in the healthy control group, which is perhaps not surprising given that the mean age of this group was lower than that of the other groups. As such, caution needs to be taken in generalising the results of this study, and replication is needed.

Clinical implications and future research

This study builds on previous research demonstrating that there are high levels of comorbidity between ED and IBS. This has implications for ED services, where two-thirds of patients are likely to have IBS symptoms which meet criteria for diagnosis. Clinicians working with people with ED should routinely assess for IBS symptoms, cognitions, and behaviours. Given research shows IBS persists following ED recovery, there may be implications for ED relapse prevention, and a future study with longer-term follow up would be useful. Extending this research to males is also important.

Comorbid IBS is likely to negatively affect ED treatment outcome. Future research could focus on designing specific interventions for people who present with comorbid ED and IBS. For example, a clinical trial could compare CBT for eating disorders (CBT-E) and CBT-E combined with CBT for IBS, in an outpatient sample of women with eating disorders both with and without IBS. Examining the efficacy of treating ED and IBS using existing evidence-based treatment protocols could determine if it would be advantageous to develop a specific combined ED and IBS CBT protocol.

Conclusions

Previous research has indicated people with ED are more likely to have IBS than both the general population, and other mental health populations. Comorbid ED and

IBS have negative implications both for treatment outcome, and for quality of life. As such, understanding the links between ED and IBS is important. This study extends previous research by recruiting different groups of women, and benchmarking the findings against a control group of healthy women. Based on the results of this study and previous literature in this area, we can fairly confidently assert both that women with ED have a high proportion of IBS symptoms, and that there is a high prevalence of IBS in this population. The findings of this study indicate that the links between ED and IBS may lie in cognitions, and subsequent behaviours, and this requires further research.

References

Abraham, S., & Kellow, J. (2011). Exploring eating disorder quality of life and functional gastrointestinal disorders among eating disorder patients. *Journal of Psychosomatic Research, 70*(4), 372-377. doi:10.1016/j.jpsychores.2010.11.009

Bardone-Cone, A. M., Wonderlich, S. A., Frost, R. O., Bulik, C. M., Mitchell, J. E., Uppala, S., & Simonich, H. (2007). Perfectionism and eating disorders: Current status and future directions. *Clinical Psychology Review, 27*(3), 384-405.

Bartholdy, S., Campbell, I. C., Schmidt, U., & O'Daly, O. G. (2016). Proactive inhibition: An element of inhibitory control in eating disorders. *Neuroscience and Biobehavioral Reviews, 71*, 1-6.

Beat. (2017). *Media guidelines for reporting eating disorders*. London: BEAT.

Bohn, K., Doll, H. A., Cooper, Z., Connor, M., Palmer, R. L., & Fairburn, C. G. (2008). The measurement of impairment due to eating disorder psychopathology. *Behaviour Research and Therapy, 46*(10), 1105-1110. doi:10.1016/j.brat.2008.06.012

Boyce, P., Gilchrist, J., Talley, N. J., & Rose, D. (2000). Cognitive-behaviour therapy as a treatment for irritable bowel syndrome: a pilot study. *Australian and New Zealand Journal of Psychiatry, 34*(2), 300-309.

Boyd, C., Abraham, S., & Kellow, J. (2005). Psychological features are important predictors of functional gastrointestinal disorders in patients with eating disorders. *Scandinavian Journal of Gastroenterology, 2005, Vol.40(8), p.929-935, 40*(8), 929-935. doi:10.1080/00365520510015836

Camilleri, M., & Choi, M. G. (1997). Review article: irritable bowel syndrome. *Alimentary Pharmacology and Therapeutics, 11*(1), 3-15.

Canavan, C., West, J., & Card, T. (2014). The epidemiology of irritable bowel syndrome. *Clinical Epidemiology, 6*, 71.

Carrick, H., Salkovskis, P. M., & Griffith, E. (2016). Cognitive-Behavioural Factors Involved in CFS/ME and IBS. *Unpublished manuscipt.*

Creed, F. (2007). Cognitive behavioural model of irritable bowel syndrome. *Gut, 56*(8), 1039-1041.

Dejong, H., Perkins, S., Grover, M., & Schmidt, U. (2011). The prevalence of irritable bowel syndrome in outpatients with bulimia nervosa. *International Journal of Eating Disorders, 44*(7), 661-664. doi:10.1002/eat.20901

Drossman, D. A. (2016). Functional gastrointestinal disorders: history, pathophysiology, clinical features, and Rome IV. *Gastroenterology, 150*(6), 1262-1279. e1262.

Drossman, D. A., Li, Z., Andruzzi, E., Temple, R. D., Talley, N. J., Thompson, W. G., . . . Corazziari, E. (1993). US householder survey of functional gastrointestinal disorders. *Digestive Diseases and Sciences, 38*(9), 1569-1580.

Everitt, H., Landau, S., Little, P., Bishop, F. L., McCrone, P., O'Reilly, G., . . . Moss-Morris, R. (2015). Assessing Cognitive behavioural Therapy in Irritable Bowel (ACTIB): protocol for a randomised controlled trial of clinical-effectiveness and cost-effectiveness of therapist delivered cognitive behavioural therapy and web-based self-management in irritable bowel syndrome in adults. *BMJ open, 5*(7), e008622.

Fairburn, C. G., & Beglin, S. J. (1994). Assessment of eating disorders: Interview or self-report questionnaire? *International Journal of Eating Disorders, 16*(4), 363-370.

Fairburn, C. G., Cooper, Z., & Shafran, R. (2003). Cognitive behaviour therapy for eating disorders: A "transdiagnostic" theory and treatment. *Behaviour Research and Therapy, 41*(5), 509-528.

Fairburn, G. (2008). Cognitive Behaviour Therapy and Eating Disorders. New York: Guildford Press.

Flett, G. L., & Hewitt, P. L. (2002). Perfectionism and maladjustment: An overview of theoretical, definitional, and treatment issues.

Francis, C. Y., Morris, J., & Whorwell, P. J. (1997). The irritable bowel severity scoring system: a simple method of monitoring irritable bowel syndrome and its progress. *Alimentary Pharmacology & Therapeutics, 11*(2), 395-402. doi:10.1046/j.1365-2036.1997.142318000.x

Frost, R. O., Marten, P., Lahart, C., & Rosenblate, R. (1990). The dimensions of perfectionism. *Cognitive Therapy and Research, 14*(5), 449-468.

Greene, B., & Blanchard, E. B. (1994). Cognitive therapy for irritable bowel syndrome. *Journal of Consulting and Clinical Psychology, 62*(3), 576.

Hadley, S., & Walsh, B. (2003). Gastrointestinal disturbances in anorexia nervosa and bulimia nervosa. *Current Drug Targets-CNS & Neurological Disorders, 2*(1), 1-9.

Hutson, W. R., & Wald, A. (1990). Gastric emptying in patients with bulimia nervosa and anorexia nervosa. *American Journal of Gastroenterology, 85*(1).

Jones, M., Koloski, N., Boyce, P., & Talley, N. J. (2011). Pathways connecting cognitive behavioral therapy and change in bowel symptoms of IBS. *Journal of Psychosomatic Research, 70*(3), 278-285.

Kamal, N., Chami, T., Andersen, A., Rosell, F. A., Schuster, M. M., & Whitehead, W. E. (1991). Delayed gastrointestinal transit times in anorexia nervosa and bulimia nervosa. *Gastroenterology, 101*(5), 1320-1324.

Kennedy, T. M., Chalder, T., McCrone, P., Darnley, S., Knapp, M., Jones, R., & Wessely, S. (2006). Cognitive behavioural therapy in addition to antispasmodic therapy for irritable bowel syndrome in primary care: randomised controlled trial. *Health Technology Assessment Southampton, 10*(19).

Kerr, J. K., Skok, R. L., & McLaughun, T. (1991). Characteristics common to females who exhibit anorexic or bulimic behavior: A review of current literature. *Journal of Clinical Psychology, 47*(6), 846-853.

Krahn, D., Kurth, C., Nairn, K., Redmond, L., Drewnowski, A., & Gomberg, E. (1996). Dieting Severity and Gastrointestinal Symptoms in College Women. *Journal of American College Health, 45*(2), 67-71. doi:10.1080/07448481.1996.9936864

Kroenke, K., Spitzer, R., & Williams, J. (2001). The PHQ- 9. *Journal of General Internal Medicine, 16*(9), 606-613. doi:10.1046/j.1525-1497.2001.016009606.x

Kroenke, K., Spitzer, R. L., Williams, J. B., & Löwe, B. (2010). The patient health questionnaire somatic, anxiety, and depressive symptom scales: a systematic review. *General Hospital Psychiatry, 32*(4), 345-359.

Lacy, B. E., Mearin, F., Chang, L., Chey, W. D., Lembo, A. J., Simren, M., & Spiller, R. (2016). Bowel disorders. *Gastroenterology, 150*(6), 1393-1407. e1395.

Lampard, A. M., Tasca, G. A., Balfour, L., & Bissada, H. (2013). An evaluation of the transdiagnostic cognitive-behavioural model of eating disorders. *European Eating Disorders Review, 21*(2), 99-107.

Löwe, B., Decker, O., Müller, S., Brähler, E., Schellberg, D., Herzog, W., & Herzberg, P. Y. (2008). Validation and standardization of the Generalized Anxiety Disorder Screener (GAD-7) in the general population. *Medical Care, 46*(3), 266-274.

MacDonald, A., & Bouchier, I. (1980). Non-organic gastrointestinal illness: a medical and psychiatric study. *The British Journal of Psychiatry, 136*(3), 276-283.

Mathers, C. D., Vos, E. T., Stevenson, C. E., & Begg, S. J. (2001). The burden of disease and injury in Australia. *Bulletin of the World Health Organization, 79*(11), 1076.

Mundt, J. C., Marks, I. M., Shear, M. K., & Greist, J. M. (2002). The Work and Social Adjustment Scale: a simple measure of impairment in functioning. *The British Journal of Psychiatry, 180*(5), 461-464.

Perkins, S. J., Keville, S., Schmidt, U., & Chalder, T. (2005). Eating disorders and irritable bowel syndrome: is there a link? *Journal of Psychosomatic Research, 59*(2), 57-64. doi:10.1016/j.jpsychores.2004.04.375

Porcelli, P., Leandro, G., & De Carne, M. (1998). Functional gastrointestinal disorders and eating disorders: relevance of the association in clinical management. *Scandinavian Journal of Gastroenterology, 33*(6), 577-582.

Reas, D. L., Rø, Ø., Kapstad, H., & Lask, B. (2010). Psychometric properties of the clinical impairment assessment: norms for young adult women. *International Journal of Eating Disorders, 43*(1), 72-76.

Reme, S. E., Darnley, S., Kennedy, T., & Chalder, T. (2010). The development of the irritable bowel syndrome-behavioral responses questionnaire. *Journal of Psychosomatic Research, 69*(3), 319-325. doi:10.1016/j.jpsychores.2010.01.025

Rose, J. S., Vaewsorn, A., Rosselli-Navarra, F., Wilson, G. T., & Weissman, R. S. (2013). Test-retest reliability of the eating disorder examination-questionnaire (EDE-Q) in a college sample. *Journal of eating disorders, 1*(1), 42.

Saito, Y. A., Schoenfeld, P., & Locke, G. R. (2002). The epidemiology of irritable bowel syndrome in North America: a systematic review. *The American journal of gastroenterology, 97*(8), 1910-1915.

Saito, Y. A., Schoenfeld, P., & Locke III, G. R. (2002). The epidemiology of irritable bowel syndrome in North America: a systematic review. *The American journal of gastroenterology, 97*(8), 1910-1915.

Salkovskis, P. M., & Kobori. (Unpublished). *Perfectionism scale*. Personal communication.

Sato, Y., & Fukudo, S. (2015). Gastrointestinal symptoms and disorders in patients with eating disorders. *Clinical Journal of Gastroenterology, 8*(5), 255-263. doi:10.1007/s12328-015-0611-x

Simren, M., Palsson, O. S., & Whitehead, W. E. (2017). Update on Rome IV criteria for colorectal disorders: implications for clinical practice. *Current gastroenterology reports, 19*(4), 15.

Soares, R. L. (2014). Irritable bowel syndrome: a clinical review. *World Journal of Gastroenterology: WJG, 20*(34), 12144.

Sosland, M. D. (2002). Cognitive-Behavioral Treatment of Irritable Bowel Syndrome: The Brain-Gut Connection: Elsevier.

Spiller, R., Aziz, Q., Creed, F., Emmanuel, A., Houghton, L., Hungin, P., . . . Trudgill, N. (2007). Guidelines on the irritable bowel syndrome: mechanisms and practical management. *Gut, 56*(12), 1770-1798.

Spitzer, R. L., Kroenke, K., Williams, J. B., & Lowe, B. (2006). A brief measure for assessing generalized anxiety disorder: the GAD-7. *Archives of Internal Medicine, 166*(10), 1092-1097. doi:10.1001/archinte.166.10.1092

Stice, E. (1994). Review of the evidence for a sociocultural model of bulimia nervosa and an exploration of the mechanisms of action. *Clinical Psychology Review, 14*(7), 633-661.

Stice, E., Fisher, M., & Martinez, E. (2004). Eating disorder diagnostic scale: additional evidence of reliability and validity. *Psychological Assessment, 16*(1), 60.

Stice, E., Telch, C. F., & Rizvi, S. L. (2000). Development and validation of the Eating Disorder Diagnostic Scale: a brief self-report measure of anorexia, bulimia, and binge-eating disorder. *Psychological Assessment, 12*(2), 123.

Stoeber, J., & Damian, L. E. (2014). The Clinical Perfectionism Questionnaire: Further evidence for two factors capturing perfectionistic strivings and concerns. *Personality and Individual Differences, 61*, 38-42.

Stoeber, J., & Otto, K. (2006). Positive conceptions of perfectionism: Approaches, evidence, challenges. *Personality and Social Psychology Review, 10*(4), 295-319.

Sullivan, G., Blewett, A. E., Jenkins, P. L., & Allison, M. C. (1997). Eating attitudes and the irritable bowel syndrome. *General Hospital Psychiatry, 19*(1), 62-64. doi:10.1016/S0163-8343(96)00106-5

Sutandar-Pinnock, K., Blake Woodside, D., Carter, J. C., Olmsted, M. P., & Kaplan, A. S. (2003). Perfectionism in anorexia nervosa: A 6–24-month follow-up study. *International Journal of Eating Disorders, 33*(2), 225-229.

Tanaka, Y., Kanazawa, M., Fukudo, S., & Drossman, D. A. (2011). Biopsychosocial model of irritable bowel syndrome. *Journal of Neurogastroenterology and Motility, 17*(2), 131.

Tang, Q., Lin, G., & Zhang, M. (2013). Cognitive-behavioral therapy for the management of irritable bowel syndrome *World Journal of Gastroenterology* (Vol. 19, pp. 8605-8610).

Tang, T. N., Toner, B. B., Stuckless, N., Dion, K. L., Kaplan, A. S., & Ali, A. (1998). Features of eating disorders in patients with irritable bowel syndrome. *Journal of Psychosomatic Research, 45*(2), 171-178. doi:10.1016/S0022-3999(97)00300-0

Toner, B. B., Stuckless, N., Ali, A., Downie, F., Emmott, S., & Akman, D. (1998). The development of a cognitive scale for functional bowel disorders. *Psychosomatic Medicine, 60*(4), 492.

Waller, G., Shaw, T., Meyer, C., Haslam, M., Lawson, R., & Serpell, L. (2012). Persistence, perseveration and perfectionism in the eating disorders. *Behavioural and Cognitive Psychotherapy, 40*(4), 462-473.

Wang, X., Luscombe, G., Boyd, C., Kellow, J., & Abraham, S. (2014). Functional gastrointestinal disorders in eating disorder patients: Altered distribution and predictors using ROME III compared to ROME II criteria. *World Journal of Gastroenterology, 20*(43), 16293-16299. doi:10.3748/wjg.v20.i43.16293

Service Improvement Project

Reflective practice is key to promoting psychologically informed care. Are there ways in which reflective practice could be better integrated into Recovery Team working?

Holly Panting
HP442@bath.ac.uk
Clinical Psychologist in Training

Course Supervisor: Megan Wilkinson-Tough
Field Supervisors: Hilary Priestman and Laura Hill

August 2018

Word count: 4940

Target journal: Clinical Psychology and Psychotherapy

Reflective practice is key to promoting psychologically informed care. Are there ways in which reflective practice can be better integrated into Recovery Team working?

Abstract

Reflective practice is emphasised as important for healthcare professionals. However, research on the structure, content, utility and outcomes of reflective practice groups is limited. Existing research focuses primarily on inpatient staff experiences. This study aimed to examine the barriers and enablers to reflective practice groups for staff working in a specific Secondary Community Mental Health Recovery Team, with a view to making reflective practice sessions more accessible and useful. This mixed-methods study consisted of a focus group (n=6) and survey (n=19). Data were analysed using thematic analysis, and descriptive statistics. Following this, recommendations were made to the reflective practice facilitators to guide and improve delivery of reflective practice sessions. Staff felt reflective practice sessions were useful; however, the majority do not attend. Staff articulated some of the specific barriers to attending reflective practice sessions, including practical (e.g. time and frequency of sessions), cultural (e.g. prioritising reflective practice when busy), and emotional (e.g. anxiety about presenting cases). The practical barriers have been relatively accessible to change. However, cultural and emotional barriers are less accessible and may take longer to change. This is the first study to examine staff experiences of reflective practice in a community mental health setting. Results indicate that staff find reflective practice useful, which highlights the importance of supporting reflective practice in this setting. The findings of this study had a significant impact on the commitment to and engagement with reflective practice in this specific Team. However, further research on a wider scale is needed to examine the replicability of the findings.

Keywords: Reflective practice, Recovery Team working, psychologically informed services.

Reflective practice is key to promoting psychologically informed care. Are there ways in which reflective practice could be better integrated into Recovery Team working?

Reflective practice is defined as "intellectual and affective activities in which individuals engage to explore their experiences, in order to lead to new understandings and appreciations" (Boud, Keogh, & Walker, 2013). Most healthcare professions emphasise the importance of reflection on practice, and it has been argued that reflection and reflective practice are essential attributes of competent healthcare professionals (Mann, Gordon, & MacLeod, 2009). Indeed, it is now a requirement as part of nurses professional revalidation to demonstrate ongoing reflective practice (Nursing Midwifery Council, 2015).

There is a national agenda within the NHS to create psychologically informed care within mental health services (British Psychological Society, 2012). It has been suggested that reflective practice is key to developing psychologically informed services (British Psychological Society, 2012; Johnson & Hague, 2012). A literature review examining NHS inpatient reflective practice groups identified common aims for the groups, such as: creating a safe space to reflect on casework; containing anxiety and distress; making links between staff experiences, emotions and their interaction with patients; and developing a supportive and reflective team culture (Heneghan & Wright, 2010). Reflective practice is seen to be particularly important in teams who work with clients with a severe mental illness, such as Recovery Teams (British Psychological Society, 2007). It has been argued that reflective practice helps counter a tendency towards frenetic activity, rather than reflecting and staying with the service user, to better understand and respond to their experience (British Psychological Society, 2007).

Models of reflection

It has been acknowledged that though there are many models of reflection outlined in the literature, there are no models of reflective practice (Knight, 2015). The Gibbs Reflective Cycle model (1988; Figure 1) has been most often applied to reflective practice in the literature, and is considered easy to use in reflective practice sessions (Knight, 2015). Gibbs (1988) model is cyclical, and proposes that there are six stages of reflection. The aims of using the model are to: challenge assumptions; to

explore different ideas and approaches towards thinking and doing; to promote self-improvement; and to link practice and theory. The Gibbs model primarily aims to facilitate learning, and although this is one function of reflective practice, there are multiple other functions which are not supported by the model. As such, a criticism of the model is that though it offers some useful questions to structure individual reflection, it does not provide an appropriate structure for reflective practice groups (Finlay, 2008).

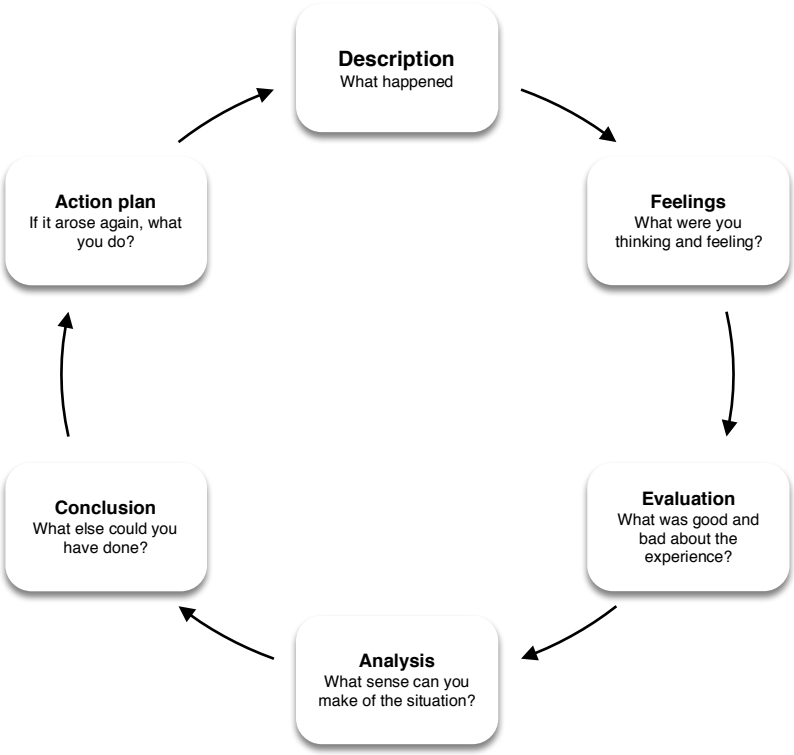

Figure 1. Gibbs (1988) Reflective Cycle model, adapted from Dye (2011).

The evidence base for reflective practice groups within the NHS

In the modern day NHS, reflective practice sessions are common: one survey found that between two and ten reflective practice staff support groups are being run in each Mental Health Trust in England (Kennard & Hartley, 2009). However, research on reflective practice groups in NHS mental health services is limited (Heneghan, Wright, & Watson, 2014), and the research that has been conducted is mostly qualitative with some methodological limitations. As such, there is a lack of evidence around the effectiveness of reflective practice groups. Moreover, there are no clear guidelines about what reflective staff groups should consist of, or how they should be facilitated (Heneghan et al., 2014). A detailed literature review identified a

lack of empirical evidence to underpin reflective staff groups (Heneghan & Wright, 2010). Although there is evidence of positive staff experiences of reflective practice (Berry, Barrowclough, & Wearden, 2009; Craven-Staines, Dexter-Smith, & Li, 2010; Shepherd & Rosebert, 2007; Summers, 2006; Wainwright & Bergin, 2010), there is limited to no research on the impact that reflective practice has on service user care. In addition, a search of the relevant databases has yielded a dearth of research which examines reflective practice in Community Mental Health teams, who are likely experience issues unique to the setting compared to inpatient staff.

Staff attendance at reflective practice groups

A key challenge for the success of reflective practice groups which has been frequently described in the literature is staff attendance (Shepherd & Rosebert, 2007). Despite reflective practice being emphasised by most professions as important and often essential, attendance at reflective practice groups is often voluntary. Several papers refer to difficulties in staff attending reflective practice groups, and suggest potential barriers such as busy working environments (Heneghan et al., 2014), motivation and engagement (Shepherd & Rosebert, 2007), and being unclear of the benefits of the group (Shepherd & Rosebert, 2007). Previous research has attempted to identify and define barriers to staff attendance at reflective practice groups. However, research has not yet examined reflective practice in community settings, and staff views on the barriers and enablers to their attendance at reflective practice sessions has not been investigated.

Service context and study aims

This research aims to use a mixed-methods approach to examine the barriers and also the enablers to reflective practice sessions for staff working in a specific Secondary Community Mental Health Recovery Team in the South West of England. A monthly reflective practice session was offered to all Recovery Team staff by Psychologists working alongside the Recovery Team when the research commenced. However, there were reported difficulties with low staff attendance at reflective practice sessions. This study aimed to investigate what could make reflective practice more accessible and useful for the Recovery Team staff, with a view to evaluating if changes made could improve staff attendance at these sessions.

This research had three main research objectives:

1. To conduct a qualitative focus group with Recovery Team staff to gather a rich description of their experiences of reflective practice, as well as an account of the barriers and enablers to attending sessions.
2. To develop and analyse a reflective practice survey to gather an anonymous and candid quantitative understanding of the barriers and enablers to reflective practice sessions, and to obtain diverse perspectives from a large proportion of the Recovery Team staff.
3. To generate recommendations of changes to implement to reflective practice sessions based on responses from the focus group and survey.

Methods

Participants

The Recovery Team participating in this research consisted of 20 staff members from different professional backgrounds: Occupational Therapists, Mental Health Nurses, Psychiatrists, Social Workers, and Support Workers. Six (30%) team members participated in the focus group and 19 (95%) completed the survey.

Procedure

A qualitative focus group was conducted with Recovery Team staff. Following this, a study-specific survey was designed and circulated. All members of the Recovery Team were informed about the research study, and participants were recruited through posters, emails, and information disseminated at team meetings. Participants were given relevant information about the study, and written informed consent to participate was obtained for both the focus group and questionnaire parts of the study. This research study was granted full ethical approval by the University of Bath Psychology Ethics Committee (reference number 17-038), and received local Research and Development approval to commence.

1. Qualitative focus group

The six staff who attended the focus group were from a variety of different professional disciplines, including nursing, social work, and support work. The focus group was facilitated by the first author who does not work in the Recovery Team, which allowed participants to be candid in their responses. The first author held a critical realist stance, which seeks to search for causation to help explain social events (Fletcher, 2017). Reflective diaries were used throughout the process of the research in order to create a transparent research 'trail' (Ortlipp, 2008). The focus group used a semi-structured interview schedule, and the questions asked were developed based on literature in the area (Appendix 1).

The focus group was video recorded, transcribed, and subsequently analysed thematically according to the guidelines of Braun and Clarke (2006). The transcript was coded for key ideas and recurrent themes using an inductive method, whereby themes emerged from the data itself (Patton, 1990). This resulted in a number of initial codes which were then collapsed into wider themes. Two of the staff who had attended the focus group were then consulted to ensure that the themes accurately captured what had been discussed.

2. Quantitative reflective practice survey

The themes derived from the focus group were utilised alongside relevant literature to design a quantitative survey about reflective practice (Appendix 3). The survey aimed to establish what staff perceived as useful about the current sessions on offer, what the enablers and barriers to attending the sessions were, and what could make reflective practice more accessible and useful. The survey was piloted with staff from a different Community Mental Health Team (n=3), before being circulated to Recovery Team staff. In total, 19 questionnaires were completed, giving a 95% response rate. Two questionnaires were returned partially completed; however, their responses were included in the results. The results of the survey were shared with Recovery Team staff and Team managers through a one-page summary sheet given out in Team meetings (Appendix 4).

3. Recommendation generation and implementation

The survey data were analysed and used alongside the focus group data to draw together recommendations to make to the reflective practice session facilitators. The implementation of these recommendations by the team was monitored.

Results

Focus group

Thematic analysis of the focus group data produced four key themes, each with related sub-themes (Figure 2).

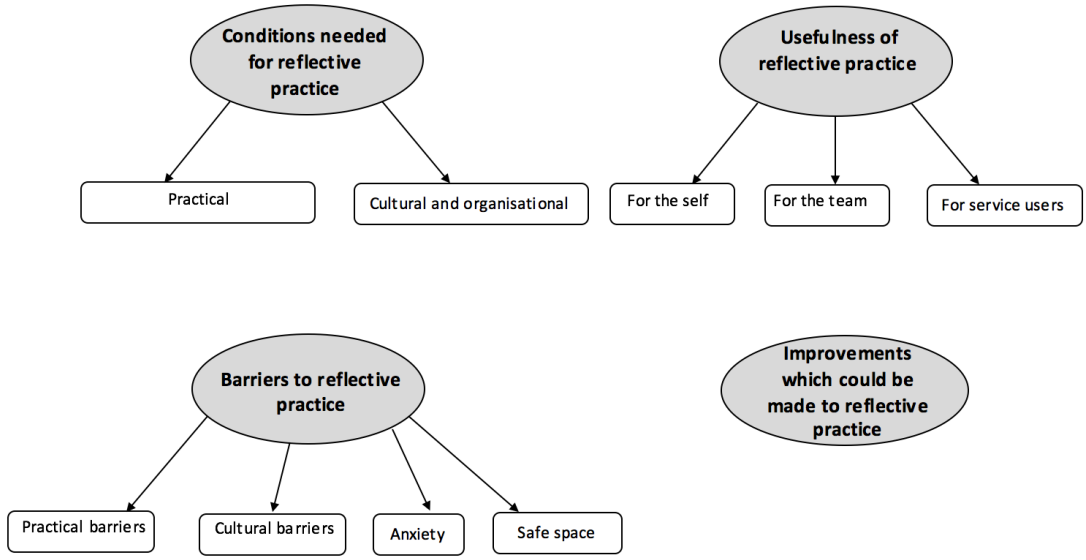

Figure 2. Thematic map demonstrating themes and sub-themes derived from the focus group.

Theme 1. Conditions needed for reflective practice

Participants discussed conditions that help to enable reflective practice sessions, and there were sub-themes of practical and cultural conditions. Though, this theme mostly arose from comments made by two participants. For the practical sub-theme, participants discussed aspects of reflective practice that are important, such as group membership, size, and boundaries.

"My thought was about… who's in it, how big the group is, um. Kind of how you, you manage those dynamics I suppose, and I think it's got to be a priority, I think it's really important" (P1)

Participants also suggested that reflective practice should be non-mandatory.

"So, it has to be, kind of, optional, people have to buy into it." (P1)

In addition, participants felt that having dedicated time for reflective practice was important.

"But it is good to have this protected space that is purely for that." (P3)

For the cultural sub-theme, participants talked about cultural factors that facilitate reflective practice, such as promotion by managers.

"And the promotion, promotion in our staff meetings from our managers, saying this is, this is what it's for, this is, you know, if you haven't been for a few weeks, get yourself down there." (P3)

Additionally, a team culture of respecting and valuing different perspectives and experience was also seen to be important.

"But it is very much about your experiences, not what band you're at, not what level you're at, but it's about your experience, and also about your knowledge in relation to your role as well." (P3)

Theme 2. Barriers to reflective practice

Participants discussed barriers to attending reflective practice sessions, and there were four sub-themes: practical, cultural, anxiety, and safe space. For the anxiety sub-theme, participants talked about worry about potential criticism, and worry about struggling with cases being seen as a weakness by others.

"There's a lot of people that are quite, not suspicious isn't the right word, but they're, they're anxious about sharing and they don't want to come because they feel they might be judged, or criticised. Um so they're, they will actively avoid it, maybe they get what they need in their own supervision, um but uh, I think that puts people off." (P3)

"I know, I know in the past… that people have fed back to me that they feel that it's, rather than being a critical appraisal, that it's a space where they feel criticised or that they, maybe their anxieties about whether they're doing the right thing, um or, that if they feel confident that they're doing the right thing, they don't want to sit in a space where they feel like they, maybe where they've felt scrutinised," (P1)

The sub-theme of safe space captures participants' comments about not feeling safe to contribute ideas in reflective practice, and not attending sessions as a protective measure by not having to share emotions and personal difficulties with others.

"I got the impression that partly not coming is kind of a protective measure of kind of, kind of not wanting their work looked at, or not necessarily wanting to share how they're, how they're feeling." (P1)

"A couple of years ago, team (sic) had reflective practice once a month so, and we all, we all went. Um, as for, there was a couple of instances where people actually got very emotional, and there were tears and things, which made some people uncomfortable and not want to go, because they're not into open displays of emotions and things, made them uncomfortable, and then… there was people that had personal problems outside work so they were feeling, feeling quite vulnerable so they didn't actually want to come." (P3)

For the practical barriers sub-theme, participants talked about things that get in the way of attending reflective practice sessions, such as not having time to attend, caseload demands, and knowing when sessions are.

"I think the reason why maybe they don't take it up is maybe because of time pressures, you know, there is just no time in the day." (P5)

"Yeah it is time, but it's caseload as well. How you manage your caseload as well." (P4)

"I have to say I got really confused with the dates, and so I went and it wasn't happening." (P5)

For the sub-theme of cultural barriers, participants' discussed aspects of the team culture, such as self-care not being prioritized.

"I think in this profession we're here caring for others, so caring for ourselves sometimes takes a bit of a backseat." (P1)

Participants also discussed an historical team culture of difficulties around the confidentiality of what has been shared in the group.

"And there's, uh, there has been a culture of oh if you say something and it doesn't stay where it is, and you'll talk about it later, and I mean I'm talking very historically, but it does stick with some people." (P3)

Theme 3. Usefulness of reflective practice

For the theme of usefulness of reflective practice, there were sub-themes of usefulness for the self, for service users and for the team. However, most participants talked about the benefits of reflective practice for themselves and the team, and there was less discussion about the impact for service users. For the usefulness for the self sub-theme, participants discussed the perceived benefits of reflective practice for themselves.

"I would tend to prioritise it because I don't think that I can care for others if I'm not caring for myself, if I'm stressed." (P1)

"Because it's something for us, isn't it as well. And if we're ok patients will be ok, and that's the way I see it." (P4)

For the sub-theme of usefulness of reflective practice for service users, participants discussed benefit for the people that they work with.

"It's about trying to do the best job we can do for the service users as well." (P5)

For the sub-theme of usefulness of reflective practice for the team, participants talked about team benefits.

"Especially when you're sharing with other professionals, so, other disciplines, then you get, you get other perspectives that you might not have, sort of thought of." (P2)

Theme 4. Improvements which could be made to sessions

For the final theme of improvements which could be made to reflective practice sessions, participants made suggestions such as having set times and dates for sessions, more information about the purpose of reflective practice, and for continued promotion by Team managers.

"Set times I think would, would be, make it a lot easier for us to use." (P3)

"I think it's hard in terms of getting other people to it. I think promotion, you're right, that kind of also, kind of helping people to understand what it is and what it's for." (P1)

Participants also suggested that there could be themed reflective practice sessions around common difficulties that come up within the team.

"Maybe every so often rather than a reflective practice, come to a reflective practice, but then spend the first part of the session talking about something

(sic), because this topic keeps coming up in our sessions… come in with like a teaching." (P3)

Survey responses

In total, 19 participants completed the survey and their responses are summarised below.

The purpose of reflective practice sessions

When asked about the purpose of reflective practice, the most common responses given by participants were: supporting other colleagues (n=12), helping me/the team work with complex cases (n=11), improving service user care (n=10), developing a greater understanding of service users (n=10), and helping me/the team when it feels stuck working with a service user (n=10). Many participants reported that they hadn't received training or guidance around reflective practice, and moreover that it would be helpful to have more information (Figure 3).

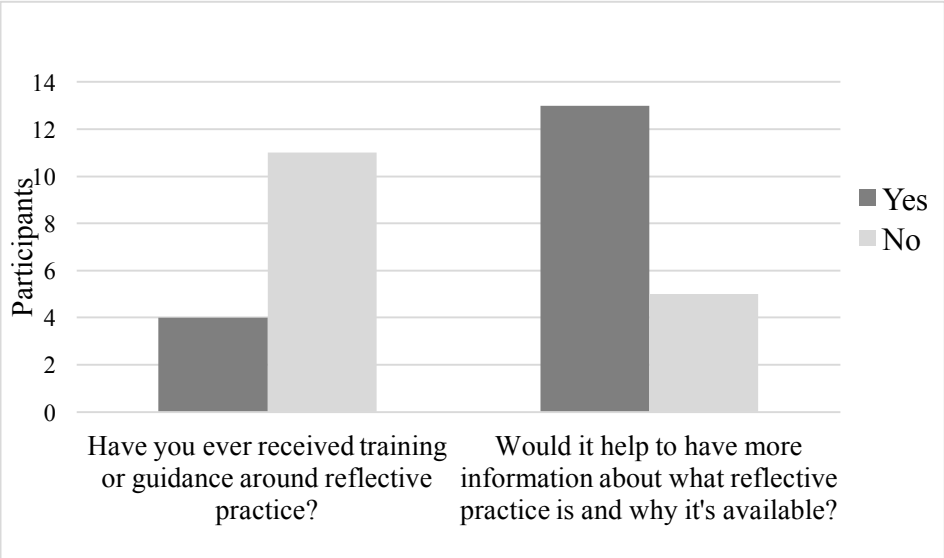

Figure 3. Survey responses around understanding the purpose of reflective practice.

Attendance and barriers to attending reflective practice sessions

The majority of participants (85%) reported that reflective practice sessions were available for them to attend, however, nearly 70% reported that they do not currently attend (Figure 4).

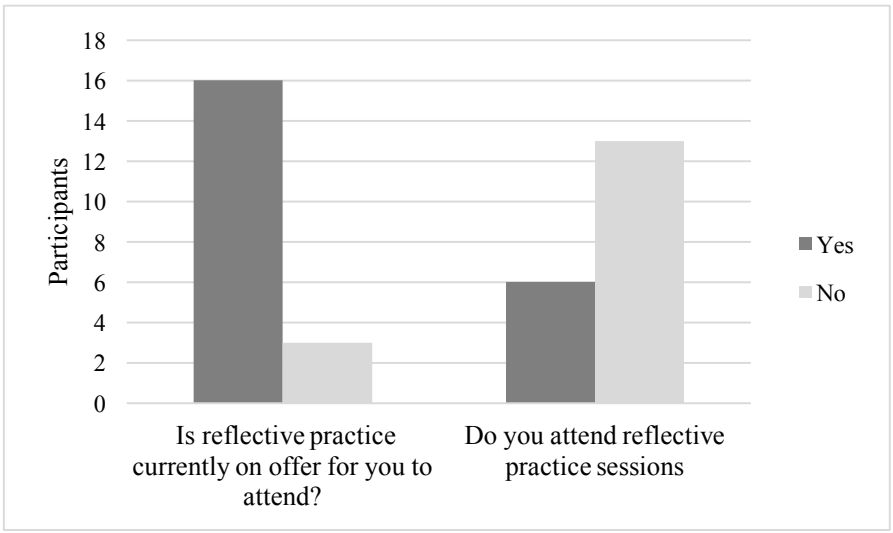

Figure 4. Participants' knowledge of currently offered sessions and their actual attendance at reflective practice sessions.

Nearly 50% of participants reported that they had been encouraged to attend reflective practice for their casework (n=9). Participants reported that reflective practice is seen as important by Team Managers (n=15), colleagues (n=15), and the Trust (n=11). Everyone who completed the questionnaire said that they have the opportunity to reflect on their cases somewhere (Figure 5).

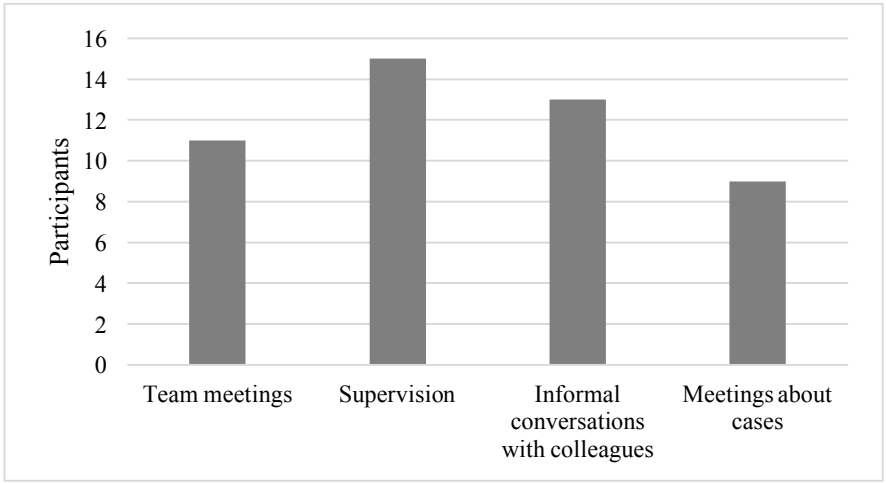

Figure 5. Other opportunities that participants have to reflect on casework.

Participants reported the barriers to attending reflective practice sessions (Figure 6), and 95% of respondents reported that time was a barrier to attending

sessions. Other barriers reported by over 25% of respondents related to issues with timing of sessions and knowing when sessions are. Psychological barriers, such as concerns about being judged or criticised, were less frequently reported.

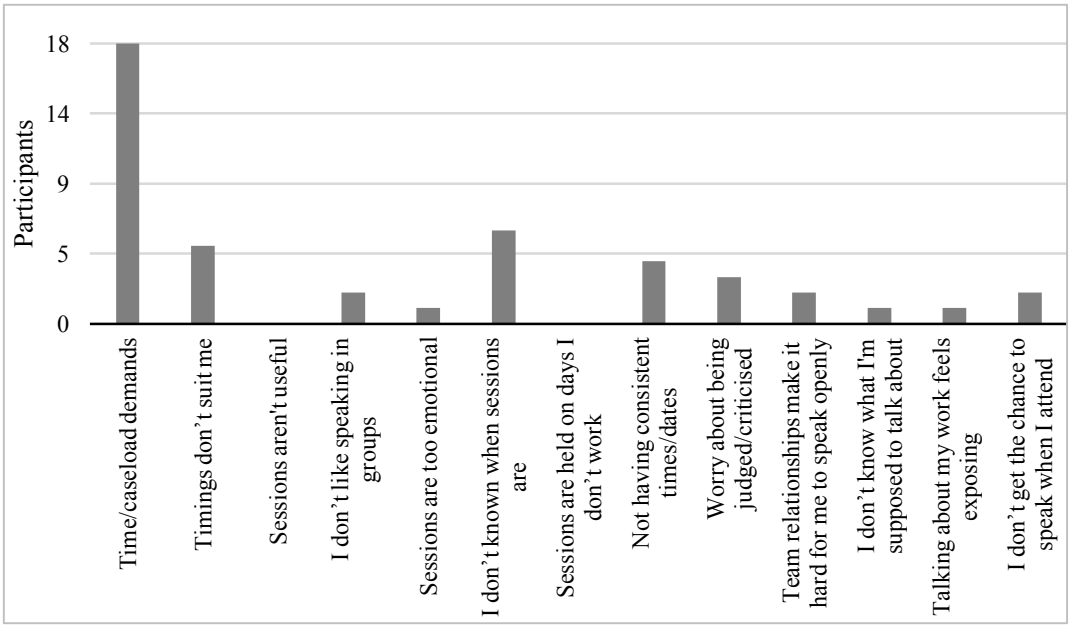

Figure 6. Barriers to attending reflective practice sessions reported by participants.

Improvements that could be made to reflective practice sessions

Participants reported on improvements that could be made to make the reflective practice group feel safer (Figure 7*).* Over 45% of participants reported that they would feel safer sharing if the group size was small, and over 30% reported that having clear boundaries for the group would be helpful. However, 35% of participants indicated that they do not feel that changes need to be made to reflective practice sessions (n=7). Qualitative comments that were made by participants in open questions on the survey included: promotion and support by managers, promotion by the Trust by including reflective practice in induction and training, and having themes or topics for sessions.

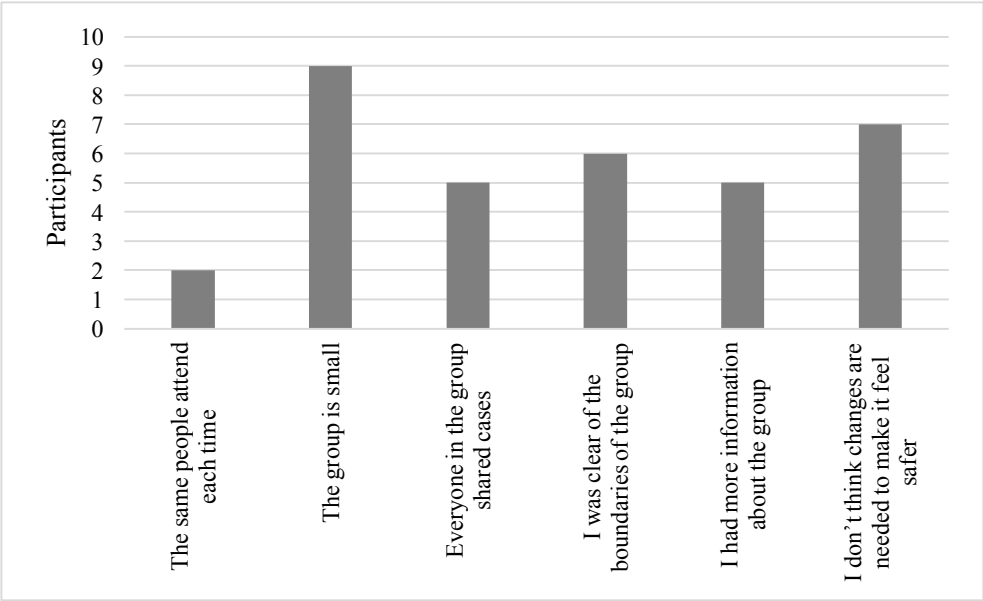

Figure 7. Factors that participants reported would make it feel safer to share.

Recommendations made to Clinical Psychologist facilitators

Based on the focus group and survey data and a review of pertinent literature in this area, recommendations were made to the Recovery Team psychologists who facilitate reflective practice sessions (Table 1).

Table 1. Recommendations made to the Recovery Team reflective practice facilitators and their rationale, and service response

Recommendations	Rationale	Service response
1. To provide information about reflective practice to Recovery Team staff in an accessible format.	The majority of staff stated that it would be helpful to have more information about reflective practice. Developing staff knowledge and understanding of reflective practice is important (Heneghan et al., 2014), particularly around the structure, boundaries and expectations for sessions (British Psychological Society, 2007).	Information about reflective practice was shared with staff in the format of a Service Mission Statement about reflective practice. Psychologists facilitated a Team Away Day session, which included information about the purpose, aims and expectations of reflective practice. In addition, an experiential exercise with staff established the structure, boundaries, and parameters of future sessions.
2. To have set times and days for sessions that are agreed in advance, accommodate staff availability, and are clearly advertised.	Many staff stated that they do not know when reflective practice sessions are, and some staff reported that the times of sessions do not suit them. Staff also indicated that not consistent times/dates for sessions is a barrier to attending.	Facilitators established the times/days when staff are available to attend sessions via a poll, and used this information to plan two additional reflective practice sessions per week (three sessions per week in total). Adverts for reflective practice sessions are sent to staff via emails, and in team meetings.
3. To meet with Team Managers to discuss reflective practice. Consider whether it would be helpful to include reflective practice on the Team meeting agenda, and think about additional ways to promote attendance within the Team.	Staff commented that manager promotion of reflective practice is important, and acknowledged the need for sessions to be supported by managers as protected time. Literature highlights the importance of reflective practice groups having the support of managers, particularly to overcome the barrier of caseload demands (Heneghan et al., 2014).	Meetings were held with Team Managers, who agreed to continue to promote attendance at reflective practice sessions in team meetings and individual supervision. Reflective practice is now recorded on staff supervision logs, as part of a Trust-wide updated Supervision Policy. In addition, it was agreed to develop and share a Service Mission Statement about reflective practice, and for reflective practice to be on the Team Away Day agenda.

Recommendations	Rationale	Service response
4. To link with other professionals within the Trust to raise the profile of reflective practice and share examples of good practice.	Staff commented that it would be useful for reflective practice to be promoted more by the Trust. Guidance around managing risk in Mental Health Services highlights the importance of organisations having a culture that embraces reflective practice (Department of Health, 2007). As such, a Trust-wide agenda around developing and embedding reflective practice as an integral part of client care is essential. The Trust has a new Supervision Policy, which embeds regular reflective practice into clinical casework, and offers ways to promote and monitor clinician engagement with this.	The psychologist facilitators have continued to expand the membership and attendance at a Trust-wide Reflective Practice Special Interest Group (SPIG). Professionals working in other services presented examples of reflective practice in their workplace at a SPIG Communication Event. The Trust Induction Team were consulted with to negotiate information about reflective practice being included in new staff induction training. There is ongoing consultation with Trust Communication department around the possibility of developing a video about reflective practice to include on the Trust website.

Discussion

Overview

This study used a mixed-methods approach to examine the barriers and enablers to Recovery Team staff attendance at reflective practice sessions. This study further aimed to investigate what could make reflective practice sessions more accessible and useful for Recovery Team staff. The findings from the focus group and survey indicate that the Recovery Team staff who participated in this study are aware that reflective practice sessions are available for them to attend, and that they feel the sessions are useful. Despite this, the majority of staff reported that they do not currently attend reflective practice sessions. Following the recommendations based on the results of the study, reflective practice facilitators made several changes to the provision of sessions for staff. Most noticeably, the number of reflective practice sessions offered per week tripled. In addition, following consultation with Team managers, a Service Mission Statement was created, demonstrating a service-level commitment to reflective practice.

Previous research

The findings reiterate comments made in the literature surrounding staff attendance being a key challenge for reflective practice groups (Shepherd & Rosebert, 2007). Furthermore, the findings highlight the importance of research examining the barriers to attending reflective practice sessions, and factors which might help to enable attendance. A number of barriers that emerged from the findings of this study were practical, such as knowing when sessions are, being able to attend sessions, and having more information about reflective practice. These barriers have been previously documented in the literature (Heneghan et al., 2014), and are relatively amenable to change as demonstrated by the service response to the recommendations made in this study.

Other barriers that emerged from this study are harder to change, such as time or caseload demands, and the culture within the team. In this study, the reflective practice facilitators attempted to address time and caseload demands following recommendations around involving Team Managers to support and promote reflective practice. The importance of support from managers has been discussed elsewhere (Heneghan et al.,

2014), and forms part of a wider shift towards psychologically informed care and services (British Psychological Society, 2012; Johnson & Hague, 2012).

In discussing some of cultural barriers to attending reflective practice, the staff in this study discussed anxiety, and worry about being judged or criticised. Though not a surprising finding, this has not been documented in previous literature, and our study is, to our knowledge, the first one where staff have themselves reported these aspects of team culture as a barrier to reflective practice attendance. Though, the quantitative survey data in this study indicated that this barrier was not as global a concern as the practical restraints. However, further research could focus on understanding how these aspects of team culture act as a barrier to attending reflective practice. Embedding reflective practice within the culture of the service was discussed by the Recovery Team staff in this study. More research is also needed to understand cultural factors that promote attendance at reflective practice sessions. It has been argued that good staff support and management create a positive culture, which in turn has a direct impact on service user care (Dixon-Woods, Baker, Charles, Dawson, Jerzembek, Martin, McCarthy, McKee, Minion, & Ozieranski, 2013). For example, recent research has documented that organisations which support staff psychologically (e.g., through reflective practice) have better service user and staff outcomes (West, Eckert, Collins, & Chowla, 2017).

To our knowledge, this is the first study to examine staff experiences of reflective practice in the context of a Secondary Community Mental Health Recovery Team. Previous literature has focused on the utility of reflective practice groups in inpatient settings, however, it could be argued that reflective practice is equally, if not more, important for community staff who often work alone with complex cases.

Future research directions

Though it is reported that reflective practice groups are common in NHS working (Kennard & Hartley, 2009), there is a lack of evidence surrounding the efficacy of reflective practice groups, both in terms of outcomes for staff and for service users. Previous research has documented the benefits of reflective practice for staff, for example, in managing difficult feelings, increasing resilience, and managing stress (Kurtz, 2005; Thorndycraft & McCabe, 2008; Trowell, Davids, Miles, Shmueli, & Paton,

2008). However, research has focused less on the impact on service user outcomes associated with staff attendance at reflective practice. In this study, participants focused more on the benefits of reflective practice for themselves and the team, and less on the subsequent impact for service users. This is interesting given that one of the primary purposes of reflective practice sessions is to reflect on, and subsequently improve service user care. Despite this, assessment of changes in service user care and outcomes following staff reflection has not been examined in the literature, and one reason for this might be challenges in collecting and analysing this data. For example, it is likely to be difficult to extract the relevant data from NHS data systems, and in addition it is difficult to use this data to draw causal conclusions around outcomes. Furthermore, reflective practice is not necessarily a linear process, in that staff reflection surrounding one service user may lead to changes in staff approach (and associated outcomes) to other service users. However, future research that examines service user care and outcomes subsequently to reflective practice sessions is needed in order to contribute to the evidence base surrounding the utility of reflective practice.

There are broader issues with the evidence base for reflective practice groups in that they lack theoretical underpinning (Heneghan & Wright, 2010). Most reflective practice groups draw on models of individual reflection, and a systematic review of reflective practice found that a variety of different individual reflection models are used (Mann et al., 2009). Mann et al. (2009) organized the types of reflection models into two main dimensions: an iterative dimension whereby the process of reflection is triggered by an experience (e.g. Boud et al., 2013; Schon, 1987), and a vertical dimension whereby there are different levels and depths of reflection on experience (Dewey, 1993; Moon, 2013). However, the application of individual reflection models to reflective practice groups is challenging (Finlay, 2008), and it has been suggested that group reflection is different to individual reflection, in that it provides richer insights (Williams & Walker, 2003). The lack of theoretical basis for reflective practice groups means that there is a vast variability in the structure and delivery of groups across different services, and this presents challenges to developing research in this area. Future research is needed to systematically evaluate the application of individual models of reflection to reflective

practice groups, and to develop theoretical models of group reflection and reflective practice.

Strengths and limitations

This study employed a mixed-methods approach which has strengths in that it allowed for both a breadth and depth of understanding (Powell, Mihalas, Onwuegbuzie, Suldo, & Daley, 2008) around the barriers and enablers to reflective practice sessions. The mixed-methods approach both allowed the participants in this study to give candid and anonymous responses, and also allowed for a depth of understanding around some of the pertinent factors. Overall the findings of this study expand on the existing literature on reflective practice, however, there are limitations in the study design. Firstly, this study only examined the reflective practice experiences of one Recovery Team and though there was a good rate of participation within the team, the findings are not necessarily applicable to other teams. The qualitative themes emerging from this study are based on a small number of participants, and whilst useful in making improvements within the specific team, there are limitations on the extent to which these themes can be generalised. Moreover, one of the themes emerging from the focus group (conditions needed for reflective practice) emerged from comments made by two participants, which may reflect that not all participants shared these views, or that other participants did not feel safe to share their views on this. As such, caution must be applied in interpreting the qualitative findings from the focus group as the themes emerging may not represent all participants views, and the results are therefore not generalisable. In addition, the findings relate to the reflective practice sessions provided by the facilitators in this team, and as discussed, there are wide variations in the structure and delivery of reflective practice groups. As such, this limits the application of the findings to other reflective practice groups.

Secondly, this study did not evaluate the outcome of the recommendations made on staff attendance and perceptions of the usefulness of reflective practice sessions. Future research is needed to examine outcomes in relation to improved attendance at reflective practice sessions, and indeed whether improved attendance affects staff and service user outcomes. Thirdly, it was beyond the scope of this study to explore the

experiences or views of the reflective practice session facilitators or Recovery Team managers. However, other stakeholder's opinions of reflective practice sessions are important, because these individuals are likely to be involved in service design and delivery, and research highlights the importance of developing psychologically informed services.

Conclusions

There is a national agenda to create psychologically informed services, and recent research highlights the benefits of supporting healthcare staff psychologically. Reflective practice is one method of supporting staff in the work that they do with service users, whilst also supporting staff wellbeing and improving skills. This is the first research to examine the barriers and enablers to Community Mental Health Team staff attending reflective practice sessions. The barriers to attending reflective practice sessions are numerous, complex and varied. Staff report on the usefulness of attending reflective practice sessions for themselves and for the wider team, however, they reported less on the subsequent benefits of reflective practice for service users. This is interesting given that one of the primary aims of reflective practice is to improve service user care, and further research is needed to examine the impact of staff reflection on service user care and outcomes. Research is this area is hampered by the lack of theoretical underpinning of reflective practice groups, and the subsequent lack of clarity around their definition, purpose and structure.

Key practitioner messages:

- There is a national agenda to develop psychologically informed services, and research had shown the benefits of supporting staff in their work. Reflective practice supports staff wellbeing and skill development, and improves service user care.
- Current research around the theoretical underpinning and efficacy of reflective practice groups is limited. However, one of the key challenges described in the literature is staff attendance at reflective practice groups.

- This study found that the barriers to attending reflective practice sessions are numerous, complex and varied.
- Practical barriers (e.g. lack of time) were relatively accessible to change. Whereas cultural barriers (e.g. prioritising reflective practice when busy), and emotional barriers (e.g. anxiety about presenting cases) are less accessible and may take longer to change.
- Research is this area is hampered by the lack of theoretical underpinning of reflective practice groups, and the subsequent lack of clarity around their definition, purpose and structure.

References

Berry, K., Barrowclough, C., & Wearden, A. (2009). A Pilot Study Investigating the Use of Psychological Formulations to Modify Psychiatric Staff Perceptions of Service Users with Psychosis. *Behavioural and Cognitive Psychotherapy, 37*(1), 39-48. doi:10.1017/S1352465808005018

Boud, D., Keogh, R., & Walker, D. (2013). *Reflection: Turning experience into learning*: Routledge.

Braun, V., & Clarke, V. (2006). Using thematic analysis in psychology. *Qualitative Research in Psychology, 3*(2), 77-101.

British Psychological Society. (2007). *New ways of working for applied psychologists in health and social care: working psychologically in teams.* Leicester: British Psychological Society.

British Psychological Society. (2012). *Commissioning and delivering clinical psychology in acute adult mental health care: guidance for commissioners, service managers, psychology managers and practitioners*. London: British Psychological Society, Division of Clinical Psychology.

Craven-Staines, S., Dexter-Smith, S., & Li, K. (2010). Integrating psychological formulations into older people's services: Staff perceptions of formulation meetings. *PSIGE Newsletter, 112*, 12-22.

Department of Health. (2007). *Best Practice in Managing Risk*. London.

Dewey, J. (1993). *How we think: A restatement of the relation of reflective thinking to the educative process.* Lexington, MA: Heath.

Dixon-Woods, M., Baker, R., Charles, K., Dawson, J., Jerzembek, G., Martin, G., . . . Ozieranski, P. (2013). Culture and behaviour in the English National Health Service: overview of lessons from a large multimethod study. *BMJ Quality and Safety*, bmjqs-2013-001947.

Dye, V. (2011). Reflection, Reflection, Reflection. I'm thinking all the time, why do I need a theory or model of reflection? In D. McGregor & L. Cartwright (Eds.), *Developing Reflective Practice: A guide for beginning teachers* (pp. 217-234). Maidenhead: McGraw-Hill Education.

Finlay, L. (2008). Reflecting on reflective practice. *PBPL paper, 52*, 1-27.

Fletcher, A. J. (2017). Applying critical realism in qualitative research: methodology meets method. *International Journal of Social Research Methodology, 20*(2), 181-194.

Gibbs, G. (1988). *Learning by Doing. A guide to teaching and learning methods.* London: Further Education Unit.

Heneghan, C., & Wright, J. (2010). *Noun or Verb? Reflective practice groups in inpatient mental health services: A review of the literature*. Unpublished manuscript.

Heneghan, C., Wright, J., & Watson, G. (2014). Clinical Psychologists' Experiences of Reflective Staff Groups in Inpatient Psychiatric Settings: A Mixed Methods Study. *Clinical Psychology & Psychotherapy, 21*(4), 324-340. doi:10.1002/cpp.1834

Johnson, R., & Hague, R. (2012). Communities once and future. In R. Johnson & R. Hague (Eds.), *Complex trauma and its effects: Perspectives on creating an environment for recovery*. Sussex: Pavilion Professional.

Kennard, D., & Hartley, P. (2009). Do staff support groups work? In P. Hartley & D. Kennard (Eds.), *Staff support groups in the helping professions: Principles, practice and pitfalls.* East Sussex: Routledge.

Knight, S. (2015). Realising the benefits of reflective practice. *Nursing Times, 111*(23), 17-19.

Kurtz, A. (2005). The needs of staff who care for people with a diagnosis of personality disorder who are considered a risk to others. *The Journal of Forensic Psychiatry & Psychology, 16*(2), 399-422. doi:10.1080/14789940500098475

Mann, K., Gordon, J., & MacLeod, A. (2009). Reflection and reflective practice in health professions education: a systematic review. *Advances in Health Sciences Education, 14*(4), 595-621.

Moon, J. A. (2013). *A handbook of reflective and experiential learning: Theory and practice*: Routledge.

Nursing Midwifery Council. (2015). The code: professional standards of practice and behaviour for nurses and midwives. *London: NMC*.

Ortlipp, M. (2008). Keeping and using reflective journals in the qualitative research process. *The Qualitative Report, 13*(4), 695-705.

Patton, M. Q. (1990). *Qualitative evaluation and research methods*: SAGE Publications, inc.

Powell, H., Mihalas, S., Onwuegbuzie, A. J., Suldo, S., & Daley, C. E. (2008). Mixed methods research in school psychology: A mixed methods investigation of trends in the literature. *Psychology in the Schools, 45*(4), 291-309.

Schon, D. A. (1987). Educating the reflective practitioner: Jossey-Bass Publishers. San Francisco.

Shepherd, E., & Rosebert, C. (2007). Setting up and evaluating a reflective practice group. *Clinical Psychology Forum, 172*, 31-34.

Summers, A. (2006). Psychological formulations in psychiatric care: Staff views on their impact. *Psychiatric Bulletin, 30*(9), 341-343. doi:10.1192/pb.30.9.341

Thorndycraft, B., & McCabe, J. (2008). The challenge of working with staff groups in the caring professions: the importance of the 'team development and reflective practice group.'. *British Journal of Psychotherapy, 24*(2), 167-183. doi:10.1111/j.1752-0118.2008.00075.x

Trowell, J., Davids, Z., Miles, G., Shmueli, A., & Paton, A. (2008). Developing healthy mental health professionals: what can we learn from trainees? *Infant Observation, 11*(3), 333-343. doi:10.1080/13698030802553583

Wainwright, N., & Bergin, L. (2010). Introducing psychological formulations in an acute older people‟s inpatient mental health ward: A service evaluation. *PSIGE Newsletter, 112*, 38-45.

West, M., Eckert, R., Collins, B., & Chowla, R. (2017). *Caring to change: How compassionate leadership can stimulate innovation in health care*. London: The King's Fund.

Williams, B., & Walker, L. (2003). Facilitating perception and imagination in generating change through reflective practice groups. *Nurse Education Today, 23*(2), 131-137.

Critical Review of the Literature

A systematic review examining whether Compassion Focused Therapy interventions are associated with changes in the theoretical components of the model: the threat, soothing and drive systems.

Holly Panting
HP442@bath.ac.uk
Clinical Psychologist in Training

Course Supervisor: Dr Elizabeth Marks

August 2018

Word count: 7504

Target journal: Clinical Psychology and Psychotherapy

A systematic review examining whether Compassion Focused Therapy interventions are associated with changes in the theoretical components of the model: the threat, soothing and drive systems.

Abstract

There is increasing evidence that Compassion Focused Therapy (CFT) is an effective intervention, with studies so far reporting positive clinical outcomes across a range of conditions. However, it is not yet clear whether CFT interventions are associated with the changes predicted by the CFT model; the balancing of the three emotion regulation systems (threat, drive and soothing). This systematic review aimed to assess the associations between CFT interventions and changes in these specific components of the model. A systematic search of electronic databases (PubMed, APA PsychNET, Web of Science, and Embase) was conducted and identified 14062 papers. Following screening against inclusion and exclusion criteria,16 studies were included, including four RCTs. Quality assessment was conducted using the Cochrane Risk of Bias tool (for RCTs) and the Newcastle Ottawa scale (for non-RCTs), and showed that the studies were generally of poor quality. In general, CFT interventions were associated with increases in self-compassion, and concomitant decreases in shame, self-criticism, and anxiety and depression. However, outcomes reported for the soothing, threat, and drive system responses were limited. Understanding the association between CFT interventions and these systems is hampered by a lack of controlled studies, and the variability of the outcome measures reported. Future research is required to develop and validate outcome measures for components in each of the emotion regulation systems posited by the model. Further controlled trials of CFT interventions should report outcome measures related to all aspects of the CFT model.

Keywords: Compassion focused therapy, compassion, compassionate mind training, CFT, CMT.

A systematic review examining whether Compassion Focused Therapy interventions are associated with changes in the theoretical components of the model: the threat, soothing and drive systems.

Compassion is defined as "a sensitivity to suffering in self and others with a commitment to try and alleviate and prevent it" (Gilbert, Catarino, Duarte, Matos, Kolts, & Stubbs, 2017). Compassion has long been seen as key to wellbeing and happiness in Eastern cultures (Davidson & Harrington, 2001), and is now gaining momentum in the Western world (Irons, 2014). Compassion plays a role in psychological wellbeing more generally (Davidson & Harrington, 2002), and research has demonstrated associations between low self-compassion and susceptibility to mental health problems (Neff, 2003a). Interventions aiming to increase compassion may be associated with reduced psychopathology (Gilbert, 2014), and researchers have explored benefits associated with cultivating compassion in clinical and non-clinical populations (Fehr, Sprecher, & Underwood, 2009; Germer & Siegel, 2012; Gilbert, 2009b; Gilbert, 2010).

Compassion focused therapy interventions

Compassion Focused Therapy (CFT) was developed by Paul Gilbert (Gilbert, 2009b), as a transdiagnostic therapeutic intervention integrating Cognitive Behavioural Therapy (CBT) with techniques related to compassion. CFT is based on converging evidence from neuroscience, evolutionary theory, and social psychology (Gilbert, 2010). Initial clinical targets were chronic and complex mental health problems linked to high levels of shame and self-criticism (Gilbert, 2009b). Shame, in particular, is vulnerability factor for a range of mental health problems (Gilbert, 1997, 2003; Gilligan, 2003). Additionally, highly self-critical people tend to do less well in traditional therapeutic interventions (e.g. CBT; Rector, Bagby, Segal, Joffe, & Levitt, 2000). High levels of shame and self-criticism are important because they likely impede feelings of safeness (Gilbert, 2009b). Initial CFT intervention studies have shown promising results (Gilbert & Procter, 2006; Mayhew & Gilbert, 2008), however, there are few rigorous, randomized controlled studies into CFT.

CFT theory

CFT theory suggests that there are three types of emotion regulation systems (Figure 1), which evolved to enable us to survive as humans: the threat, drive system and soothing systems (Depue & Morrone-Strupinsky, 2005). These systems interact and a healthy state depends upon these being in balance.

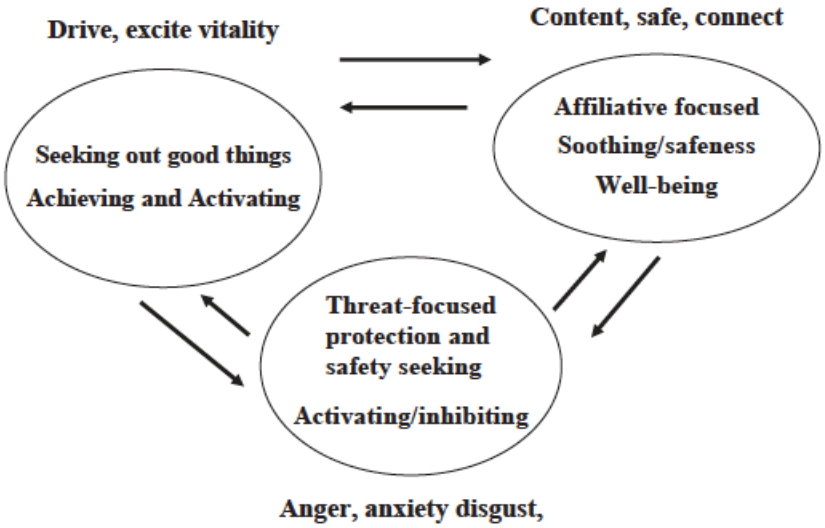

Figure 1. The interaction between the three emotion-regulation systems. First published in Gilbert (2009a), permission to reproduce from Little Brown Book group.

Threat System

The threat system detects and responds to threats in our environment. When activated, the brain's limbic threat-defence system is stimulated (the flight/fight system; LeDoux, 1998). Two key defence strategies occur: (1) active strategies including aggression, avoidance, flight, self-criticism, and shame; (2) inhibitory defences including freezing, fainting, being cut-off, submissive, or appeasing (Gilbert, 2005). The threat system can be activated by both physical environmental threats and perceived internal and social threats, including thoughts and feelings (e.g., around self-identity, being liked, and avoiding rejection), and even predictions of what might happen (Gilbert, 2005). The activated threat system alerts us to react to threat by increasing emotions like anxiety,

anger or disgust (active strategies), or depression (inhibitory strategy). The threat system is generally seen as overactive in psychopathology (Gilbert, 2009b), as it can be sensitive and easily conditioned, adopting a 'better safe than sorry' approach to survival (Gilbert, 1998).

CFT was specifically developed to reduce threats of shame and self-criticism, and most research has focused on this part of the model. The CFT model proposes that some shame is adaptive, and evolved because of the relationship between positive regard, attachment, and group belonging (Gilbert, 2002). However, shame can be a negative emotion, associated with the belief that the self will be judged as unattractive by others, rejected or disapproved of (Gilbert, 2000). Shame can be subtyped into internal shame (originating internally, involving negative self-evaluation), and external shame (originating externally involving awareness that others view the self negatively; Gilbert & Andrews, 1998). Different subtypes of shame are differently related to psychopathology, e.g., external shame has a significantly stronger association with depressive symptoms than internal shame (Thibodeau, Kim, & Jorgensen, 2011).

Self-criticism, is often correlated with shame, and refers to critical thoughts and feelings within the self (Gilbert, 2009a). Again, self-criticism has different subtypes (e.g., feeling inadequate, self-hatred), and functions (e.g. preventing errors, preventing laziness, self-correction, and warning about potential future threat; Gilbert, 2010). The apparent utility of self-criticism can make it difficult for individuals to change this pattern of responding (Rockliff, Gilbert, McEwan, Lightman, & Glover, 2008), and can lead to 'fears of compassion,' or avoidance of compassion (to self, to others, and from others; Gilbert, McEwan, Matos, & Rivis, 2011), sometimes hindering therapeutic progression (Gilbert, 2010). Self-criticism and fears of compassion should be recognised since self-critics struggle with developing self-compassion (Gilbert & Procter, 2006), and self-reassurance (Longe, Maratos, Gilbert, Evans, Volker, Rockliff, & Rippon, 2010). Compassion in CFT offers a new way of relating to the self more compassionately (e.g., self-soothing and reassurance) whilst meeting the same functions of self-criticism (e.g. the ability to self-sooth and self-reassure; Gilbert, 2010).

Drive System

The drive system, underpinning motivation to survive and thrive, is associated with positive feelings of pleasure, achievement and excitement (Gilbert, 2010), and is also linked to the sympathetic nervous system (Gilbert, 2014). When balanced with the threat and soothing system, drive guides one towards important life goals (Gilbert, 2010). If unbalanced, the drive system can be under or over-activated, which will 'block' goal achievement and leads onto activation of the threat system (Gilbert, 2010). The drive system is much less well defined and researched than the threat system.

Soothing System

The soothing system supports feelings of being safe, calm, and content. It underpins the ability to form attachment relationships with others. The activated soothing system inhibits defensive emotions (e.g., anxiety, anger, sadness) and behaviours (e.g. aggression, flight; Gilbert, 2005). The calm and contentment enabled by the soothing system makes it central to wellbeing (Gilbert, 2010). The multi-faceted construct of self- and other-compassion is integral to the soothing system. CFT thus aims to enhance the soothing system by enabling people to give and receive compassion (Gilbert, 2010). The specifics of this soothing system are again less well defined and researched than the threat system.

Balancing the three emotion regulation systems

The interaction and development of the three systems is shaped life experiences (particularly early life; Gilbert, 2014), and individual's neural pathways associated with each system are differentially developed (Gilbert, 2005). Some individuals may only have one response to unwanted thoughts, emotions and conflicts: activation of threat system defenses (e.g. Bates, 2005). Other individuals may have more developed soothing systems allowing for more adaptive and compassionate responses. CFT is proposed to work by improving access to compassion as an alternative response to threat (Bates, 2005).

Compassion is a skill that can be learnt (Gilbert, 2009b), but since all three emotion regulation systems interact, CFT aims to balance these systems, not simply to

increase compassion (Gilbert, 2010). If CFT interventions do balance the emotion regulation systems, one would hypothesise that there should be changes in all three systems: soothing (e.g. compassion; Gilbert, Clarke, Hempel, Miles, & Irons, 2004; Harman & Lee, 2010; Neff, Kirkpatrick, & Rude, 2007); threat (e.g. shame and self-criticism; Gilbert & Procter, 2006); and drive (e.g., motivation, pleasure, seeking, and acquiring). However, research is yet to demonstrate whether CFT interventions do actually result in this purported balancing act.

Existing reviews of CFT interventions

An earlier systematic review of outcomes (Leaviss & Uttley, 2015), found that CFT interventions may be more effective than no treatment, or as effective as treatment as usual (TAU) in treating mental health problems, particularly if self-criticism is high. That comprehensive review of studies up to 2013 focused on psychotherapeutic outcomes, and not CFT constructs. It did not exclude self-help or isolated interventions (e.g., imagery), but identified the need to distinguish between these and more substantive CFT interventions (Leaviss & Uttley, 2015). A recent narrative review reported that CFT is an effective intervention for mental health problems when combined with approaches such as CBT (Beaumont & Hollins Martin, 2015). It again focused solely on clinical outcomes, and looked at combined intervention effects (e.g., CFT plus CBT), so could not attribute changes directly to CFT.

Aims of the current review

Evidence that CFT benefits mental health and wellbeing is growing, but it is not clear whether CFT interventions are associated with changes in balancing the three emotion regulation systems as predicted by the model. For CFT to develop, it is important to try to understand potential mechanisms of change. This systematic review aimed to examine whether substantive CFT interventions are associated with changes in the key theoretical components of the CFT model: the soothing, threat, and drive systems.

Methods

Identification and selection of studies

The systematic review protocol for this study was registered on Prospero prior to commencement (ID CRD42017065374). A comprehensive search of the literature was conducted during July 2017 using the following electronic databases: PubMed, APA PsychNET, Web of Science, and Embase. Additional searches were also conducted using ClinicalTrials.gov, the Cochrane Central Register of Controlled Trials and visual scanning of the reference lists of included papers. The search terms were: (compassion OR compassionate OR compassionate-mind) AND (therap* OR treatment OR training OR intervention).

Study titles and abstracts were screened using specific inclusion and exclusion criteria presented below. Study selection was conducted by the first author, and 11% (n=600) were reviewed by a second reviewer, with 99% agreement. Disagreement was related to six studies, which did not report outcomes related to CFT model constructs using validated measures, as per the inclusion criteria. Disagreement was resolved by revisiting these papers to check for validated measures, and full agreement on all studies was reached after discussion. After resolution, there were no new criteria to apply to other papers not assessed by the second reviewer. The full manuscripts of relevant studies were retrieved and fully assessed by the first author.

Inclusion and exclusion criteria

All studies were assessed for inclusion based on the following PICO criteria:

(i) *Population:* Identified sample or subsample of participants from either clinical or non-clinical populations, including both child and adult populations.

(ii) *Intervention:* Studies that have an active intervention component where the primary intervention is compassion-focused (including CFT and CMT). Studies where the intervention was not primarily compassion-focused, or studies consisting of non-compassion based mindfulness interventions were excluded. Studies that had interventions of any format (i.e. group or individual) that were therapist-delivered and consisted of

more than one session were included. Studies where CFT was integrated with another type of therapy (e.g., CBT) were included only if the additional type of therapy was controlled for. Studies of self-help exercises only, or studies without therapist delivery were excluded. Correlational studies of compassion and psychological outcomes were excluded.

(iii) *Comparators:* All comparators were included, as were studies with no comparator (i.e. observational and case study designs).

(iv) *Outcomes:* Studies that report outcomes using validated measures of CFT model components (compassion, drive, threat) were included. Studies were excluded if they did not report outcomes related to the CFT model and only reported outcomes of symptom reduction.

Studies had to be English language articles, and original, peer-reviewed research studies. Book chapters, book reviews, literature reviews, and unpublished dissertations were excluded.

Quality assessment

All included studies were assessed using a modified version of the Newcastle-Ottawa scale for cohort-studies (Appendix 1; Peterson, Welch, Losos, & Tugwell, 2011) to assess the methodological quality of all studies (Table 2). The Newcastle Ottawa tool is recommended for assessing risk of bias in non-randomised studies in both Agency for Research and Quality (AHRQ) guidelines (Viswanathan, Ansari, Berkman, Chang, Hartling, McPheeters, Santaguida, Shamliyan, Singh, & Tsertsvadze, 2012), and the Cochrane Handbook (Higgins & Green, 2011). A score for each study was given in the following domains: selection, comparability and outcome; and a total score out of nine was calculated for each study (with higher scores indicating better quality). This score was then converted to a percentage to aid the reader. To further test the methodological quality of randomised controlled trials (RCTs), the Cochrane Risk of Bias Tool for RCTs was utilized (Appendix 2; Higgins, Altman, Gøtzsche, Jüni, Moher, Oxman, Savović, Schulz, Weeks, & Sterne, 2011). An overall methodological quality assessment was then given by converting the Cochrane risk of bias ratings to the AHRQ standards (good

quality, fair quality or poor quality; Viswanathan et al., 2012). Quality assessment was conducted by the first author.

Data extraction and synthesis

Since the review combines mixed methodologies, with few RCTs, data were inadequate for meta-analysis, and a narrative synthesis approach was used. Data extraction was unblinded and comprised: authors, location, year, design, sample population, characteristics and size, measures, intervention characteristics and format, outcomes, and key conclusions.

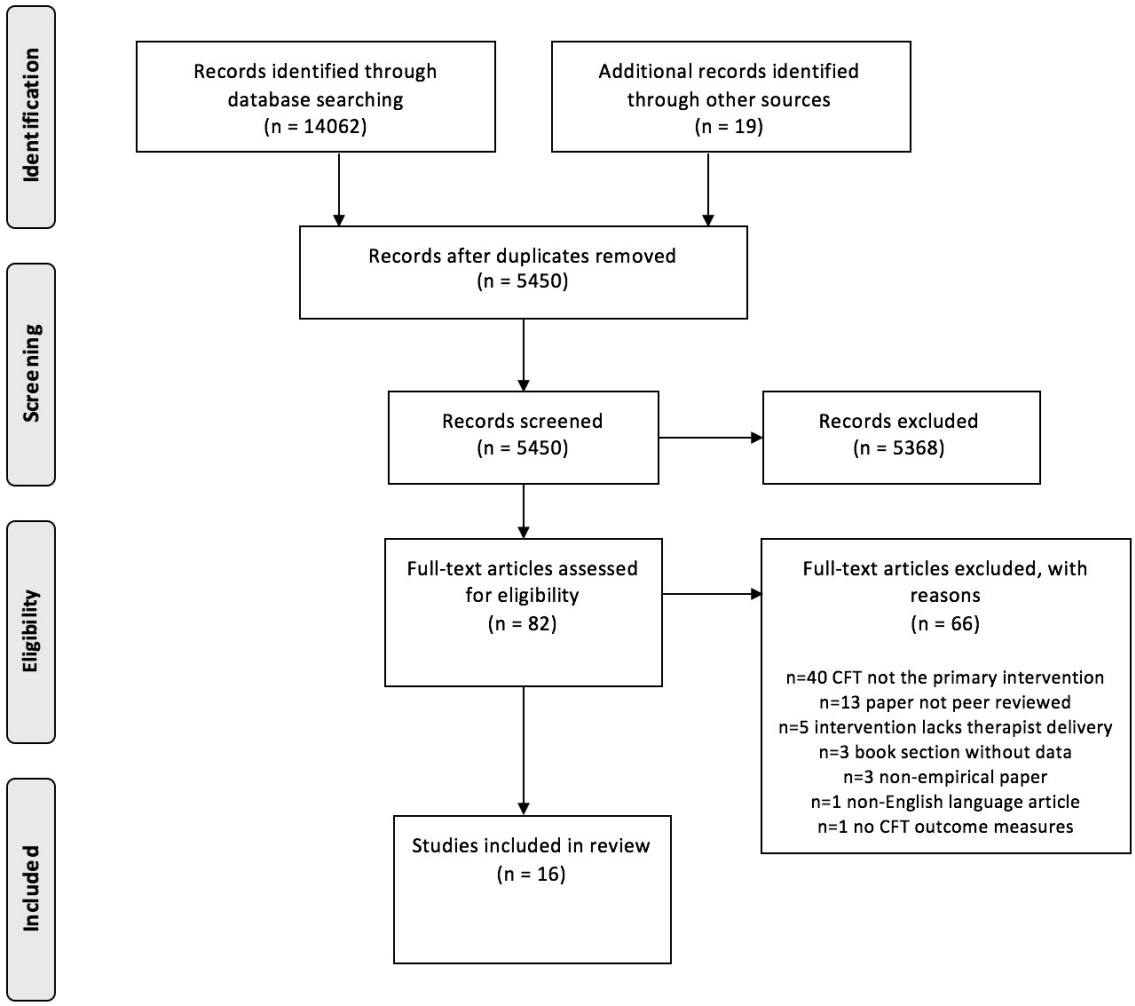

Figure 2. PRISMA flow diagram documenting the systematic research strategy

Results

The electronic database search yielded 14062 records (see Figure 2). In total,16 studies were included in the review and these are summarised in Table 1. Most studied clinical populations, with a range of presenting problems. Interventions ranged from 6-20 sessions, with varied complexity and content. Intervention method consisted of group (n=12), individual (n=3), and a mixture of both (n=1). Outcome data for studies is presented in Table 4, and a summary of the main findings is presented in Table 3. The evidence for changes in the soothing, threat, and drive systems will be discussed in turn.

Quality assessment

Quality assessment for all included studies is shown in Table 2. Of the 16 included studies, four were RCTs, two were non-RCTs, and ten were observational studies. The overall quality of the four RCT's was poor as assessed by the AHRQ standards, and the majority of the Cochrane domains were scored as 'unclear' with inadequate reporting of information. Additionally, the RCTs lacked both allocation concealment, and blinding of participants, personnel, and outcome assessment. The two non-RCTs had relatively high total scores attributable to clear description of their research. The ten observational studies generally scored poorly (with a range of quality assessment percentages of 22-67%), with inadequate reporting of information, convenience sampling methods, lack of controls, and inadequate follow-up.

Table 1. Summary description of included studies

	Study characteristics			**Intervention characteristics**				Quality assessment
Study; location	Design	N (intervention; control)	Population	Outcome measures	Length	Format	Control group	Newcastle Ottawa Scale total score converted to percentage
Ashworth, Clarke, Jones, Jennings, and Longworth (2015); UK	Observational	12	Individuals with acquired brain injury (stroke, tumour, TBI and anoxic damage) attending outpatient neuropsychological rehabilitation.	HADS, FSCRS	18 group sessions and up to 18 individual sessions (M=16)	Mood group based on CFT and individual CFT	None	44%
Beaumont, Jenkins, and Galpin (2012); UK	RCT	32 (16;16)	Individuals referred for a course of CBT following a trauma-related experience (accident or assault).	HADS, IES-R, SCS-SF	12 sessions	Group CFT plus CBT	12 week CBT group	67%
Beaumont, Irons, Rayner, and Dagnall (2016b); UK	Observational	28	Healthcare providers and educators.	SCS-SF, FSCS	3 days	Introduction to CFT group workshop	None	44%
Beaumont, Durkin, McAndrew, and Martin (2016a); UK	Non-RCT	17 (9;8)	Fire services personnel referred for therapy with symptoms of trauma.	HADS, IES-R, SCS-SF	12 sessions	TF-CBT plus CFT group	12 week TF-CBT group	78%
Boersma, Håkanson, Salomonsson, and Johansson (2015); Sweden	Observational	6	University students with social anxiety.	SPSQ, SCS, SIAS	8 1-hour sessions	Individual CFT sessions	None	33%

	Study characteristics			Intervention characteristics				Quality assessment
Braehler, Gumley, Harper, Wallace, Norrie, and Gilbert (2013); UK	RCT	40 (22;18)	Individuals diagnosed with schizophrenia spectrum disorder, bipolar disorder or psychosis attending community mental health services.	BDI, NRSS, PANAS, FORSE, PBIQ-R, CGI-I	16 2-hour sessions	CFT group plus TAU	TAU from community mental health team	78%
Clapton, Williams, Griffith, and Jones (2017); UK	Observational	6	Individuals with a mild learning disability attending community learning disability services.	SCS-SF, PTOS-ID, A-SOCS	6 90-minute sessions	Group CFT	None	33%
Cooper and Frearson (2017); UK	Observational case study	1	Individual with a learning disability attending community learning disability services.	CORE-LD, FSCRS	13 1-hour sessions	Individual CFT	None	33%
Cuppage, Baird, Gibson, Booth, and Hevey (2017); Ireland	Non-RCT	87 (58;29)	Individuals attending community and inpatient mental health services with problematic levels of shame and self-criticism.	BSI, FSCS, FSC-S, OAS, SSPS	14 3-hour sessions	Group CFT	TAU from community mental health team whilst on WL	89%
Gilbert and Procter (2006); UK	Observational	6	Individuals with severe long term and complex difficulties attending an NHS day centre, who have problematic levels of shame and self-criticism.	HADS, FSCS, FSCRS, SRV, OAS, SCS, SBS	12 2-hour sessions	Group CMT	None	44%
Judge, Cleghorn, McEwan, and Gilbert (2012); UK	Observational	27	Individuals with severe and enduring mental health problems presenting to community mental health services.	BDI, BAI, FSCRS, FSCS, ISS, OAS, SCS, SBS	12-14 2-hour sessions	Group CFT	None	22%

	Study characteristics			Intervention characteristics				Quality assessment
Kelly, Wisniewski, Martin‐Wagar, and Hoffman (2017); Canada	RCT	22 (11;11)	Outpatients with eating disorders (all subtypes).	EDE-Q, SCS, FCS, ESS	12 90-minute sessions	Group CFT	TAU outpatient level of care	89%
Laithwaite, O'Hanlon, Collins, Doyle, Abraham, Porter, and Gumley (2009); UK	Observational	18	Males recruited from a maximum-security hospital with mental health problems (schizophrenia, bipolar disorder and psychosis).	SOCS, OAS, SCS, BDI, SIP-AD, RSE	20 sessions	Recovery After Psychosis group programme based on CFT	None	44%
Lucre and Corten (2013); UK	Observational	8	Individuals diagnosed with personality disorder and problematic levels of self-criticism.	SOCS, OAS, CORE, FSCRS, SBS, DASS21	16 sessions	Group CFT	None	67%
Mayhew and Gilbert (2008); UK	Observational	3	Males diagnosed with schizophrenia attending community mental health services.	BAVQ, FSCRS, SCL-90, VRS, SECS	12 1-hour sessions	Individual CMT sessions	None	67%
Noorbala, Borjali, Ahmadian-Attari, and Noorbala (2013); Iran	RCT	20 (10;10)	Females diagnosed with depression attending a psychiatric clinic	BDI, LSCS, AS	12 2-hour sessions	CMT group	No intervention	67%

CFT, Compassion focused therapy; CMT, Compassion Mind Training; TAU, treatment as usual; TF-CBT, trauma-focused CBT; M, Mean; HADS, Hospital Anxiety and Depression Scale; FSCRS, Forms of Self-Criticising/Attacking and Self-reassurance scale; IES, Impact of Events Scale; SCS, Self-Compassion Scale; SCS-SF, Self-Compassion Scale short form; FSCS, Forms of Self-Criticising/Attacking Scale; SPSQ, The Social Phobia Screening Questionnaire; SIAS, Social Interaction Anxiety Scale; NRSS, Narrative Recovery Style Scale; PANAS, Positive and Negative Affect Scale; FORSE, Fear of Recurrence Scale; PBIQ-R, Personal Beliefs about Illness Questionnaire-Revised; PTOS-ID, Psychological Therapy Outcome Scale for Intellectual Disabilities; SOCS, Social Comparison Scale; A-SOCS, adapted Social Comparison Scale; CORE-LD, Clinical Outcomes in Routine Evaluation-Learning Disabilities; BSI, Brief Symptom Inventory; OAS, Other as Shamer Scale; SSPS, Social Safeness and Pleasure Scale; SRV, Social Rank Variables; FCS, Fear of Compassion Scale; FCS-S, Fears of Self-Compassion subscale of the Fears of Compassion Scales; ESS, Experiences of Shame Scale; SBS, Submissive Behaviour Scale; LSCS, Levels of self-criticism scale; ISS, Internalized Shame Scale; Experiences of shame scale; SBS; Submissive Behaviour Scale; DASS21, Depression Anxiety and Stress Scale; VRS, Voice Rank Scale; SIP-AD, Self-Image Profile for Adults; BAVQ, Beliefs About Voices Questionnaire; SCL-90, Symptom Checklist 90; CGI-I, Clinical Global Impression-Improvement Scale; AS, Anxiety Scale; RSE, Rosenberg Self-Esteem scale.

06

Primary outcomes

Though not the focus of this review, the association between CFT interventions and psychopathology symptoms was examined by studies. In summary, most studies chose measures of psychopathology as primary outcomes and results were mixed, with some outcomes showing improvement, and others showing no change (see appendix K). Three studies reported significant improvements in psychopathology symptoms following CFT (Cuppage et al., 2017; Laithwaite et al., 2009; Mayhew & Gilbert, 2008). Three studies reported significantly greater reductions in symptoms of avoidance, intrusion and hyper-arousal post-CFT, compared to controls (Beaumont et al., 2016a; Beaumont et al., 2012; Braehler et al., 2013). One study reported significant reductions in stress post CFT (Lucre & Corten, 2013). Another study reported a significantly greater reduction in eating pathology post CFT than for controls (Kelly et al., 2017), with a large effect size (r=0.46). One study reported a significant decrease in psychological distress post-CFT (Cuppage et al., 2017), and two others reported no significant changes in psychological distress (Clapton et al., 2017; Lucre & Corten, 2013).

The soothing system

CFT theory suggests successful intervention would be associated with changes, probably increases, in soothing system responses. All 16 studies only assessed soothing by measuring types of compassion.

Table 2. Summary of assessment of methodological quality and potential risk of bias for included studies

		Newcastle-Ottawa Quality Assessment Scale scores					**Cochrane Risk of Bias Tool for RCTs**
Study	Design	Selection (/4)	Comparability (/2)	Outcome (/3)	Total (/9)	Total score converted to percentage	AHRQ Standard
Beaumont et al. (2012)	RCT	3	1	2	6	67%	Poor quality
Braehler et al. (2013)	RCT	4	1	2	7	78%	Poor quality
Kelly et al. (2017)	RCT	4	2	2	8	89%	Poor quality
Noorbala et al. (2013)	RCT	3	2	1	6	67%	Poor quality
Beaumont et al. (2016a)	Non-RCT	4	2	2	7	78%	-
Cuppage et al. (2017)	Non-RCT	4	2	2	8	89%	-
Ashworth et al. (2015)	Observational	2	0	3	4	44%	-
Beaumont et al. (2016b)	Observational	3	0	1	4	44%	-
Boersma et al. (2015)	Observational	2	0	2	3	33%	-
Clapton et al. (2017)	Observational	3	0	1	3	33%	-
Cooper and Frearson (2017)	Observational	2	0	1	3	33%	-
Gilbert and Procter (2006)	Observational	2	0	2	4	44%	-
Judge et al. (2012)	Observational	1	0	1	2	22%	-
Laithwaite et al. (2009)	Observational	2	0	2	4	44%	-
Lucre and Corten (2013)	Observational	3	0	3	6	67%	-
Mayhew and Gilbert (2008)	Observational	3	0	3	6	67%	-
Mean study score		**2.81**	**0.62**	**1.88**	**5.06**	**56%**	**Poor quality**

Self-compassion

RCTs

Of the four RCTs, Noorbala et al. (2013) did not include any measures of compassion, which is interesting given the aim of the study was to evaluate a CFT intervention. Beaumont et al. (2012) and Kelly et al. (2017) measured self-compassion using the Self-Compassion Scale (SCS; Neff, 2003b), a 26-item measure with good validity and reliability (Neff, 2016). Beaumont et al. (2012) compared group CBT plus CFT, to a control group of group CBT only, in a sample of 32 participants with trauma. Both conditions experienced statistically significant increases in self-compassion ($F_{(1,130)}$=103.04, p<.0001), but this was significantly greater in the CFT condition ($F_{(1,130)}$=4.66, p<.05). Interpretation of this difference is clouded by the non-random, convenience sampling method, which could affect representativeness of the sample and lack of follow-up prevents assessment of long-term outcomes.

Kelly et al. (2017) compared TAU to group CFT plus TAU in a sample of 22 outpatients with eating disorders. There were significantly greater increases in self-compassion in CFT compared to TAU, with a large effect size (r=0.57, $F_{(1,42)}$=7.24, p<0.5). On examining the positive and negative self-compassion factors of the SCS independently, the CFT condition had both significantly greater increases in positive self-compassion (with a moderate effect size; r=0.38), and significantly greater decreases in negative self-compassion (i.e. self-criticism, with a large effect size; r=0.51) compared to controls. Limitations included a small sample size (N=22), and a lack of standardised TAU in both conditions, so changes observed may not be purely due to CFT.

Braehler et al. (2013) compared TAU to group CFT plus TAU in a sample of 40 participants with psychosis. Self-compassion was qualitatively measured with the Narrative Recovery Style Scale (Gumley, Braehler, Laithwaite, Macbeth, & Gilbert, 2010); participants' interviews were coded according to the degree to which compassionate narrative strategies were used. The CFT condition had a statistically significant increase in their compassion narratives post intervention with a large effect size (r=0.59), and demonstrated significantly more compassion in their narratives compared to controls with a medium effect size (U=75, Z=-2.43, p<.05, r=-0.42). Secondary correlational analyses demonstrated that for CFT only, increases in

compassion were significantly associated with decreases in depression and psychosis-related: shame (r=-0.57), social marginalization (r=-0.74), and fear of relapse (r=-0.52). Findings suggest that increases in self-compassion (soothing system) could relate to concomitant reductions in threat system responses, as hypothesized by the CFT model. Limitations of this study again included variability in TAU in both conditions and no follow-up. The use of a qualitative approach rather than a validated measures of self-compassion limits reliability and comparability of the results.

Non-RCTs

Of the two non-RCTs, only Beaumont et al. (2016a) measured compassion. They compared CFT plus TF-CBT, to TF-CBT in a sample of 17 Fire Service personnel with trauma-related symptoms using the short form Self-Compassion Scale (SCS-SF; Raes, Pommier, Neff, & Van Gucht, 2011), a reliable measure of self-compassion highly correlated with the full SCS. Compared to controls, participants in the CFT condition had significantly higher increases in self compassion, with a moderate effect size (n^2=0.33, $F_{(1,14)}$=7.01, p<.05). This study had a quality assessment percentage score of 78%, meaning that it was one of the higher quality studies included in this review. However, the CFT arm received a higher 'dose' of treatment (12 sessions, versus 8 for controls) and this, plus the non-randomized design limits the strength of conclusion, since differences could result from non-randomized sample factors and amount of therapeutic contact rather than CFT specific factors.

Observational studies

Of the ten observational studies, five measured self-compassion, using the SCS (Boersma et al., 2015; Laithwaite et al., 2009; Mayhew & Gilbert, 2008) or the SCS-SF (Beaumont et al., 2016b; Clapton et al., 2017). Five studies (Ashworth et al., 2015; Cooper & Frearson, 2017; Gilbert & Procter, 2006; Judge et al., 2012; Lucre & Corten, 2013) used the Reassured-Self Subscale of the Forms of Self-Criticising/Attacking and Self-Reassuring Scale (FSCRS; Baião, Gilbert, McEwan, & Carvalho, 2015). The FSCRS is a 22-item measure with two subscales: hated-self (self-criticism), and

reassured-self (self-compassion). Self-reassurance is considered to be a key element of self-compassion, a direct alternative to self-criticism (Gilbert, 2014).

Six observational studies showed statistically significant increases in self-compassion following CFT, though there was a range of effect sizes (Ashworth et al., 2015; Beaumont et al., 2016b; Boersma et al., 2015; Gilbert & Procter, 2006; Judge et al., 2012; Lucre & Corten, 2013). Clapton et al. (2017) reported an increase in self-compassion that did not meet significance ($Z=-0.42$, $p=0.87$), and Laithwaite et al. (2009) found no change in compassion scores from pre to post intervention. Mayhew and Gilbert (2008) report mixed results, with only one of the three participants showing an increase in self-compassion after intervention. The single-case experimental design, Cooper and Frearson (2017), reported a decrease in self-compassion following intervention for an individual with Learning Disability (LD; score decreased from 15 pre-intervention to 10 post-intervention), however, the measure used (FSCRS) has not been validated for use with an LD population, and the authors report issues with the consistency of the individual's self-report. All ten observational studies showed a high risk of bias, with quality assessment scores converted to percentages ranging from 22-67%. These studies had small n's (range=1-28), including two case series (Boersma et al., 2015; Mayhew & Gilbert, 2008), and one case study (Cooper & Frearson, 2017). Since all lacked comparison groups, any changes observed cannot reliably be attributed to CFT.

Receiving compassion from others

One non-RCT (Cuppage et al., 2017) compared group CFT to TAU in 87 participants with mental health problems and high shame and self-criticism. The Social Safeness and Pleasure Scale (SSPS; Gilbert, McEwan, Mitra, Richter, Franks, Mills, Bellew, & Gale, 2009), was used to measure the extent to which people perceive their social world as safe, warm and soothing. Compared to TAU, CFT was associated with significantly greater increases in social safeness post treatment, with a small effect size ($n^2=0.12$, $p<.001$), maintained at 2-month follow-up. Limitations include a non-randomised design and the authors do not clarify whether CFT participants also received TAU, inhibiting definitive conclusions regarding the impact of CFT.

Compassion towards others

None of the 16 studies included measures of compassion for others.

Fears of compassion

Of the four RCTs, only (Kelly et al., 2017) measured fears of compassion. The Fears of Compassion Scales (FCS; Gilbert et al., 2011), measured fears of compassion (towards the self and from others). Post-intervention, when compared to TAU the CFT condition was associated with significantly larger decreases in fears of self-compassion ($F_{(1,42)}$=6.33, p<.04, r=0.36) and fears of receiving compassion from others ($F_{(1,42)}$=3.78, p<.05, r=0.29) both with medium effect sizes. The only other study measuring fears of self-compassion was a non-RCT (Cuppage et al., 2017), using the relevant FCS subscale. Compared to TAU, CFT was associated with significantly greater reduction in fears of self-compassion, with a small effect size (p<.001, n^2=0.18).

Soothing system summary

Overall, 13 studies provided some evidence of improvements in compassion following CFT intervention. There was variability in the quality of these studies (percentage scores from 22-89%), however, notably three of the RCTs showed significant change in compassion following intervention.

The drive system

CFT proposes that compassion-based interventions effect change by balancing all three emotion regulation systems, including drive. The hypothesised direction of change would likely depend on the individuals' current drive system responses. None of the 16 studies referred to or included measures of drive, so it is not possible to assess whether the drive system is affected by CFT. Probable reasons for such an omission and resultant limitations are explored in the discussion.

Table 3. Summary of main findings from studies with regards to changes seen in compassion, shame and self-criticism following intervention (ordered by quality score).

	Compassion		**Shame**		**Self-criticism**		**Quality assessment**
Were changes seen following intervention? Study and design:	Significant change	Non-significant change	Significant change	Non-significant change	Significant change	Non-significant change	Score converted to percentage
RCTs:							
Kelly et al. (2017)	Yes		Yes		Yes		89%
Braehler et al. (2013)	Yes			Yes	*	*	78%
Beaumont et al. (2012)	Yes		*	*	*	*	67%
Noorbala et al. (2013)	*	*		Yes		Yes	67%
Non-RCT's and observational:							
Cuppage et al. (2017)	Yes		Yes		Yes		89%
Beaumont et al. (2016a)	Yes		*	*	*	*	78%
Lucre and Corten (2013)	Yes		Yes		Yes		67%
Mayhew and Gilbert (2008)	Yes	Yes	*	*	Yes		67%
Ashworth et al. (2015)	Yes		*	*	Yes		44%
Beaumont et al. (2016b)	Yes		*	*	Yes		44%
Gilbert and Procter (2006)	Yes		Yes		Yes		44%
Laithwaite et al. (2009)		Yes	Yes		*	*	44%
Boersma et al. (2015)	Yes		*	*	*	*	33%
Clapton et al. (2017)	Yes		Yes		Yes		33%
Cooper and Frearson (2017)		Yes	*	*		Yes	33%
Judge et al. (2012)	Yes		Yes		Yes		22%

* This aspect not measured

The threat system

CFT interventions should also lead to a balancing of threat system responses (e.g., shame, self-criticism, anxiety, and depression). In clinical populations, it is likely that threat systems are overactive, so CFT should reduce threat system activity. However, it may be possible, particularly in non-clinical populations, that threat system responses are not problematic, and therefore do not need to change (Gilbert, 2009b).

Shame

Eight studies included measures of shame: two RCTs (Braehler et al., 2013; Kelly et al., 2017), one non-RCT (Cuppage et al., 2017), and five observational studies (Clapton et al., 2017; Gilbert & Procter, 2006; Judge et al., 2012; Laithwaite et al., 2009; Lucre & Corten, 2013). Most measured external shame, and only two studies assessed internal shame (Judge et al., 2012; Kelly et al., 2017). Braehler et al. (2013) also measured symptom-specific shame in psychosis.

Internal shame

The RCT by Kelly et al. (2017) measured internal shame using the 25-item Experiences of Shame Scale (ESS; Andrews, Qian, & Valentine, 2002). Compared to TAU, CFT plus TAU was associated with significantly less internal shame post-intervention with a moderate effect size ($F_{(1,42)}$=7.15, p<.05, r=0.38). Judge et al. (2012) used the Internalised Shame Scale (ISS; Cook, 1988), and reported a significant decrease in internal shame following CFT, with a moderate effect size ($F_{(1,26)}$=37.92, p<.001, n_p^2=0.593).

External shame

Cuppage et al. (2017) measured external shame with the Other as Shamer scale (OAS; Goss, Gilbert, & Allan, 1994), an 18-item measure of evaluations about how others judge the self. Here, the CFT condition had a significant reduction in external shame post-intervention (p<.0001), but not significantly different to TAU ($F_{(2,84)}$=2.41, p=.13, n^2=0.03). Four observational studies using the OAS reported significant reductions

in external shame following intervention (Gilbert & Procter, 2006; Judge et al., 2012; Laithwaite et al., 2009; Lucre & Corten, 2013), though these studies mostly had low quality assessment percentage scores (range of 22-67%). Four more observational studies (Clapton et al., 2017; Gilbert & Procter, 2006; Laithwaite et al., 2009; Lucre & Corten, 2013) used the Social Comparison Scale (SOCS; Allan & Gilbert, 1995), an 11-item measure of self-perceptions of social rank. One reported a non-significant reduction (Lucre & Corten, 2013), and three reported a significant reduction in external shame post-intervention. The Submissive Behaviour Scale (SBS; Allan & Gilbert, 1997), a 16-item measure of behavioural frequency of submissiveness as a measure of social rank, was used in three observational studies (Gilbert & Procter, 2006; Judge et al., 2012; Lucre & Corten, 2013) but only Judge et al. (2012) reported a significant reduction ($F_{(1,26)}$=18.10, p<.0001, n^2_p=.410).

Symptom Specific Shame

Braehler et al. (2013) measured psychosis-related shame using the shame subscale of the Personal Beliefs about Illness Questionnaire (PBIQ; Birchwood, Jackson, Brunet, Holden, & Barton, 2012). In the CFT condition only, there was a significant association between decreased psychosis-related shame and increased compassion with a large effect size (r=-0.57, p<.001). This could indicate an interaction between the threat and soothing systems, as hypothesised by the CFT model.

Self-criticism

Self-criticism was measured in eleven studies, with a significant change being observed in nine of these, and no significant change observed in two (Cooper and Frearson,2017; Noorbala et al., 2013). The RCT by Kelly et al. (2017) used the SCS Self-Criticism subscale and found significantly larger reductions in self-criticism in CFT compared to TAU, with a large effect size ($F_{(1,42)}$=15.08, p<.001, r=0.51). Noorbala et al. (2013) used the Levels of Self-Criticism Scale (LSCS; Thompson & Zuroff, 2004) and reported a non-significant reduction in the Internalised Self-Criticism subscale (t(15)=0.62, p=0.27), and a non-significant increase in the Comparative Self-Criticism subscale (t(16)=1.28, p=0.11) post intervention. Two observational studies used the Self-

Critical Judgement subscale of the SCS, both reporting significant reductions in self-criticism post intervention (Beaumont et al., 2016b; Clapton et al., 2017).

Forms of self-criticism

The remaining six studies measured different forms of self-criticism (inadequate-self and hated-self) with the Forms of Self-Criticising/Attacking and Self-Reassuring scale (FSCRS; Gilbert et al., 2004); and different functions (self-correction and self-persecution) with the Functions of Self-Criticising/Attacking Scale (FSCS; Gilbert et al., 2004). Though it is difficult to draw any clear conclusions from these studies as they generally scored poorly on the quality assessment rating.

Inadequate-self

Six observational studies used the inadequate-self subscale of the FSCRS, and post-intervention, three reported a significant decrease with moderate to large effect sizes (Ashworth et al., 2015; Gilbert & Procter, 2006; Judge et al., 2012), though these studies scored low on the quality assessment rating (percentage scores range of 22-44%). Two reported a non-significant decrease in inadequate-self scores (Lucre & Corten, 2013; Mayhew & Gilbert, 2008). One reported an increase in inadequate-self scores (Cooper & Frearson, 2017), but as previously discussed this case study used measures not validated for people with LD, and received a low quality assessment score (percentage score of 33%).

Hated-self

The hated-self subscale of the FSCRS was reported in five observational studies. Of these, four reported significant reductions with medium effect sizes (Ashworth et al., 2015; Gilbert & Procter, 2006; Judge et al., 2012; Lucre & Corten, 2013) and one reported a non-significant reduction (Cooper & Frearson, 2017) post-intervention.

Functions of self-criticism

Self-correction

The self-correction subscale of the FSCS was used in four studies. The Cuppage et al. (2017) non-RCT reported a significant reduction in self-correction scores for the CFT condition post intervention ($p<.05$), but not significantly different from TAU ($p=.56$). Of the less reliable observational studies, only one reported a significant reduction (Mayhew & Gilbert, 2008). One reported a non-significant reduction (Judge et al., 2012), and one reported no change (Beaumont et al., 2016b).

Self-persecution

The self-persecution subscale of the FSCS was used in four studies. Cuppage et al. (2017) reported a non-significant reduction in self-persecution scores for the CFT condition post intervention, with no group differences ($F_{(2,84)}=2.33$, $p=.13$, $n^2=.56$). One observational study reported a significant decrease with a small effect size (Judge et al., 2012), and two reported no significant change (Beaumont et al., 2016b; Gilbert & Procter, 2006).

Anxiety

Anxiety was measured in eight of the studies, with six reporting a significant decrease in anxiety post-intervention, but none of the controlled studies found that anxiety decreased more in the CFT intervention than for controls. Two RCTs measured anxiety (Beaumont et al., 2012; Noorbala et al., 2013) using the HADS (Zigmond & Snaith, 1983) and the Anxiety Scale (Costello & Comrey, 1967) respectively. Both reported significant reductions in anxiety following CFT, though Beaumont et al. (2012) found no significant group differences ($F_{(1,130)}=2.43$, $p=.13$). One non-RCT reported a reduction in anxiety following CFT, but again this did not differ significantly from controls (Beaumont et al., 2016a). Five observational studies measured anxiety using the HADS, Beck Anxiety Inventory (BAI; Beck, Steer, & Brown, 1996), Depression Anxiety and Stress Scale (DASS-21; Lovibond & Lovibond, 1995) and the Symptom Checklist-90 (SCL-90; Derrogatis, Lipman, & Covi, 1973). Three studies reported a significant decrease, with a range of effect sizes ($r=0.60$, Ashworth et al., (2015); $Z=-2.21$, Gilbert &

Procter, 2006; n^2_p=.026, Judge et al., 2012), and two reported a non-significant decrease in anxiety symptoms following intervention (Lucre & Corten, 2013; Mayhew & Gilbert, 2008).

Depression

Nine studies measured depression, One RCT measured depression using the HADS (Beaumont et al., 2012), and two (Braehler et al., 2013; Noorbala et al., 2013) used the Beck Depression Inventory (BDI; Beck et al., 1996). Beaumont et al. (2012) reported a significantly greater reduction in depression following CFT compared to controls ($F_{(1,30)}$=223.94, p<.0001), and Noorbala et al. (2013) reported a significant reduction in depression following CFT ((t(12)=1.23, p<.05), but they did not report on group differences here. Braehler et al. (2013) reported a significant association between reductions in depression and increases in compassion in the CFT condition (r=-0.78, *Z*=2.22, p<.05). One non-RCT (Beaumont et al., 2016a) reported a greater, though non-significant, reduction in depression in the CFT condition than the control condition, using the HADS. Five observational studies used the HADS (Ashworth et al., 2015; Gilbert & Procter, 2006), BDI (Judge et al., 2012; Laithwaite et al., 2009), and the SCL-90 (Mayhew & Gilbert, 2008). One study (Mayhew & Gilbert, 2008) reported that all participants had a decrease in depression, though statistical analysis was not conducted to establish the significance of the reduction, the other four reported a significant reduction in depression symptoms following CFT intervention.

Threat system summary

Overall, studies do not provide robust evidence of decreases in threat responses following CFT intervention. Seven studies found significant changes in shame post-intervention, and nine found significant changes in self-criticism. However, the variability in quality of these studies makes it difficult to draw clear conclusions.

Evidence of interactions between the systems

Three studies attempted to examine interactions between the CFT systems. Braehler et al. (2013) found that increases in self-compassion correlated with decreases in

psychosis-related shame with a large effect size (r=-0.57, p<.0001), claiming this as preliminary evidence for the development of soothing system responses being able to reduce threat system responses. Judge et al. (2012) found that higher external shame at baseline was significantly correlated with reductions in self-criticism (r=0.57) and increases in self-compassion (r=-0.58) post-intervention. Interestingly, this study also reported that higher levels of baseline anxiety were significantly associated with fewer improvements in self-soothing thoughts following intervention (r=.049), possibly indicating that high threat (anxiety) makes it harder to develop soothing system responses. Cuppage et al. (2017) found significant correlations between improved psychopathology symptoms, decreased fears of compassion, shame, and self-criticism (threat), and increased social safeness (soothing), explaining 39% of the variance in psychopathology outcomes. For these three studies, the correlational analysis used presents challenges to the conclusions they have drawn regarding interactions between the systems, because simply demonstrating an association cannot provide information about how an intervention leads to change (Kazdin, 2007).

Table 4. Summary of outcome data of included studies

Study and conditions	**Soothing system outcomes** Compassion	**Threat system outcomes** Shame	Self-criticism	Depression and anxiety
<u>*RCTs*</u>				
Beaumont et al. (2012) *CBT+CFT group vs CBT group*	***Self-compassion***: significantly increased in both groups ($F_{(1,30)}$=103.036, p< 0.001. CBT+CMT group (pre M=2.13, SD=0.75, post M=3.72, SD=0.57) had significantly higher self-compassion post-therapy than the CBT group (pre M=1.94, SD=0.51, post M=3.21, SD=0.57); $F_{(1,30)}$=4.657 p< .05.	*Not measured*	*Not measured*	***Depression***: significantly decreased in both groups; $F_{(1,30)}$=223.935, p < .0.001). Significantly greater reductions in depression in the CBT+CMT group (reduction=10.56) than the CBT group (reduction=6.25); t(30)=-3.838, p≤ 0.001. ***Anxiety***: significantly decreased in both groups ($F_{(1,30)}$=151.187, p.< 001. No significant difference in anxiety symptom reduction between the two groups; $F_{(1,30)}$=2.43, p=.129.
Braehler et al. (2013) *CFT+TAU group vs TAU*	***Self-compassion:*** significantly increased in CFT group, with a large effect size (r=0.59), compared to non-significant small effects in TAU. Significantly greater qualitative self-compassion narratives post-treatment in CFT (median = 4.0) than TAU group (median=2.5); U=75, Z=-2.43, p<.01, r=-0.42.	***Psychosis-related shame:*** decreased in both CFT and TAU groups, but not significantly. No significant differences between groups. Increases in compassion significantly associated with decreases in psychosis-related shame in the CFT group; r=-0.57, p<.001, compared to non-significant change in TAU.	*Not measured*	***Depression***: reduced in both groups, but non-significantly. No significant differences between groups. CFT group showed a significant correlation between increases in compassion and reductions in depression, r=-0.78, Z=-2.22, p<.05.

Study and conditions	**Soothing system outcomes** Compassion	**Threat system outcomes** Shame	Self-criticism	Depression and anxiety
Kelly et al. (2017) *CFT group vs TAU*	***Self-compassion*** significantly increased in CFT group (pre M=2.21, post M=2.96), compared to non-significant changes in TAU. Significantly greater increases in self-compassion in CFT than TAU (pre M=2.21, post M=2.12; $F_{(1,42)}$=20.45, p<.001, r=0.57. ***Positive self-compassion:*** CFT group (pre M=2.25, post M=3.04) had significantly greater increases than TAU (pre M=2.25, post M=2.36); ($F_{(1,42)}$=7.24, p<.05, r=0.38).	***Internal shame:*** decreased significantly in CFT group (pre M=3.07, post M=2.40), but did not significantly change in the TAU group (pre M=3.07, post M=2.95). Medium effect of ConditionxTime for ***external shame*** (ESS) ($F_{(1,42)}$=7.15, p<.05, r=0.38).	***Self-criticism:*** decreased significantly more in CFT group (pre M=2.17, post M=2.81), than TAU (pre M=2.17, post M=1.94), with significant large effect ($F_{(1,42)}$=15.08, p=<.001, r=0.51).	*Not measured*
Noorbala et al. (2013) *CMT group vs no intervention*	*Not measured*	*Not measured*	***Internalised self-criticism:*** reduced in the CMT group from pre to post (t=0.23, df=14, p=0.491) and post to 2-month follow up (t=0.62, df=15, p=0.272), but not significant. Control group results not reported. ***Comparative self-criticism subscale:*** slight, non-significant increase in the CMT group from pre to post (t=-0.02, df=16, p=.49). Decrease from post to 2-month	***Depression***: significantly lower at 2-month follow up for the CMT group than pre-intervention (t=1.84, df=14, p<.05). Depression reduced from pre to post intervention but not significant (t=1.23, df=12, p=0.12). N.B. means not reported, control group results not reported. ***Anxiety***: significantly lower at 2-month follow up for CMT group than pre-intervention (t=1.88,

Study and conditions	**Soothing system outcomes** Compassion	**Threat system outcomes** Shame	Self-criticism	Depression and anxiety
			follow up (t=1.28, df=14, p=0.108), but not significant. Control group results not reported.	df=14, p=<.05). Anxiety reduced from pre-post intervention, though not significant (t=0.99, df=12, p=0.17). N.B. means not reported, control group results not reported.
<u>*Non-RCTs*</u>				
Beaumont et al. (2016a) *TF-CBT +CFT group vs TF-CBT group*	***Self-compassion:*** increased in both control (pre M=1.9, SD=0.5, post M=3.1, SD= 0.4) and CFT groups (pre M=2.2, SD=0.8, post M=3.9, SD=0.6). CFT condition had significantly higher increases in self-compassion than controls ($F_{(1,14)}$ = 7.014, p<.05, η^2 = 0.334).	*Not measured*	*Not measured*	***Depression***: greater reduction in the CFT group (pre M=15.9, SD=3.3, post M=5.9, SD=1.4) than controls (pre M=10.6, SD=3.5, post= 4.9, SD=2.0), though not significant. ***Anxiety***: greater reduction in the CFT group (pre M=14.8, SD=4.5, post M=5.3, SD=1.1) than controls (pre M=10.3, SD=2.7, post M=4.4, SD=1.9), though not significant.
Cuppage et al. (2017) *CFT group vs TAU*	***Receiving compassion from others:*** social safeness significantly increased in CFT group from pre (M=25.40, SD=8.82) to post intervention (M=30.29, SD=10.13); p<.001. No significant change in controls. When baseline differences were controlled for, there was a significantly greater improvement for the CFT condition than controls $F_{(2,84)}$=10.94, p<.005, n^2=.12.	***External shame:*** significant reduction in CFT group from pre (M=36.69, SD=13.47) to post intervention (M=35.00, SD=14.00); p<.001. No significant change in controls. No significant difference between CFT and controls for changes in scores; $F_{(2,84)}$=2.41, p=.13, n^2=.03.	Functions of ***self-criticism***: <u>*Self-persecution*</u> scores in CFT group reduced from pre (M=13.74, SD=8.88) to post intervention (M=12.34, SD=7.88), but not significant. No significant change for controls. <u>*Self-correction*</u> scores in CFT group significantly decreased from pre (M=29.24, SD=10.60) to post intervention (M=27.02, SD=10.20); p<.05. No significant difference between CFT and controls for changes in:	*Not measured*

Study and conditions	**Soothing system outcomes** Compassion	**Threat system outcomes** Shame	Self-criticism	Depression and anxiety
			self-persecution $F(2,84)=2.33$, p=.13, $n^2=.56$; and self-correction $F_{(2,84)}=0.35$, p=.56, $n^2=.00$.	
Observational Ashworth et al. (2015) *Group and individual CFT*	***Self-compassion:*** significantly increased (r=-.56, df=-1.38), and maintained at 3-month follow-up (pre M=15.50, SD=5.09, post M=23.08, SD=5.84, follow-up M=21.99, SD=3.38).	*Not measured*	***Self-criticism***: significantly reduced and maintained at follow up: ***hated-self*** (r=.60 df=1.5); (pre M= 7.17, SD=5.64, post M=1.00, SD=1.28, follow-up M=2.78, SD=3.11), and ***inadequate-self*** (r=.67, df=1.81); (pre M=24.42, SD=6.37, post M=13.08, SD=6.11, follow-up M=13.11, SD=5.69).	***Anxiety****:* significantly reduced and maintained at follow-up (r=.52, df=1.43). Anxiety pre M=12.33, SD= 5.69, post M=6.33, SD=4.01, 3-month follow-up M=6.22, SD= 4.09. ***Depressio*n:** significantly reduced and maintained at follow-up (r=.83, df=1.43) Depression pre M=9.75, SD=4.48, post M=4.33, SD= 2.93, 3-month follow-up M=4.44, SD=2.46.
Beaumont et al. (2016b) *Introduction to CFT group workshop*	***Self-compassion:*** significantly increased following training (pre: M=18.36, SD=4.44; post: M=20.75, SD=3.21). Significant main effect for time ($F_{(1,25)}=15.76$, p<.001, $n^2_p=0.39$. No differences found for occupation.	*Not measured*	***Self-criticism:*** significantly decreased following training (pre: M=18.11 SD=5.09; post: M=15.61, SD=4.57). Significant main effect for time ($F_{(1,25)}=19.48$, p<.001, $n^2_p=0.44$), and for occupation ($F_{(2,25)}=18.00$, p<.001, $n^2_p=0.59$) - self-critical scores significantly reduced for therapists and HCPs, but not for nurses and midwives. ***Functions of self-criticism***: <u>*Self-correction:*</u> no significant difference following training (pre: M=22.00, SD=11.00; post: M=21.29, SD=11.34).	*Not measured*

Study and conditions	**Soothing system outcomes** Compassion	**Threat system outcomes** Shame	Self-criticism	Depression and anxiety
			No significant main effect observed for time ($F_{(1,25)}$=0.10, p=.756, n^2_p=0.001). Significant main effect of occupation ($F_{(1,25)}$=4.58, p<.05, n^2_p=0.27) - higher self-correction scores for HCP's, but other differences. *Self-persecution:* No significant difference following training (pre: M=5.89, SD=6.52; post: M=5.68, SD=5.22). No significant main effect of time ($F_{(1,25)}$=0.33, p=.570, n^2_p=0.01). Significant main effect for occupation ($F_{(2,25)}$=4.19, p<.05, n^2_p=0.25) - higher self-persecution scores for HCP's, but no other differences.	
Boersma et al. (2015) *Individual CFT*	***Self-compassion*** significantly improved post intervention for 5 participants, and non-significant improvement for one participant.	*Not measured*	*Not measured*	*Not measured*
Clapton et al. (2017) *CFT group*	***Self-compassion:*** increased from pre (M=2.72, SD=1.08) to post intervention (M=2.97, SD=0.90), but not significantly (Z=-0.42, p=0.87).	***External shame:*** social comparison scores were significantly higher post intervention than pre-intervention (z=-2.00, p<.05).	***Self-criticism:*** significantly decreased from pre (M=4.75, SD=0.29) to post intervention (M=3.36, SD=0.92); Z=-2.21, p<.05.	*Not measured*

Study and conditions	**Soothing system outcomes** Compassion	**Threat system outcomes** Shame	Self-criticism	Depression and anxiety
Cooper and Frearson (2017) *Individual CFT*	***Self-compassion:*** decreased from pre (score=15) to post intervention (score=10).	*Not measured*	Forms of ***self-criticism***: *Inadequate-self* increased from pre (score=25) to post intervention (score=27), and *hated-self* decreased from pre (score=8) to post intervention (score=6).	*Not measured*
Gilbert and Procter (2006) *CMT group*	***Self-compassion***: significantly increased from pre (M=6.17, SD=6.40) to post intervention (M=19.83, SD=8.21); (Z=-2.2-, p<.05).	***External shame:*** significant reductions in *social comparison* from pre (M=34.83, SD=17.27) to post intervention (M=58.67, SD=26.00); (Z=-2.21, p<.05). Significant reduction in *Other as shamer* from pre (M=48.5, SD=17.27) to post intervention (M=36.33, SD=12.13); (Z=-2.21, p<.05). Reduction in ***submissive behaviour*** (SBS) from pre (M=42.67, SD=11.52) to post intervention (M=30, SD=16.95), but not significant.	***Functions of self-criticism:*** Significant reduction in *self-persecution* from pre (M=17.5, SD=15.79) to post intervention (M=9.6, SD=8.45); Z=-1.83, p<.05. *Self-correction* did not significantly change from pre (M=28, SD=15.79) to post intervention (M=21.67, SD=11.74); (Z=-1.05, NS). ***Forms of self-criticism:*** *Inadequate-self* significantly reduced from pre (M=31.33, SD=5.16) to post intervention (M=14.5, SD=7.01); Z=-2.02, p<.05. *Hated-self* significantly reduced from pre (M=15.17, SD=3.76) to post intervention (M=5.67, SD=5.40); (Z=-2.20, p<.05).	***Depression:*** significant reduction from pre (M=10.33, SD=2.67) to post intervention (M=4.3, SD=2.73); (Z=-2.20, p<.05). ***Anxiety:*** significant reduction from pre (M=14.67, SD=3.78) to post intervention (M=6.83, SD=2.93); (Z=-2.21, p<.05).
Judge et al. (2012) *CFT group*	***Self-compassion***: significantly increased from pre (M=8.67, SD=4.61) to post intervention (M=13.26, SD=5.27); $F_{(1,26)}$=19.47, p<.0001, n^2_p=.428.	***Internal shame:*** Significantly decreased from pre (M=71.41, SD=12.06) to post intervention (M=51.89, SD=17.45); $F_{(1,28)}$=37.92, p<.0001, n^2_p=.593. ***External shame:*** significantly	***Forms of self-criticism:*** *Inadequate-self* significantly decreased from pre (M=31.08, SD=3.92) to post intervention (M=23.12, SD=7.36); F(1,26)=30.5, p=.000, n_p^2=.550. *Hated-self* significantly decreased from pre (M=12.30, SD=4.83) to	***Depression***: significantly decreased from pre (M=32.93, SD=9.07) to post intervention (M=19.59, SD=9.87); F(1,26)=61.06, p=.000, n_p^2=.701. ***Anxiety***: significantly decreased from pre (M=23.89, SD=11.43) to

Study and conditions	**Soothing system outcomes** Compassion	**Threat system outcomes** Shame	Self-criticism	Depression and anxiety
		decreased from pre (M=42.67, SD=13.16) to post intervention (M=35.07, SD=14.58); $F_{(1,26)}$=15.76, p<.001, n^2_p=.377. ***Submissive behaviour*** significantly decreased from pre (M=38.04, SD=11.28) to post intervention (M=30.89, SD=11.13); $F_{(1,26)}$=18.10, p<.0001, n^2_p=.410.	post intervention (M=8.15, SD=4.43); *F*(1,26)=19.63, p=.000, n_p^2=.430. ***Functions of self-criticism:*** Non-significant reduction in *self-correction* from pre (M=26.70, SD=11.21) to post intervention (M=24.81, SD=11.42); $F_{(1,26)}$=0.71, p=.41, n^2_p=.026. *Self-persecution* significantly decreased from pre (M=16.04, SD=8.42) to post intervention (M=12.33, SD=7.89); $F_{(1,26)}$=5.24, p<.05, n^2_p=.168.	post intervention (M=16.15, SD=10.45); *F*(1,26)=21.94, p=.000, n_p^2=.458.
Laithwaite et al. (2009) *CFT group*	***Self-compassion:*** no significant changes pre (Med=3.30) to post intervention (Med=3.48), and at 6-week follow-up (Med=3.63).	***External shame:*** significant changes in *OAS* from pre-intervention to 6-week follow up (Z=.801, n-ties=11, p<.5, r=0.15). *Social rank* significantly reduced pre to post intervention (Z=1.96, n-ties=11, p<.05, r=0.3), and maintained at 6-week follow up (Z=2.148, n-ties=10, p<.05, r=0.36).	*Not measured*	***Depression:*** significantly reduced from pre (Med=9.00) to post intervention (Med=4.00); (Z=2.332, n-ties=15, p<.05, r=0.38), and maintained at 6-week follow-up (Med=4.00); (Z=2.825, n-ties=16, p<.01, r=0.47).
Lucre and Corten (2013) *CFT group*	***Self-compassion***: significantly increased following CFT and maintained at follow up (mean ranks: pre M=1.00, post M=2.50, follow-up M=2.50, p=<.05).	***External shame***: significant reductions in *OAS* following CFT, and improved further at follow up (mean ranks: pre M=2.75, post M=2.00, follow-up M=1.25, p<.01).	***Forms of self-criticism*** *Hated-self* significantly reduced following CFT (mean ranks: pre M=3.00, post M=1.63, follow-up M=1.38, p<.001). *Inadequate-self* reduced following	***Depression***: significantly decreased following CFT (mean ranks: pre M=2.75, post M=1.88, follow-up M=1.38, p<.01). ***Anxiety***: non-significant reduction following CFT (mean ranks: pre

Study and conditions	**Soothing system outcomes** Compassion	**Threat system outcomes** Shame	Self-criticism	Depression and anxiety
		Submissive behaviour: small but non-significant improvement post CFT. ***Social comparison:*** significantly improved post CFT, improvement maintained but not significant at follow-up.	CFT, but failed to reach significance (mean ranks: pre M=2.63, post M=1.69, follow-up M=1.69, p=.062).	M=2.50m post M=2.06, follow-up M=1.44, p=.081)
Mayhew and Gilbert (2008) *Individual CMT*	***Self-compassion*** increased for one participant following CMT, however, the other two participants showed no major changes in self-compassion.	*Not measured*	Forms of self-criticism: All participants had a decrease in ***inadequate-self*** scores.	***Depression:*** all participants had a decrease in depression post intervention. ***Anxiety:*** all participants had a decrease in anxiety post intervention.

Discussion

This systematic review aimed to examine whether CFT interventions are associated with changes in the theoretical systems of the underpinning model: soothing, threat and drive. It builds on the existing body of evidence for CFT interventions (Leaviss & Uttley, 2015). Since only six of the 16 included studies were controlled trials, the lack of robust experimental design significantly limits firm conclusions from being drawn. Variability in measures for the relevant outcomes also make it difficult to compare studies, and to be sure that the same constructs are being measured. Although most studies measured some aspects of the CFT model, none attempted to measure change in all three systems, and none attempted to measure drive. As such, it is not possible to fully assess how CFT affects the three systems posited by the CFT model, or how they may interact. Furthermore, few studies were designed in a way that would allow them to assess potential processes of change, an important point to consider as mechanisms of change need to be elucidated as part of testing the theoretical models that underpin interventions (Kazdin, 2007).

Evidence surrounding the soothing system

Despite theoretically involving a range of processes, studies only assessed the soothing system with measures of compassion. Evidence from RCTs found that overall, CFT was associated with increases in self-compassion when compared to controls, thus indicating that CFT specifically may enhance the soothing system. A few studies attempted to assess compassion in other ways: compassion towards and from others, and fears of compassion. One RCT showed that fears of compassion interacted with the development of self-compassion, supporting the CFT model. This aligns with previous research showing that fears of compassion moderates the association between self-criticism and depression (Hermanto, Zuroff, Kopala-Sibley, Kelly, Matos, Gilbert, & Koestner, 2016), indicating how a fear of compassion could bar improvement in other domains of the CFT model (e.g., threat). Further research on this type of interaction is required. Future studies could assess how fear of compassion (and possibly other soothing responses) might moderate between intervention and changes in CFT systems. The types of experimental design of studies included in this review could not offer further insight into this, and it is not possible to test a dynamic theoretical model purely based on a systematic review.

Gathering clear evidence for changes in the soothing system is complicated by the fact that compassion is a complex and multifaceted construct (Strauss, Taylor, Gu, Kuyken, Baer, Jones, & Cavanagh, 2016), involving multiple attributes: empathy, sensitivity, motivation to care, distress tolerance, and non-judgement (Gilbert, 2010). Studies have focused on self-compassion, neglecting other facets, and potentially missing out on changes in these areas. This probably reflects the state of the literature; whereby self-compassion tends to be regarded as the most important part of the affiliation system. However, a recent systematic review concluded that current compassion measures fail to comprehensively measure the construct (Strauss et al., 2016). In a recent development, Gilbert et al. (2017) developed the Compassionate Attributes and Action scales (CAAS) to measure all types of compassion; compassion towards self, others, and from others. Difficulties measuring compassion have made it difficult to make clear conclusions about the impact of CFT on compassion. Future research should develop and use more comparable, comprehensive and reliable measures.

Additionally, the soothing system involves more than just compassion, including feelings of safeness, calm and content (Gilbert, 2010). A major limitation of the reviewed evidence is that these other soothing system responses were not measured. Indeed, few psychological interventions assess positive change as an outcome, and mostly focus on negative symptom reduction. Further research would benefit from developing and using other measures of soothing system responses. Positive outcome measures developed in other areas might be pertinent, such as measures of happiness, hope, life satisfaction, and gratitude, developed by the discipline of positive psychology (Jarden, 2011).

Evidence surrounding the drive system

The drive system was not assessed by any of the studies, probably indicating challenges in developing and validating drive outcome measures. Currently, the drive system is defined as that which underpins motivation to acquire means to survival: food, sexual opportunities, shelter, social alliances etc. (Gilbert, 2009b). When balanced, drive should move one towards life goals (Gilbert, 2005). However, the CFT literature, does not discuss how drive can be measured or balanced. As with compassion, drive is multifaceted, it is also susceptible to individual differences and types of clinical presentation, making

measurement and group comparisons complicated. For example, some individuals may have an up-regulated drive system with abundant seeking (e.g., gambling, over-working, competitiveness) and here treatment would be beneficial if leading to down-regulation (Gilbert, 2009b). Other individuals, with a down-regulated drive system (e.g., reporting few meaningful activities, low motivation, underachieving) may benefit from treatment that leads to up-regulation. Drive system responses will also interact with threat and soothing in complex ways, and drive responses may be alternatively triggered by threat or soothing system activation (Gilbert, 2009b). The nature of such complex interactions requires careful elucidation, and definitions of, and ways to measure, the drive system must be developed by CFT researchers before any conclusions about how it changes in response to intervention can be made.

Thus far, drive responses have been defined in behavioural or physiological terms. The drive system is linked to the sympathetic nervous system (SNS; Gilbert, 2014), and CFT studies not meeting inclusion criteria for this review have measured SNS responses, particularly heart rate variability (HRV; e.g. Matos, Duarte, Duarte, Pinto-Gouveia, Petrocchi, Basran, & Gilbert, 2017a) as a proxy of drive response. Preliminary evidence from a study where participants self-practiced CMT techniques found a reduction in HRV in the CMT practice group, but not in a control group (Matos et al., 2017a). Developing and utilising these physiological markers offers one way for researchers to measure both up- and down-regulation of the drive system in response to CFT interventions, provided individual differences can be accounted for. It is also noteworthy that SNS responses are likely to be associated not only with drive but also with the soothing system, whilst the parasympathetic nervous system may be associated with the threat system. This may limit the specificity of physiological measures when assessing changes in each emotion regulation system, and further definition and research is required.

In summary, despite being central to the CFT model, and theoretically proposed to change in response to intervention, none of the included studies in this review measured drive response. Future research must improve our definition, understanding and measurement of drive system responses, with a long-term aim to assess drive as a potential mechanism of change in CFT interventions.

Evidence surrounding the threat system

All 16 studies measured at least one threat response: shame, self-criticism, anxiety, and depression. CFT intervention was clearly associated with a reduction in external shame. However, evidence for change in internal shame was equivocal, measured only by two studies. Shame has been subtyped as it has differential relationships to psychopathology (Thibodeau et al., 2011), and CFT research needs to includes measures of both if it is to offer clear conclusions about the ways in which CFT can affect shame.

Self-criticism was measured by ten studies, but variability in the measures prevented clear comparison, and the poor quality of studies made any clear conclusion impossible. Overall, findings for changes in self-criticism following CFT were mixed. Most studies reported reductions in self-criticism, but this often failed to reach significance. Of the higher quality evidence, results were mixed, with significantly greater reductions in self-criticism after CFT (compared to controls) reported by one RCT (Kelly et al., 2017), but not another (Noorbala et al., 2013). Again, self-criticism is measured in terms of multiple forms and functions, further clouding the issue. These distinctions help to clarify the relationship between self-criticism and adaptive behaviour, but as yet the theory of CFT has not indicated the validity of subtyping self-criticism or how this relates to other components of the model.

Depression was measured in 11 of the studies, and anxiety in eight. Depression and anxiety are considered to be threat system responses, but are not specific to CFT and this is complicated by the fact that they tend to be primary outcomes for other interventions. Most studies reported reduced anxiety and depression following CFT intervention. One RCT did not find group differences in anxiety (Beaumont et al., 2012), although this could be because the control group included CBT, an effective anxiety treatment. Depression is considered as a threat system response in CFT. However, it is unclear if depression is a measure of threat, or if it's a response associated with the perception of threat. There are similarities between behavioural symptoms of depression symptoms (e.g., apathy), and the drive responses described in the CFT literature (e.g., lack of motivation). As such, it is unclear if depression is purely a measure of threat, and additionally, depression is often targeted by other psychological interventions (e.g., CBT). It is reasonable, therefore, to assume that CFT would not necessarily reduce depression and anxiety more significantly

than CBT. However, CFT could be an effective supplement to therapy where shame, guilt and self-criticism are impacting on depression or anxiety (Lee, 2009).

Strengths and limitations

To our knowledge, this is the first systematic review that attempts to assess whether CFT interventions lead to specific changes in the CFT emotion regulation systems. With interest and research in the area growing, this timely review aimed to support researchers in considering how to measure change in future studies of CFT. This is an important part of developing and improving outcome.

The review indicates a need for clarity around the definition of the CFT constructs, and further development of tools used to measure these. The CFT model indicates the dynamic nature of the emotion regulation systems, and a systematic review cannot offer insight into the nature and directionality of such interactions. However, it does indicate the need for studies to be designed in a way that allows these constructs, and interactions between them to be properly examined.

Previous reviews of CFT interventions have focused on psychotherapeutic outcomes, and this review offers a conceptual extension. A strength of this review is the inclusion of only substantive CFT interventions, meaning that outcomes can be meaningfully compared as they share a clear theoretical underpinning (Kirby, 2017), which can therefore be tested. Other variants of compassion-based interventions (e.g., compassion cultivation training, mindful self-compassion etc.), and CFT self-help interventions were excluded, as they are distinct from substantive CFT interventions (Leaviss & Uttley, 2015). However, some studies have demonstrated promising results from brief CFT psychoeducation followed by self-practice of CFT exercises (e.g. Kelly & Carter, 2015; Matos, Duarte, Duarte, Gilbert, & Pinto-Gouveia, 2017b). It has been argued that 'light-touch' CFT interventions might be useful to develop for certain populations (e.g. in schools and workplaces; Kirby, 2017), and this could be the focus of a future review to triangulate the evidence for CFT mechanisms.

Additionally, CFT was developed to build on CBT theory and approaches to understanding and treating psychopathology. Preliminary comparison of CFT and CBT in two RCTs in this review indicates that CFT may evoke increased self-compassion over and

above CBT (Beaumont et al., 2016a; Beaumont et al., 2012), indicating that CFT actively increases soothing system responses, as suggested by the model. Most researchers use TAU as a comparator, so non-specific therapeutic factors (e.g., therapeutic alliance) cannot be properly controlled. Conclusions would be more robust if future studies compare CFT to other active therapies such as CBT, and to relate this back to the CFT model.

Further research

With most CFT intervention studies small-scale, observational, and of poor to medium quality, firm conclusions about changes in components of the CFT model following intervention are not possible. Studies have not included a design which would allow for proper assessment of mechanisms underpinning change. To do this, future studies should be designed to test for potential moderators and mediators of CFT (Kazdin, 2007). Researchers should also endeavour to include measures of all three emotion regulation systems, and attempt to use consistent measurement allowing for comparison between studies. Including qualitative assessment of participants' experiences of CFT interventions might enhance our understanding of changes to threat, soothing and drive, how best to measure these, and how they interact. In time, it may then be possible to conduct meta-analytic exploration of mediators for CFT interventions.

Conclusions

Despite growing interest in CFT as a transdiagnostic treatment, research has not systematically examined the association between CFT interventions and the threat, drive and soothing systems. This systematic review suggests that evidence for each system is variable and limited. Understanding the association between CFT interventions and these systems is hampered by a lack of controlled studies, and the variability and inadequacy of the outcome measures reported. However, CFT interventions are associated with increases in self-compassion, and concomitant decreases in shame, and self-criticism. Development of our understanding of the processes and factors involved in CFT, and associated change, is a crucial part of developing the CFT evidence base, which in turn will inform clinical practice. As such, further controlled trials which examine mechanisms of change are needed in order to systematically examine the effects of CFT interventions.

Key practitioner messages

- Despite growing interest in CFT as a transdiagnostic treatment, research has not systematically examined the association between CFT interventions and the threat, drive and soothing systems.
- This systematic review found that CFT interventions are associated with increases in self-compassion, and concomitant decreases in shame, and self-criticism.
- However, evidence for each CFT system (soothing, threat and drive) is variable and limited, and understanding the association between CFT interventions and these systems is hampered by a lack of controlled studies, and the variability and inadequacy of the outcome measures reported.
- Researchers examining CFT should endeavour to include measures of all three emotion regulation systems, and attempt to use consistent measurement allowing for comparison between studies.

References

Allan, S., & Gilbert, P. (1995). A social comparison scale: Psychometric properties and relationship to psychopathology. *Personality and Individual Differences, 19*(3), 293-299.

Allan, S., & Gilbert, P. (1997). Submissive behaviour and psychopathology. *British Journal of Clinical Psychology, 36*(4), 467-488.

Andrews, B., Qian, M., & Valentine, J. D. (2002). Predicting depressive symptoms with a new measure of shame: The Experience of Shame Scale. *British Journal of Clinical Psychology, 41*(1), 29-42.

Ashworth, F., Clarke, A., Jones, L., Jennings, C., & Longworth, C. (2015). An exploration of compassion focused therapy following acquired brain injury. *Psychology and Psychotherapy: Theory, Research and Practice, 88*(2), 143-162.

Baião, R., Gilbert, P., McEwan, K., & Carvalho, S. (2015). Forms of self-criticising/attacking & self-reassuring scale: Psychometric properties and normative study. *Psychology and Psychotherapy: Theory, Research and Practice, 88*(4), 438-452.

Bates, T. (2005). The expression of compassion in group cognitive therapy. In P. Gilbert (Ed.), *Compassion: conceptualisations, research and use in psychotherapy.* East Sussex, UK: Routledge.

Beaumont, E., Durkin, M., McAndrew, S., & Martin, C. R. (2016a). Using Compassion Focused Therapy as an adjunct to Trauma-Focused CBT for Fire Service personnel suffering with trauma-related symptoms. *The Cognitive Behaviour Therapist, 9*.

Beaumont, E., & Hollins Martin, C. (2015). A narrative review exploring the effectiveness of Compassion-Focused Therapy. *Counselling Psychology Review, 30*(1), 21-32.

Beaumont, E., Irons, C., Rayner, G., & Dagnall, N. (2016b). Does Compassion-Focused Therapy Training for Health Care Educators and Providers Increase Self-Compassion and Reduce Self-Persecution and Self-Criticism? *Journal of Continuing Education in the Health Professions, 36*(1), 4-10.

Beaumont, E., Jenkins, P., & Galpin, A. (2012). 'Being kinder to myself': a prospective comparative study, exploring post-trauma therapy outcome measures, for two groups of clients, receiving either cognitive behaviour therapy or cognitive

behaviour therapy and compassionate mind training. *Counselling Psychology Review, 27*(1), 31-43.

Beck, A. T., Steer, R. A., & Brown, G. K. (1996). Beck depression inventory-II. *San Antonio, 78*(2), 490-498.

Birchwood, M., Jackson, C., Brunet, K., Holden, J., & Barton, K. (2012). Personal beliefs about illness questionnaire-revised (PBIQ-R): Reliability and validation in a first episode sample. *British Journal of Clinical Psychology, 51*(4), 448-458.

Boersma, K., Håkanson, A., Salomonsson, E., & Johansson, I. (2015). Compassion focused therapy to counteract shame, self-criticism and isolation. A replicated single case experimental study for individuals with social anxiety. *Journal of Contemporary Psychotherapy, 45*(2), 89-98.

Braehler, C., Gumley, A., Harper, J., Wallace, S., Norrie, J., & Gilbert, P. (2013). Exploring change processes in compassion focused therapy in psychosis: Results of a feasibility randomized controlled trial. *British Journal of Clinical Psychology, 52*(2), 199-214.

Clapton, N. E., Williams, J., Griffith, G. M., & Jones, R. S. (2017). 'Finding the person you really are… on the inside' Compassion focused therapy for adults with intellectual disabilities. *Journal of Intellectual Disabilities*, 1744629516688581.

Cook, D. R. (1988). Measuring shame: The internalized shame scale. *Alcoholism Treatment Quarterly, 4*(2), 197-215.

Cooper, R., & Frearson, J. (2017). Adapting compassion focused therapy for an adult with a learning disability—A case study. *British Journal of Learning Disabilities, 45*(2), 142-150.

Costello, C., & Comrey, A. L. (1967). Scales for measuring depression and anxiety. *The Journal of Psychology, 66*(2), 303-313.

Cuppage, J., Baird, K., Gibson, J., Booth, R., & Hevey, D. (2017). Compassion focused therapy: Exploring the effectiveness with a transdiagnostic group and potential processes of change. *British Journal of Clinical Psychology*.

Davidson, R. J., & Harrington, A. (2001). *Visions of compassion: Western scientists and Tibetan Buddhists examine human nature*: Oxford University Press.

Davidson, R. J., & Harrington, A. (2002). *Visions of compassion: Western scientists and Tibetan Buddhists examine human nature*: Oxford University Press.

Depue, R. A., & Morrone-Strupinsky, J. V. (2005). A neurobehavioral model of affiliative bonding: Implications for conceptualizing a human trait of affiliation. *Behavioral and Brain Sciences, 28*(3), 313-349.

Derrogatis, L., Lipman, R., & Covi, I. (1973). The SCL-90: An outpatient psychiatric rating scale. *Psychopharmacology Bulletin, 9*, 13-28.

Fehr, B., Sprecher, S., & Underwood, L. G. (2009). *The science of compassionate love: Theory, research, and applications*: John Wiley & Sons.

Germer, C. K., & Siegel, R. D. (2012). *Wisdom and compassion in psychotherapy: Deepening mindfulness in clinical practice*: Guilford Press.

Gilbert, P. (1997). The evolution of social attractiveness and its role in shame, humiliation, guilt and therapy. *British Journal of Medical Psychology, 70*(2), 113-147.

Gilbert, P. (1998). The evolved basis and adaptive functions of cognitive distortions. *Psychology and Psychotherapy: Theory, Research and Practice, 71*(4), 447-463.

Gilbert, P. (2000). The relationship of shame, social anxiety and depression: The role of the evaluation of social rank. *Clinical Psychology & Psychotherapy, 7*(3), 174-189.

Gilbert, P. (2002). Evolutionary approaches to psychopathology and cognitive therapy. *Cognitive psychotherapy: an International quarterly, 16*, 263-294.

Gilbert, P. (2003). Evolution, social roles, and the differences in shame and guilt. *Social Research*, 1205-1230.

Gilbert, P. (2005). *Compassion: Conceptualisations, research and use in psychotherapy*: Routledge.

Gilbert, P. (2009a). *The Compassionate Mind*. London: Constable and Robinson.

Gilbert, P. (2009b). Introducing compassion-focused therapy. *Advances in psychiatric treatment, 15*(3), 199-208.

Gilbert, P. (2010). *Compassion-focused therapy: Distinctive features (CBT distinctive features)*. . London: Routledge.

Gilbert, P. (2014). The origins and nature of compassion focused therapy. *British Journal of Clinical Psychology, 53*(1), 6-41.

Gilbert, P., Catarino, F., Duarte, C., Matos, M., Kolts, R., & Stubbs, J. (2017). Three orientations of compassion, the development of self-report measures and their link to depression. *Journal of Compassionate Health Care, 4*(4).

Gilbert, P., Clarke, M., Hempel, S., Miles, J., & Irons, C. (2004). Criticizing and reassuring oneself: An exploration of forms, styles and reasons in female students. *British Journal of Clinical Psychology, 43*(1), 31-50.

Gilbert, P., McEwan, K., Matos, M., & Rivis, A. (2011). Fears of compassion: Development of three self-report measures. *Psychology and Psychotherapy: Theory, Research and Practice, 84*(3), 239-255.

Gilbert, P., McEwan, K., Mitra, R., Richter, A., Franks, L., Mills, A., . . . Gale, C. (2009). An exploration of different types of positive affect in students and patients with bipolar disorder. *Clinical Neuropsychiatry, 6*(4), 135-143.

Gilbert, P., & Procter, S. (2006). Compassionate mind training for people with high shame and self-criticism: Overview and pilot study of a group therapy approach. *Clinical Psychology & Psychotherapy, 13*(6), 353-379.

Gilbert, P. E., & Andrews, B. E. (1998). *Shame: Interpersonal behavior, psychopathology, and culture*: Oxford University Press.

Gilligan, J. (2003). Shame, guilt, and violence. *Social Research*, 1149-1180.

Goss, K., Gilbert, P., & Allan, S. (1994). An exploration of shame measures—I: The other as Shamer scale. *Personality and Individual Differences, 17*(5), 713-717.

Gumley, A., Braehler, C., Laithwaite, H., Macbeth, A., & Gilbert, P. (2010). Narrative Recovery Style Scale. *Unpublished manuscipt.*

Harman, R., & Lee, D. (2010). The role of shame and self-critical thinking in the development and maintenance of current threat in post-traumatic stress disorder. *Clinical Psychology & Psychotherapy, 17*(1), 13-24.

Hermanto, N., Zuroff, D. C., Kopala-Sibley, D. C., Kelly, A. C., Matos, M., Gilbert, P., & Koestner, R. (2016). Ability to receive compassion from others buffers the depressogenic effect of self-criticism: A cross-cultural multi-study analysis. *Personality and Individual Differences, 98*, 324-332.

Higgins, J. P., Altman, D. G., Gøtzsche, P. C., Jüni, P., Moher, D., Oxman, A. D., . . . Sterne, J. A. (2011). The Cochrane Collaboration's tool for assessing risk of bias in randomised trials. *BMJ, 343*, d5928.

Higgins, J. P., & Green, S. (2011). *Cochrane handbook for systematic reviews of interventions* (Vol. 4): John Wiley & Sons.

Irons, C. (2014). *Compassion: Evolutionary understandings and the development of Compassion Focused Therapy (CFT)*. London: Royal College of Psychiatrists.

Jarden, A. (2011). *Positive Psychological Assessment: A practical introduction to empirically validated research tools for measuring wellbeing.* http://www.aaronjarden.com/.

Judge, L., Cleghorn, A., McEwan, K., & Gilbert, P. (2012). An exploration of group-based compassion focused therapy for a heterogeneous range of clients presenting to a community mental health team. *International Journal of Cognitive Therapy, 5*(4), 420-429.

Kazdin, A. E. (2007). Mediators and mechanisms of change in psychotherapy research. *Annual Review of Clinical Psychology, 3*, 1-27.

Kelly, A. C., & Carter, J. C. (2015). Self-compassion training for binge eating disorder: A pilot randomized controlled trial. *Psychology and Psychotherapy: Theory, Research and Practice, 88*(3), 285-303.

Kelly, A. C., Wisniewski, L., Martin-Wagar, C., & Hoffman, E. (2017). Group-Based Compassion-Focused Therapy as an Adjunct to Outpatient Treatment for Eating Disorders: A Pilot Randomized Controlled Trial. *Clinical Psychology & Psychotherapy, 24*(2), 475-487.

Kirby, J. N. (2017). Compassion interventions: the programmes, the evidence, and implications for research and practice. *Psychology and Psychotherapy: Theory, Research and Practice, 90*(3), 432-455.

Laithwaite, H., O'Hanlon, M., Collins, P., Doyle, P., Abraham, L., Porter, S., & Gumley, A. (2009). Recovery after psychosis (RAP): A compassion focused programme for individuals residing in high security settings. *Behavioural and Cognitive Psychotherapy, 37*(5), 511-526.

Leaviss, J., & Uttley, L. (2015). Psychotherapeutic benefits of compassion-focused therapy: An early systematic review. *Psychological Medicine, 45*(05), 927-945.

LeDoux, J. (1998). *The emotional brain: The mysterious underpinnings of emotional life*: Simon and Schuster.

Lee, D. A. (2009). Compassion focused cognitive therapy for shame-based trauma memories and

flashbacks in PTSD. In N. Grey (Ed.), *A casebook of cognitive therapy for traumatic stress reactions*. London: Routledge.

Longe, O., Maratos, F. A., Gilbert, P., Evans, G., Volker, F., Rockliff, H., & Rippon, G. (2010). Having a word with yourself: Neural correlates of self-criticism and self-reassurance. *Neuroimage, 49*(2), 1849-1856.

Lovibond, P. F., & Lovibond, S. H. (1995). The structure of negative emotional states: Comparison of the Depression Anxiety Stress Scales (DASS) with the Beck Depression and Anxiety Inventories. *Behaviour Research and Therapy, 33*(3), 335-343.

Lucre, K. M., & Corten, N. (2013). An exploration of group compassion-focused therapy for personality disorder. *Psychology and Psychotherapy: Theory, Research and Practice, 86*(4), 387-400.

Matos, M., Duarte, C., Duarte, J., Pinto-Gouveia, J., Petrocchi, N., Basran, J., & Gilbert, P. (2017a). Psychological and Physiological Effects of Compassionate Mind Training: a Pilot Randomised Controlled Study. *Mindfulness, 8*(6), 1699-1712.

Matos, M., Duarte, J., Duarte, C., Gilbert, P., & Pinto-Gouveia, J. (2017b). How One Experiences and Embodies Compassionate Mind Training Influences Its Effectiveness. *Mindfulness*, 1-12.

Mayhew, S. L., & Gilbert, P. (2008). Compassionate mind training with people who hear malevolent voices: A case series report. *Clinical Psychology & Psychotherapy, 15*(2), 113-138.

Neff, K. (2003a). Self-compassion: An alternative conceptualization of a healthy attitude toward oneself. *Self and identity, 2*(2), 85-101.

Neff, K. D. (2003b). The development and validation of a scale to measure self-compassion. *Self and identity, 2*(3), 223-250.

Neff, K. D. (2016). The self-compassion scale is a valid and theoretically coherent measure of self-compassion. *Mindfulness, 7*(1), 264-274.

Neff, K. D., Kirkpatrick, K. L., & Rude, S. S. (2007). Self-compassion and adaptive psychological functioning. *Journal of research in personality, 41*(1), 139-154.

Noorbala, F., Borjali, A., Ahmadian-Attari, M. M., & Noorbala, A. A. (2013). Effectiveness of compassionate mind training on depression, anxiety, and self-criticism in a group of Iranian depressed patients. *Iranian journal of psychiatry, 8*(3), 113.

Peterson, J., Welch, V., Losos, M., & Tugwell, P. (2011). The Newcastle-Ottawa scale (NOS) for assessing the quality of nonrandomised studies in meta-analyses.

Raes, F., Pommier, E., Neff, K. D., & Van Gucht, D. (2011). Construction and factorial validation of a short form of the self-compassion scale. *Clinical Psychology & Psychotherapy, 18*(3), 250-255.

Rector, N. A., Bagby, R. M., Segal, Z. V., Joffe, R. T., & Levitt, A. (2000). Self-criticism and dependency in depressed patients treated with cognitive therapy or pharmacotherapy. *Cognitive Therapy and Research, 24*(5), 571-584.

Rockliff, H., Gilbert, P., McEwan, K., Lightman, S., & Glover, D. (2008). A pilot exploration of heart rate variability and salivary cortisol responses to compassion-focused imagery. *Journal of Clinical Neuropsychiatry, 5*(3), 132-139.

Strauss, C., Taylor, B. L., Gu, J., Kuyken, W., Baer, R., Jones, F., & Cavanagh, K. (2016). What is compassion and how can we measure it? A review of definitions and measures. *Clinical Psychology Review, 47*, 15-27.

Thibodeau, R., Kim, S., & Jorgensen, R. S. (2011). Internal Shame, External Shame, and Depressive Symptoms: A Meta-Analytic Review.

Thompson, R., & Zuroff, D. C. (2004). The Levels of Self-Criticism Scale: comparative self-criticism and internalized self-criticism. *Personality and Individual Differences, 36*(2), 419-430.

Viswanathan, M., Ansari, M. T., Berkman, N. D., Chang, S., Hartling, L., McPheeters, M., . . . Tsertsvadze, A. (2012). Assessing the risk of bias of individual studies in systematic reviews of health care interventions.

Zigmond, A. S., & Snaith, R. P. (1983). The hospital anxiety and depression scale. *Acta Psychiatrica Scandinavica, 67*(6), 361-370.

Executive Summary

Holly Panting
HP442@bath.ac.uk
Clinical Psychologist in Training

August 2018

Word count: 778

Examining the links between Eating Disorders and Irritable Bowel Syndrome

Executive Summary

Why did we do this study?

People with eating disorders are more likely to have irritable bowel syndrome (IBS) than the general population. People who have both eating disorders and IBS tend to have less positive treatment outcomes, and poorer quality of life. However, there are only a few studies that have examined the links between eating disorders and IBS, and the links are not well understood. These studies suggest that eating disorder beliefs (and related behaviours) are associated with IBS symptoms. However, these studies have not looked at the specific types of beliefs which make people with eating disorders more vulnerable to developing IBS.

Research has also shown that people with eating disorders, and people with IBS both have high levels of perfectionism. As such, perfectionism might be associated with the links between eating disorders and IBS. However, studies have not looked at perfectionism in people who have both disorders.

This study aimed to examine the links between eating disorders and IBS in a sample of women, so that we could better understand them. This study looked at the role of specific beliefs, and related behaviours, which we thought might link eating disorders and IBS. We also aimed to look at whether there is an association with perfectionism in the links between eating disorder and IBS.

What did we do in this study?

A total of 208 women participated in this study by completing a pack of questionnaires. We recruited four different groups so that we could compare between them: (1) women with eating disorders; (2) women with IBS; (3) women with both eating disorders and IBS; and (4) healthy women (who have neither condition). The questionnaires asked about eating disorder symptoms, behaviours, and beliefs, IBS symptoms, specific IBS-related beliefs and behaviours, and perfectionism.

What did we find?

Our study found the following results:

- In the sample of women with eating disorders in this study, 77% met the criteria for IBS.
- Women with eating disorders had more IBS symptoms than healthy women.
- Women with eating disorders also had more IBS-related beliefs and behaviours than healthy women. The IBS beliefs and behaviors of women with both eating disorders and IBS were similar to women with IBS.
- Perfectionism did not seem to be associated with the links between eating disorders and IBS.

What does this mean for how we can help people with eating disorders and IBS?

Clinicians working with women with eating disorders can be aware of the high prevalence of IBS in this patient group. It would be helpful for clinicians to assess for IBS symptoms, beliefs and behaviours for the patients that they see. It is likely that around two-thirds of patients on outpatient eating disorder team caseloads will also have IBS. The IBS is likely to impact on both treatment outcome and quality of life. It might be helpful to assess and address IBS-related beliefs and behaviours, perhaps using existing IBS treatment protocols (e.g. cognitive behavioural therapy). Further research is needed to develop treatment protocols that will be helpful for women who have both eating disorders and IBS.

How reliable were the findings?

In this study, we had a relatively large sample size which means that we can be fairly confident in the findings. The design of this study allowed us to compare key variables between the different groups of women, and it allowed us to compare against healthy women controls. However, there are a few limitations which may affect the reliability of these findings:

- The way that we asked people to take part (contacting NHS services, posters and social media adverts) might mean that people with IBS were more likely to take part

in the study. This means that the proportion of women with IBS in the sample might be overestimated.

- The findings of this study are based on the sample of people who participated, and so they might not apply to everyone with eating disorders and IBS.
- Some of the questionnaires that we used in this study had not previously been used for people who have eating disorders, and this means that they might not be reliable. However, we tested them in this study and the results showed that the questionnaires appear to have good reliability.

What can we do next?

Future research is needed to adapt and develop psychological interventions for people who have both eating disorders and IBS. Further research is needed to replicate the findings of this study in a larger sample of people with eating disorders, who are recruited in a more systematic way. It would be helpful to find out what factors make women with eating disorders more vulnerable to developing IBS.

Connecting Narrative

Holly Panting
HP442@bath.ac.uk
Clinical Psychologist in Training

August 2018

Word count: 3179

Connecting Narrative

The opportunity to complete a portfolio of research projects, with a range of different foci, was a main attraction of the Bath Course. Of particular interest was the emphasis on producing publishable studies: I have always aspired to be both a consumer and producer of research. However, the prospect of developing research ideas for the different projects, whilst exciting, was also daunting. Prior to starting training, I had been involved in a few different research projects, and my clinical experiences had been quite varied, and as such my research interests were largely broad and defined by opportunities around me. Given this, the scope for potential research areas for my doctorate projects felt vast.

With this in mind, I purposefully aimed to keep my research areas broad. The Main Research Project examines the links between eating disorders and IBS. The Critical Review of the Literature investigates whether Compassion Focused Therapy interventions are associated with changes in the theoretical components of the model. The Service Improvement Project examined ways in which reflective practice could be better integrated into Recovery Team working. This narrative allows an opportunity to reflect on the process of completing each of these research projects, and subsequent learning.

Main Research Project

Examining the links between Eating Disorders (ED) and Irritable Bowel Syndrome (IBS): what are the roles of specific cognitions in linking ED and IBS, and is perfectionism a vulnerability factor?

Developing an idea

Prior to starting training, I worked in an Eating Disorders Service, which I really enjoyed. I approached the Lead Clinician, Sam Clark-Stone, to ask if he might be interested in supervising a research project in eating disorders (ED), with potential to recruit participants from the service. We met for a brainstorming session in the first few months of

training to think of potential research ideas, and Sam mentioned the high comorbidity between ED and irritable bowel syndrome (IBS). Examination of the literature around ED and IBS revealed a gap in the understanding of the links between the two disorders, and we thought that this would make an interesting project.

I approached Bath course tutors to see if anyone would be willing to supervise the project, and Emma Griffith expressed that, though it was not her specialism, she had completed her doctorate research on ED and so had some knowledge in this area. Emma approached Paul Salkovskis to be an additional supervisor for the project due to his knowledge and experience of working with IBS. I was keen to have involvement from someone with personal experience in the design and process of this research project from the start, and I approached Sam who put me in touch with a patient who has both an ED and IBS. We met to discuss ideas for the study design, and had subsequent contact via email and telephone at key points throughout the research process. This input was invaluable to the project.

Following meetings with supervisors, we agreed that we would use a within- and between-groups approach to examining the links between ED and IBS (measuring key variables of interest), which fitted with and extended the existing literature. I presented the proposed project to the PAS panel; however, I received feedback that the project needed more of a theoretical underpinning. This felt challenging as existing research in this area has not examined a theoretical rationale for the links between the conditions. However, I met with supervisors and together we thought about the theoretical reasons why people with ED might be more vulnerable to both developing IBS, and for IBS to be maintained over time. We agreed to use a CBT approach to understanding the links between the two disorders, and decided to measure key cognitions which we hypothesised to be relevant.

Ethics

The process of obtaining ethical approval for this study was as follows:

- NHS IRAS Research Ethics Committee (REC) approval was sought. This process required planning of the study processes in advance, and consideration of

management aspects of the research. I applied for REC panel Proportionate Review, which meant that I received a relatively fast response to my application. Following the REC panel, the project also had to be approved by the HRA.

- University of Bath Psychology Department Ethical Committee approval was obtained.
- Local NHS services Research and Development departments were then contacted to seek approval to recruit participants from NHS services. Three NHS Trusts were approached: 2gether Foundation Trust for Gloucestershire, Avon and Wiltshire Partnership Trust, and Oxford Health Foundation Trust.

Process of research

Participants were recruited in different ways: (1) patients with eating disorders were approached by their NHS eating disorder clinicians with information about the study; (2) posters advertising the research were displayed in waiting areas of NHS services for people with eating disorders (in three different NHS Trusts), in one Recovery Service, and at the University of Bath; and (3) online and social media advertisements about the research. Recruitment for the study commenced in March 2017, which gave approximately one year for active recruitment of participants. Though it felt a rush to obtain ethical approval in time to allow for this length of recruitment, I am pleased that I managed to do this as it allowed for sufficient numbers of participants to be recruited. A power calculation for the study suggested that 28 participants were needed in each of the four groups, and recruitment continued until this number had been reached in all groups. I was really pleased (and relieved) to have managed to recruit sufficient participants for the study, and feel that this has allowed for firmer conclusions to be drawn from the results of the study.

On completion of the questionnaire, participants were offered a £5 Amazon voucher to thank them for their time, which I hoped would incentivise participation. However, I hadn't appreciated the logistical difficulties around paying participants vouchers. In addition, the study was advertised online and unfortunately someone attempted to obtain multiple vouchers without completing the questionnaire. Though stressful and upsetting at the time, luckily it was relatively straight forward to prevent this from happening again, and to establish that none of the data had been given falsely, which was a concern. With

hindsight, I think that most people would have probably participated in the research without the voucher incentive, and this would have made the research process simpler and less stressful for me.

Data for this study were mostly collected via a secure online questionnaire, which allowed participants to complete the questionnaire remotely. This method meant that the questionnaire was easily accessible to participants, and therefore probably facilitated participation, giving us a good final sample size. In addition, this method allowed for downloading data at the end of recruitment directly into a database. A small number of participants completed a paper questionnaire, and this data could then be added into the database prior to data cleaning and analysis.

Challenges and personal learning

The NHS ethical approval took around six months to obtain. The long time-frame was challenging in terms of keeping the momentum going with the project. However, having the experience of going through this process has been invaluable to me in terms of learning about conducting research in the NHS. I feel that the learning from this experience will be helpful for future NHS ethics applications.

I have really enjoyed the opportunity to design and carry out this research project, and feel that I have learnt a lot about the process of research as a result. I enjoyed writing the study as a publishable paper, and supervision around this has improved my writing style and confidence. It was positive to have obtained results from this study which broadly confirmed my hypotheses. It had felt challenging to consider the theoretical links between ED and IBS when designing the study, and it was affirming having done this to have then found positive results in line with the theory. This has allowed me to firstly understand the importance of psychological theory, and secondly to have a greater understanding and experience of linking theory to practice.

Contribution to clinical practice

This research project extends the findings of previous research in this area. I plan to submit the paper for publication, and hope to present it at an eating disorders conference. I

also plan to present it to the Gloucestershire Eating Disorders Team, who supported the recruitment of participants for this research, with the hope that it will inform to their clinical practice. The research has clinical implications in terms of how eating disorder clinicians assess for co-morbid IBS, and how they adjust treatment in response.

Service Improvement Project

Reflective practice is key to promoting psychologically informed care. Are there ways in which reflective practice could be better integrated into Recovery Team working?

Developing an idea

The initial idea for this research project came from Hilary Priestman, who is the Lead Psychologist of the Gloucester Recovery Psychology Team, where I completed my first training placement. Hilary had noticed low staff attendance at reflective practice (RP) sessions, and wondered if there might be things that RP facilitators could do to improve both staff perceptions of the usefulness of RP, and subsequently their attendance at sessions. I had previously run RP groups for staff prior to training, and felt that the project would be interesting and useful. Another psychologist reflective practice facilitator from the Recovery Team, Laura Hill, also had an interest in developing the RP sessions on offer to staff, and agreed to be second supervisor for the project. I approached Bath course staff to establish a supervisor for the project, and Megan Wilkinson-Tough expressed an interest, as she had previously run RP groups in an inpatient ward, and experienced similar difficulties with staff attendance.

Ethics

This project did not directly involve service users, and as such NHS ethical approval was not required. Ethical approval was sought from the University of Bath Psychology Department Ethical Committee. In addition, the NHS Trust Research and Development department was contacted to seek approval for the study.

Process of research

In terms of the research questions for the project, we wanted to seek the candid views of staff around RP, and ensure a breadth of different opinions were captured, but also to obtain a rich narrative around staff experiences of RP. As such, we decided that a mixed-method approach would be most appropriate. Early on in the project, Hilary and I met with the Recovery Team managers, who were supportive of the research, and instrumental in recruiting participants for the research stages. Firstly, I conducted a focus group with Recovery Team staff in order to obtain a rich understanding of their experiences of RP, and their views on barriers and enablers to attending sessions. The focus group was transcribed and analysed thematically, and the themes derived were then used alongside relevant literature in order to develop a survey about RP. The survey was circulated to Recovery Team staff. Following this, the data were collated and recommendations made to RP facilitators.

Challenges and personal learning

This project was my first experience of using formal research methods applied to service improvement, and as such has been invaluable learning. I have enjoyed the application of research methods to a 'real-world' problem within a service, and I aspire to conduct further service improvement projects in this way when working in a qualified post.

I found developing the recommendations difficult as I felt that, as a trainee, I didn't have knowledge or experience to offer the RP facilitators. I met with Megan and she guided me to focus on the data and the existing evidence base around RP. This was really helpful, as it taught me to be led by the evidence, and I think this is important for clinical psychologists. This learning prompted me to include a rationale for each recommendation in the final paper.

Contribution to clinical practice

Following the recommendations made, the RP facilitators made several changes. For example, the number of RP sessions on offer each week tripled, and the times were changed to better suit staff. In addition, following meetings with Team Managers, a service

statement of commitment to RP was created. The Team Managers also asked me to present the project to the Recovery Team on their away day, to increase the profile of RP.

This project extends the limited research on RP in NHS settings, and is the first to examine RP in a community team. The lack of research and evidence base surrounding RP really surprised me, as it has been offered to staff on most of my placements. In order to develop the evidence base in this area, I aim to submit the paper to a journal. Having completed a service improvement project whilst on training, I feel more able to undertake service-related research and hope to use these skills once in a qualified post.

Critical Review of the Literature

A systematic review examining whether Compassion Focused Therapy interventions are associated with changes in the theoretical components of the model: the threat, soothing and drive systems.

Developing an idea

I found developing an idea for the literature review the most challenging of all the projects, and it took me considerable time to develop. It was difficult to find an area of interest where there was a need for a review of the literature which hadn't already been done. I had a previous interest in Compassion Focused Therapy (CFT). I attended training on CFT before starting the course, and had developed and run a CFT group for people with learning disabilities with a supervisor in a previous role. Having had this experience, I was aware that the evidence base for CFT was in its infancy, but fast-growing, and wondered if this might be an area where a critical review would be helpful. The course assigned Liz Marks as my supervisor for this project, as she has experience and knowledge of third-wave CBT interventions.

In early meetings with Liz, we discussed the need to extend beyond existing literature reviews in this area, and to add something additional to the current evidence (which included a review of CFT outcomes). We discussed the idea of examining whether

CFT interventions provided evidence for the CFT model, which had not in itself been rigorously tested in the way that other models have (e.g. CBT). I was keen to conduct a systematic review as I had no experience of this type of review previously.

Process of research

Relevant databases were searched using pre-defined search terms, and papers were downloaded into Endnote and subsequently Covidence in order to screen titles and abstracts against inclusion and exclusion criteria. I found this process particularly challenging to complete as it was particularly time-consuming, and it was less simplistic to complete that I had imagined.

Following discussion with Liz, we had agreed to keep the search terms deliberately broad in order to include as many CFT studies as possible. However, on completing the searches I ended up with almost 6000 papers to screen which was an enormous task. This task took several months to complete, particularly as I was juggling this alongside other course demands. As I was keen to conduct a systematic review, it felt important to include more than one reviewer. I established a reciprocal arrangement with another trainee, whereby we acted as second reviewer for each other. The second reviewer screened 10% of papers' titles and abstracts, and there was a 99% agreement between reviewers, which reached 100% after discussion.

Challenges and personal learning

This was the most challenging research project I have completed. The literature review was described to be the easiest and quickest doctorate research project; however, this was not my experience. I feel that having been through the process of conducting a systematic review has allowed me to learn how to critically appraise research evidence. This review examined whether current evidence fits with hypotheses made by the CFT model, and this was complex and complicated, and tested both my knowledge of the model and my confidence in conducting this type of project. However, I feel that having completed this type of systematic review, I now have a better understanding of how

theories and models can be tested, and I have learnt to think critically about theory and models.

Contribution to clinical practice

This review is the first to pull together existing research on CFT and examine associations with key constructs in the model, and as such is novel. I hope to submit the paper to a journal for publication, and I think that the findings will be useful and relevant to CFT practitioners and researchers.

Case studies

Throughout training I have completed five case studies; one for each placement. As such, each case study reflects clinical work from a different client population. Completing case studies for each placement felt, at times, challenging. For the first few case studies I think I felt pressure to evidence that the therapy was 'good enough' and to show a 'good outcome' for the client. However, writing five case studies has enabled me to learn about linking theory and practice, and as such I have developed my capabilities as a scientist-practitioner. In particular, I have learnt that the heuristic value of a case does not always come from a positive outcome. As I read through my final case study portfolio, I reflected on the development of both my clinical skills, and my research and writing capabilities throughout my time on training. My final case study was a pleasure to write, and I feel that I developed my writing style and proficiency as a result of writing the case studies.

Two of the case studies were single case experimental designs (SCED), which required outcome measures to be completed at regular intervals throughout therapeutic work. This felt initially challenging, as it felt that the regular measures would impact on the therapy work. However, I learnt to incorporate the measures into work with clients, for example, by logging them on a graph with clients to reflect on changes over time. I was surprised to learn that clients valued using the measures in this way. Completing the SCED

case studies has been key learning for me in terms of the utility of regular outcome measures, and the value of using outcome measures therapeutically with clients.

Overall reflections and ongoing interests

Managing the demands of the different research projects, whilst also working clinically and attending teaching has felt challenging, and was much harder than I had anticipated. However, I feel that the experience of completing these different research projects has been invaluable for learning about the application of research methods, and for developing understanding about the links between theory and clinical practice. As I move towards the end of training, I am keen to submit these research projects for publication. I endeavour to continue to be involved in research as I move into a qualified post, as I feel that it is an important part of the role of Clinical Psychologists, and something that I personally find enjoyable and interesting. I also aspire to continue to contribute to the evidence base through publication of research throughout my career.

Appendices

Holly Panting
HP442@bath.ac.uk
Clinical Psychologist in Training

Main Research Project Appendices

Appendix A. Ethical approval documentation

NHS
Health Research Authority

South Central - Oxford A Research Ethics Committee
Bristol Research Ethics Committee Centre
Whitefriars
Level 3 Block B
Lewins Mead
Bristol
BS1 2NT

Please note: This is the favourable opinion of the REC only and does not allow you to start your study at NHS sites in England until you receive HRA Approval

17 March 2017

Miss Holly Panting
Clinical Psychologist in Training
Taunton and Somerset NHS Foundation Trust
Doctorate in Clinical Psychology, 10W, University of Bath
Claverton Down
Bath
BA27AY

Dear Miss Panting

Study title:	**Examining the links between eating disorders and irritable bowel syndrome (IBS): what are the roles of specific cognitions in linking eating disorders and IBS, and is perfectionism a vulnerability factor?**
REC reference:	**17/SC/0102**
Protocol number:	**N/A**
IRAS project ID:	**217727**

Thank you for your letter of 6 March, responding to the Proportionate Review Sub-Committee's request for changes to the documentation for the above study.

The revised documentation has been reviewed and approved by the sub-committee.

We plan to publish your research summary wording for the above study on the HRA website, together with your contact details. Publication will be no earlier than three months from the date of this favourable opinion letter. The expectation is that this information will be published for all studies that receive an ethical opinion but should you wish to provide a substitute contact point, wish to make a request to defer, or require further information, please contact please contact hra.studyregistration@nhs.net outlining the reasons for your request.

Under very limited circumstances (e.g. for student research which has received an unfavourable opinion), it may be possible to grant an exemption to the publication of the study.

Confirmation of ethical opinion

On behalf of the Committee, I am pleased to confirm a favourable ethical opinion for the above research on the basis described in the application form, protocol and supporting documentation as revised.

Conditions of the favourable opinion

The REC favourable opinion is subject to the following conditions being met prior to the start of the study.

Management permission must be obtained from each host organisation prior to the start of the study at the site concerned.

Management permission should be sought from all NHS organisations involved in the study in accordance with NHS research governance arrangements. Each NHS organisation must confirm through the signing of agreements and/or other documents that it has given permission for the research to proceed (except where explicitly specified otherwise).

Guidance on applying for HRA Approval (England)/ NHS permission for research is available in the Integrated Research Application System, www.hra.nhs.uk or at http://www.rdforum.nhs.uk.

Where a NHS organisation's role in the study is limited to identifying and referring potential participants to research sites ("participant identification centre"), guidance should be sought from the R&D office on the information it requires to give permission for this activity.

For non-NHS sites, site management permission should be obtained in accordance with the procedures of the relevant host organisation.

Sponsors are not required to notify the Committee of management permissions from host organisations.

Registration of Clinical Trials

All clinical trials (defined as the first four categories on the IRAS filter page) must be registered on a publically accessible database. This should be before the first participant is recruited but no later than 6 weeks after recruitment of the first participant.

There is no requirement to separately notify the REC but you should do so at the earliest opportunity e.g. when submitting an amendment. We will audit the registration details as part of the annual progress reporting process.

To ensure transparency in research, we strongly recommend that all research is registered but for non-clinical trials this is not currently mandatory.

If a sponsor wishes to request a deferral for study registration within the required timeframe, they should contact hra.studyregistration@nhs.net. The expectation is that all clinical trials will be registered, however, in exceptional circumstances non registration may be permissible with prior agreement from the HRA. Guidance on where to register is provided on the HRA website.

It is the responsibility of the sponsor to ensure that all the conditions are complied with before the start of the study or its initiation at a particular site (as applicable).

Ethical review of research sites

The favourable opinion applies to all NHS sites taking part in the study, subject to management permission being obtained from the NHS/HSC R&D office prior to the start of the study (see "Conditions of the favourable opinion" above).

Approved documents

The documents reviewed and approved by the Committee are:

Document	*Version*	*Date*
Copies of advertisement materials for research participants [217727. Recruitment poster. Holly Panting]	V2	08 December 2016
Evidence of Sponsor insurance or indemnity (non NHS Sponsors only) [217727. University of Bath insurance certificate. 24.10.16]		24 October 2016
IRAS Checklist XML [Checklist_13022017]		13 February 2017
IRAS Checklist XML [Checklist_09032017]		09 March 2017
Letter from sponsor [217727. Sponsorship confirmation letter. Holly Panting 30.01.17]	V1	30 January 2017
Non-validated questionnaire [217727. Questionnaire battery. Holly Panting]	V6	12 January 2017
Other [217727. Participant debrief sheet. Holly Panting]	V4	04 January 2017
Other [217727. PRSC covering letter. Holly Panting]	V1	06 March 2017
Participant consent form [217727. Participant consent form - online. Holly Panting V4 07.02.17]	V4	07 February 2017
Participant consent form [217727. Participant consent form - paper version. Holly Panting. V4 07.02.17]	V4	07 February 2017
Participant information sheet (PIS) [217727. Participant information sheet. Holly Panting]	V4	07 February 2017
Referee's report or other scientific critique report [217727. Institutional assessment of research. Holly Panting]	V1	09 May 2016
Research protocol or project proposal [217727. Research protocol. V2 Holly Panting 08.12.16]	V2	08 December 2016
Summary CV for Chief Investigator (CI) [217727. CV for CI - Holly Panting. V1 05.01.17]	V1	05 January 2017
Summary CV for student [217727. CV for CI - Holly Panting. 05.01.17]	V1	05 January 2017
Summary CV for supervisor (student research) [217727. Supervisors CV - Emma Griffiths]	V1.	30 November 2016
Summary CV for supervisor (student research) [217727. Supervisors CV - Paul Salkovskis.]	V1	05 December 2016
Summary, synopsis or diagram (flowchart) of protocol in non technical language [217727. Lay summary. Holly Panting V3 04.01.17]	V3	04 January 2017
Summary, synopsis or diagram (flowchart) of protocol in non technical language [217727. Flowchart. Holly Panting]	V1	04 January 2017

Statement of compliance

The Committee is constituted in accordance with the Governance Arrangements for Research Ethics Committees and complies fully with the Standard Operating Procedures for Research

Ethics Committees in the UK.

After ethical review

Reporting requirements

The attached document "After ethical review – guidance for researchers" gives detailed guidance on reporting requirements for studies with a favourable opinion, including:

- Notifying substantial amendments
- Adding new sites and investigators
- Notification of serious breaches of the protocol
- Progress and safety reports
- Notifying the end of the study

The HRA website also provides guidance on these topics, which is updated in the light of changes in reporting requirements or procedures.

Feedback

You are invited to give your view of the service that you have received from the Research Ethics Service and the application procedure. If you wish to make your views known please use the feedback form available on the HRA website:
http://www.hra.nhs.uk/about-the-hra/governance/quality-assurance

We are pleased to welcome researchers and R & D staff at our RES Committee members' training days – see details at http://www.hra.nhs.uk/hra-training/

17/SC/0102	**Please quote this number on all correspondence**

With the Committee's best wishes for the success of this project.

Yours sincerely

p.p. Aisha Glen

Hugh Davies
Chair
Email: nrescommittee.southcentral-oxforda@nhs.net

Enclosures: *"After ethical review – guidance for researchers"*

Copy to: *Professor Jonathan Knight*

Mr Mark Walker, 2gether NHS Foundation Trust

NHS
Health Research Authority

Miss Holly Panting
Clinical Psychologist in Training
Taunton and Somerset NHS Foundation Trust
Doctorate in Clinical Psychology, 10W, University of Bath
Claverton Down
Bath
BA27AY

Email: hra.approval@nhs.net

06 April 2017

Dear Miss Panting

Letter of HRA Approval

Study title:	**Examining the links between eating disorders and irritable bowel syndrome (IBS): what are the roles of specific cognitions in linking eating disorders and IBS, and is perfectionism a vulnerability factor?**
IRAS project ID:	**217727**
REC reference:	**17/SC/0102**
Sponsor	**University of Bath**

I am pleased to confirm that **HRA Approval** has been given for the above referenced study, on the basis described in the application form, protocol, supporting documentation and any clarifications noted in this letter.

Participation of NHS Organisations in England

The sponsor should now provide a copy of this letter to all participating NHS organisations in England.

Appendix B provides important information for sponsors and participating NHS organisations in England for arranging and confirming capacity and capability. **Please read *Appendix B* carefully**, in particular the following sections:

- *Participating NHS organisations in England* – this clarifies the types of participating organisations in the study and whether or not all organisations will be undertaking the same activities
- *Confirmation of capacity and capability* - this confirms whether or not each type of participating NHS organisation in England is expected to give formal confirmation of capacity and capability. Where formal confirmation is not expected, the section also provides details on the time limit given to participating organisations to opt out of the study, or request additional time, before their participation is assumed.
- *Allocation of responsibilities and rights are agreed and documented (4.1 of HRA assessment criteria)* - this provides detail on the form of agreement to be used in the study to confirm capacity and capability, where applicable.

IRAS project ID	217727

Further information on funding, HR processes, and compliance with HRA criteria and standards is also provided.

It is critical that you involve both the research management function (e.g. R&D office) supporting each organisation and the local research team (where there is one) in setting up your study. Contact details and further information about working with the research management function for each organisation can be accessed from www.hra.nhs.uk/hra-approval.

Appendices

The HRA Approval letter contains the following appendices:

- A – List of documents reviewed during HRA assessment
- B – Summary of HRA assessment

After HRA Approval

The document *"After Ethical Review – guidance for sponsors and investigators",* issued with your REC favourable opinion, gives detailed guidance on reporting expectations for studies, including:

- Registration of research
- Notifying amendments
- Notifying the end of the study

The HRA website also provides guidance on these topics, and is updated in the light of changes in reporting expectations or procedures.

In addition to the guidance in the above, please note the following:

- HRA Approval applies for the duration of your REC favourable opinion, unless otherwise notified in writing by the HRA.
- Substantial amendments should be submitted directly to the Research Ethics Committee, as detailed in the *After Ethical Review* document. Non-substantial amendments should be submitted for review by the HRA using the form provided on the HRA website, and emailed to hra.amendments@nhs.net.
- The HRA will categorise amendments (substantial and non-substantial) and issue confirmation of continued HRA Approval. Further details can be found on the HRA website.

Scope

HRA Approval provides an approval for research involving patients or staff in NHS organisations in England.

If your study involves NHS organisations in other countries in the UK, please contact the relevant national coordinating functions for support and advice. Further information can be found at http://www.hra.nhs.uk/resources/applying-for-reviews/nhs-hsc-rd-review/.

If there are participating non-NHS organisations, local agreement should be obtained in accordance with the procedures of the local participating non-NHS organisation.

IRAS project ID	217727

User Feedback

The Health Research Authority is continually striving to provide a high quality service to all applicants and sponsors. You are invited to give your view of the service you have received and the application procedure. If you wish to make your views known please use the feedback form available on the HRA website: http://www.hra.nhs.uk/about-the-hra/governance/quality-assurance/.

HRA Training

We are pleased to welcome researchers and research management staff at our training days – see details at http://www.hra.nhs.uk/hra-training/

Your IRAS project ID is **217727**. Please quote this on all correspondence.

Yours sincerely

Be
Job Title

Email: hra.approval@nhs.net

Copy to: Professor Jonathan Knight, Sponsor Contact

Mr Mark Walker, 2gether NHS Foundation Trust, Lead NHS R&D Contact

IRAS project ID	217727

Appendix A - List of Documents

The final document set assessed and approved by HRA Approval is listed below.

Document	*Version*	*Date*
Contract/Study Agreement [Statement of Activities - PICs]		06 April 2017
Copies of advertisement materials for research participants [217727. Recruitment poster. Holly Panting]	V2	08 December 2016
Evidence of Sponsor insurance or indemnity (non NHS Sponsors only) [217727. University of Bath insurance certificate. 24.10.16]		24 October 2016
IRAS Application Form [IRAS_Form_13022017]		13 February 2017
IRAS Application Form XML file [IRAS_Form_13022017]		13 February 2017
IRAS Checklist XML [Checklist_09032017]		09 March 2017
Letter from sponsor [217727. Sponsorship confirmation letter. Holly Panting 30.01.17]		30 January 2017
Non-validated questionnaire [217727. Questionnaire battery. Holly Panting]	V6	12 January 2017
Other [217727. PRSC covering letter. Holly Panting]		06 March 2017
Other [217727. Participant debrief sheet. Holly Panting]	V4	04 January 2017
Other [Schedule of Events - PICs]		20 March 2017
Participant consent form [Paper version]	5	31 March 2017
Participant consent form [Online version]	5	31 March 2017
Participant information sheet (PIS)	5	31 March 2017
Referee's report or other scientific critique report [217727. Institutional assessment of research. Holly Panting]	V1	09 May 2016
Research protocol or project proposal [217727. Research protocol. V2 Holly Panting 08.12.16]	V2	08 December 2016
Summary CV for Chief Investigator (CI) [217727. CV for CI - Holly Panting. V1 05.01.17]		05 January 2017
Summary CV for student [217727. CV for CI - Holly Panting. 05.01.17]		05 January 2017
Summary CV for supervisor (student research) [217727. Supervisors CV - Emma Griffiths]		28 November 2016
Summary CV for supervisor (student research) [217727. Supervisors CV - Paul Salkovskis.]		
Summary, synopsis or diagram (flowchart) of protocol in non-technical language [217727. Lay summary. Holly Panting V3 04.01.17]	V3	04 January 2017
Summary, synopsis or diagram (flowchart) of protocol in non-technical language [217727. Flowchart. Holly Panting]	V1	04 January 2017

IRAS project ID	217727

Appendix B - Summary of HRA Assessment

This appendix provides assurance to you, the sponsor and the NHS in England that the study, as reviewed for HRA Approval, is compliant with relevant standards. It also provides information and clarification, where appropriate, to participating NHS organisations in England to assist in assessing and arranging capacity and capability.

For information on how the sponsor should be working with participating NHS organisations in England, please refer to the, *participating NHS organisations, capacity and capability* and *Allocation of responsibilities and rights are agreed and documented (4.1 of HRA assessment criteria)* sections in this appendix.

The following person is the sponsor contact for the purpose of addressing participating organisation questions relating to the study:

Name: Professor Jonathan Knight

Tel: 01225386141

Email: pro-vc-research@bath.ac.uk

HRA assessment criteria

Section	HRA Assessment Criteria	Compliant with Standards	Comments
1.1	IRAS application completed correctly	Yes	The university site will not be covered by HRA Approval.
2.1	Participant information/consent documents and consent process	Yes	The participant information sheet and consent forms have been updated to bring them in line with HRA Approval standards via a minor amendment.
3.1	Protocol assessment	Yes	No comments
4.1	Allocation of responsibilities and rights are agreed and documented	Yes	The sponsor intends to use a Statement of Activities as the form of agreement with participating NHS organisations that are PIC sites.
4.2	Insurance/indemnity arrangements assessed	Yes	Where applicable, independent contractors (e.g. General Practitioners) should ensure that the professional indemnity provided by their medical defence organisation covers the activities expected of them for this

IRAS project ID	217727

Section	HRA Assessment Criteria	Compliant with Standards	Comments
			research study.
4.3	Financial arrangements assessed	Yes	No application for external funding made. No funds will be provided to the participating organisations NHS Trusts. No form of agreement will be used with GP surgeries that are only advertising via posters.
5.1	Compliance with the Data Protection Act and data security issues assessed	Yes	No comments
5.2	CTIMPS – Arrangements for compliance with the Clinical Trials Regulations assessed	Not Applicable	No comments
5.3	Compliance with any applicable laws or regulations	Yes	No comments
6.1	NHS Research Ethics Committee favourable opinion received for applicable studies	Yes	Provisional Opinion issued 24 February 2017. Further Information Favourable Opinion issued 17 March 2017.
6.2	CTIMPS – Clinical Trials Authorisation (CTA) letter received	Not Applicable	No comments
6.3	Devices – MHRA notice of no objection received	Not Applicable	No comments
6.4	Other regulatory approvals and authorisations received	Not Applicable	No comments

IRAS project ID	217727

Participating NHS Organisations in England

This provides detail on the types of participating NHS organisations in the study and a statement as to whether the activities at all organisations are the same or different.

This is a non-commercial student (Doctorate in Clinical Psychology (DClinPsy)) study and there is one site type covered by HRA Approval.

There are **2 types of PIC sites**;

- NHS Trusts - introduce study and give out information packs to potential participants.
- GP surgeries - advertise via posters.

The Chief Investigator or sponsor should share relevant study documents with participating NHS organisations in England in order to put arrangements in place to deliver the study. The documents should be sent to both the local study team, where applicable, and the office providing the research management function at the participating organisation. For NIHR CRN Portfolio studies, the Local LCRN contact should also be copied into this correspondence. For further guidance on working with participating NHS organisations please see the HRA website.

If chief investigators, sponsors or principal investigators are asked to complete site level forms for participating NHS organisations in England which are not provided in IRAS or on the HRA website, the chief investigator, sponsor or principal investigator should notify the HRA immediately at hra.approval@nhs.net. The HRA will work with these organisations to achieve a consistent approach to information provision.

Confirmation of Capacity and Capability

This describes whether formal confirmation of capacity and capability is expected from participating NHS organisations in England.

The HRA has determined that participating NHS organisations in England **are not expected to formally confirm their capacity and capability to host this research**.

- The HRA has informed the relevant research management offices that you intend to undertake the research at their organisation. However, you should still support and liaise with these organisations as necessary.
- Following issue of the Letter of HRA Approval the sponsor may commence the study at these organisations when it is ready to do so.
- The document "Collaborative working between sponsors and NHS organisations in England for HRA Approval studies, where no formal confirmation of capacity and capability is expected" provides further information for the sponsor and NHS organisations on working with NHS organisations in England where no formal confirmation of capacity and capability is expected, and the processes involved in adding new organisations. Further study specific details are provided the *Participating NHS Organisations* and *Allocation of responsibilities and rights are agreed and documented (4.1 of HRA assessment criteria)* sections of this Appendix.

IRAS project ID	217727

Principal Investigator Suitability

This confirms whether the sponsor position on whether a PI, LC or neither should be in place is correct for each type of participating NHS organisation in England and the minimum expectations for education, training and experience that PIs should meet (where applicable).
No PI or Local Collaborator is expected at each participating organisation. GCP training is not a generic training expectation, in line with the HRA statement on training expectations.

HR Good Practice Resource Pack Expectations

This confirms the HR Good Practice Resource Pack expectations for the study and the pre-engagement checks that should and should not be undertaken
No access arrangements are expected for this study.

Other Information to Aid Study Set-up

This details any other information that may be helpful to sponsors and participating NHS organisations in England to aid study set-up.
The applicant has indicated that they do not intend to apply for inclusion on the NIHR CRN Portfolio.

Wednesday, April 25, 2018 at 11:19:03 AM British Summer Time

Subject: Ethics 17-093
Date: Wednesday, 12 April 2017 at 15:52:19 British Summer Time
From: Nathalia Gjersoe on behalf of psychology-ethics
To: Holly Panting

Dear Holly,

I am happy to confirm that you have full ethical approval for this amended application from the Bath University Psychology Ethics Committee, via Chair's Action. Please use the code 17-093 as proof of ethical approval on internal documents.

Best of luck with your research,
Dr. Nathalia Gjersoe
Chair, Psychology Ethics Committee

From: Holly Panting
Sent: 12 April 2017 14:07
To: Nathalia Gjersoe <N.Gjersoe@bath.ac.uk>
Subject: Re: Psychology ethical approval for research project already approved by IRAS and HRA

Hi Nathalia,

Thank you for your email, please see attached amended ethics form as requested. Please let me know if you require any further information.

Kind regards
Holly

Holly Panting
Clinical Psychologist in Training
University of Bath

From: Nathalia Gjersoe
Sent: 12 April 2017 08:16
To: Holly Panting
Subject: RE: Psychology ethical approval for research project already approved by IRAS and HRA

Dear Holly,

I am happy to give ethical consideration via Chair's Action but we need some record of what we have approved. Please could you complete the relevant sections of the ethics form and resend all documentation.

Best wishes, Nathalia

Appendix B. Study information and study debrief sheets

Participant Information Sheet – Examining the links between eating disorders and irritable bowel syndrome

We would like to invite you to take part in our research study. Before you decide, we would like you to understand why the research is being done and what it would involve for you.

Please take time to read the following information carefully, and discuss it with others if you wish. Please ask us if there is anything that is not clear or if you would like more information. Take time to decide whether or not you wish to take part.

Why is this study being done?
This study aims to examine the links between eating disorders (ED) and irritable bowel syndrome (IBS) in order to further understanding and treatment in this area. This study will look at the role of specific beliefs and behaviours in linking eating disorders and IBS. In addition, it will examine the role of perfectionism as a vulnerability factor in the links between ED and IBS, and examine if there are differences in the presentation of perfectionism in people with ED and people with IBS.

Why have I been invited?
We are inviting different groups of people to participate in the study. We are interested in people who have eating disorders (all types); people who have IBS; and people who have diagnoses of both an eating disorder and IBS. We are also inviting people to participate in the study who have neither an eating disorder nor IBS to act as a group for comparison. To participate in this research, you need to be female and at least 18 years of age.

Do I have to take part?
No. It is up to you to decide if you wish to take part in the study. You are free to withdraw from the study at any time, without giving a reason. If you decide to take part and then later change your mind, you can request that your data is withdrawn from the study by emailing the researcher (see details below) with the personal identification code you gave when completing the questionnaire. Your data will then be removed from the study and destroyed. Taking part in the study (or not) will not have any bearing on any NHS treatment you are undertaking (or are waiting for).

What will I be asked to do if I take part?
If you decide to take part in this study, you will be asked to complete a consent form to indicate that you are happy to participate in the study. You will then be asked to complete a number of questionnaires, which will take approximately 20-25 minutes. At the beginning of the questionnaires, there are a few screening questions for you to complete to make sure that you fulfil the criteria for the study.

Some of the questionnaires may feel like they don't apply to you, but we would like you to complete all the questions anyway as this will allow us to compare your responses with others. Some of the questions may also feel a bit repetitive, though we have tried to minimise this as much as possible.

On completion of the questionnaire, you will be offered a **£5 Amazon voucher** to thank you for participating in the study. Once the study is completed, a summary of the findings will be made available to participants who wish to receive them.

Will the information I provide be kept confidential?
Yes. The completed questionnaires will be completely anonymous, and we will not collect any personal identifying information about you. All the information collected during the course of the research will conform with the Data Protection Act (1998) with respect to data collection, storage and destruction. This means that all information will be stored at the University of Bath in a locked cupboard for paper-based information, or on a password protected drive for electronic information, with access restricted to study

personnel. We hope to report the findings of the study in an academic journal, and present them to other professionals at meetings and conferences. The findings will also contribute to Holly Panting's Doctorate in Clinical Psychology. You will not be identified in any reports or publications arising from the study.

Are there any advantages/benefits from taking part?
We cannot promise the study will help you, but the information we get from the study will hopefully help to improve both the understanding and treatment of eating disorders and IBS.

Are there any disadvantages/risks from taking part?
We consider there to be minimal disadvantages to taking part in the study, for example, inconvenience and time taken to complete the questionnaires. However, you can complete the questionnaires either online or in a paper format at a time to suit you.

Some of the questionnaires involve questions about eating disorders and IBS which some participants may find upsetting. If you decide to take part in the research and you feel distressed at any point you can stop taking part in the research, without giving a reason and without repercussion. If you do feel distressed, you should contact your Care Coordinator (if you have one), or your GP.

What if there is a problem?
If you have a concern about any aspect of the study, you can contact the researchers (details below), who will do their best to answer your questions. Every care will be taken to ensure your safety during the course of the study.

If you remain unhappy and wish to complain formally you can do this through the NHS Complaints Procedure (details can be obtained from your Primary Care/NHS Trust), or you can contact the Research Governance Sponsor of this study, University of Bath. Please write to Professor Jonathan Knight, Vice Chancellors Office, 4 West 3.22, University of Bath, Bath, BA2 7AY quoting reference XXX.

Contact
If you have a concern about any aspect of the study, you can contact the researchers (details below), who will do their best to answer your questions.

Holly Panting (Clinical Psychologist in Training) - h.panting@bath.ac.uk
Dr Emma Griffith (Clinical Psychologist/Tutor at the University of Bath) - e.j.griffith@bath.ac.uk
Professor Paul Salkovskis (Clinical Psychologist/Programme Director at the University of Bath) – p.m.salkovskis@bath.ac.uk)

What to do next if I am interested in taking part
If you would like to participate in the study you can complete the consent form and questionnaire pack online by visiting the following webpage:

https://bathpsychology.eu.qualtrics.com/jfe/form/SV_1Bp1WQRJa6qsOYR

Alternatively, you can request a paper questionnaire pack with a Freepost envelope by emailing the researcher Holly Panting. Doing so will not affect the anonymity of your responses.

Thank you for taking the time to read this information sheet. Please do not hesitate to contact us if you would like further information.

All research in the NHS has been looked at by an independent group of people called a Research Ethics Committee to protect your safety, rights, wellbeing and dignity. This study has been reviewed and given favourable opinion by the South Central – Oxford Research Ethics Committee (IRAS ID: 217727).

Appendix C. Questionnaire battery pack

Examining the links between eating disorders and irritable bowel syndrome

QUESTIONNAIRE PACK

Screening questions

We would like you to answer a few questions to check that you meet the criteria for participating in this study. Please tick the boxes in response to the questions below:

	Please tick
1. Are you aged UNDER 18 years?	☐ **Yes** ☐ **No**
2. Do you consider yourself NOT to be fluent in English?	☐ **Yes** ☐ **No**
3. Do you have current (or a history of) psychosis?	☐ **Yes** ☐ **No**
4. Do you have a current substance dependence problem?	☐ **Yes** ☐ **No**
5. Are you male?	☐ **Yes** ☐ **No**
Additional question for comparison group (*please only answer this question if you DON'T have an eating disorder OR IBS*):	
6. Have you dieted in the last 4 weeks?	☐ **Yes** ☐ **No**

If you have answered YES to any of the questions above, you unfortunately do not meet the criteria for the study. Please do not continue with the questionnaire. We would like to take this opportunity to thank you for your interest in this study, and for your participation thus far. Please contact the researcher if you have any questions about the study.

If you have answered NO to all of the questions above, please continue to the next page of the questionnaire.

Questionnaire instructions

Please complete all of the questions in the questionnaire. Some of the questionnaires may feel like they don't apply to you, but we would like you to complete them anyway as this will allow us to compare your responses with others. Some of the questions may also feel a bit repetitive, though we have tried to minimise this as much as possible. There are no right or wrong answers.

Please write a unique nickname or personal identification code here, you will need to remember this code and relay it to the researcher if you wish to withdraw from the study at a later date:

_____

Background information

1. What gender do you identify as? (please circle) Male / Female / Other (please specify _____)

2. What is your age? _____years

3. What is your ethnicity? (please state) _____ ☐ Prefer not to say

4. What is your employment status? (please tick)

Employed (full time)	
Employed (part time)	
Self-employed	
Unemployed (Seeking work)	
Unemployed	
Benefits	
Student (Full time)	
Student (Part time)	
Homemaker	
Volunteer	
Retired	
Other (please specify)	

5. What is your highest level of Education? (please tick)

☐ No education ☐ Primary school ☐ City and guilds ☐ G.C.S.E.s

☐ 'A' levels ☐ University Degree ☐ Master's Degree ☐ PhD

☐ Other (please specify): _____

6. Are you married or single? (please tick)
☐ Married/civil partnership ☐ Single
☐ Divorced/separated ☐ Widowed ☐Other_____

7. What is your height? (please give your best estimate) _____

8. What is your weight? (please give your best estimate) _____

9. What was your highest weight at your current height? _____

10. Do you have a diagnosed eating disorder? (please tick) ☐ Yes ☐ No

If yes, can you specify which eating disorder**:**
☐ Anorexia ☐ Bulimia ☐ Binge eating disorder
☐ Eating disorder not otherwise specified

Please estimate the date of your diagnosis: _____

Are you currently engaging in treatment for your eating disorder? ☐ Yes ☐ No
Which treatment? _____

Are you waiting for treatment for your eating disorder? ☐ Yes ☐ No
Which treatment? _____

Have you received treatment for your eating disorder in the past? ☐ Yes ☐ No
Which treatment? _____ When? _____

11. Do you have irritable bowel syndrome? (please tick) ☐ Yes ☐ No

If yes, have you received a formal diagnosis? ☐ Yes ☐ No
Who from? _____
Please estimate the date of your diagnosis _____

Are you currently engaging in treatment for your IBS? ☐ Yes ☐ No
Which treatment? _____

Are you waiting for treatment for your IBS? ☐ Yes ☐ No

Which treatment? _____

Have you received treatment for your IBS in the past? ☐ Yes ☐ No
Which treatment? _____ When? _____

12. Do you have any other medical conditions? If yes, please provide details below.

13. Do you have any other psychological or mental health conditions? If yes, please provide details below.

14. Do you take any medication(s) for your conditions? If yes, please provide details below:

15. Over the past 3-4 months have you missed any menstrual periods? ☐ Yes ☐ No

If yes, how many? _____
Have you been taking the contraceptive pill? ☐ Yes ☐ No

16. How did you hear about this research? (please tick)

☐ NHS service I was attending
☐ A website which supports people with eating disorders
☐ A website which supports people with IBS
☐ On social media (e.g. Facebook, Twitter).
☐ A poster
☐ Other (please state):_____

Eating disorder symptoms

(Eating Disorder Diagnostic Scale, Stice et al., 2000)

Copyrighted questionnaire – removed.

Eating beliefs and behaviours

(Eating Disorders Examination Questionnaire, Fairburn & Beglin, 1994)

We would like to ask some questions about eating beliefs and behaviours. We are interested in your answers to these questions, even if you don't consider yourself to have an eating disorder. There are no right or wrong answers.

The following questions are concerned with the **past four weeks (28 days) only**. Please read each question carefully, and circle the appropriate number. Please answer all the questions.

	On how many of the past 28 days…	No days	1-5 days	6-12 days	13-15 days	16-22 days	23-27 days	Every day
1	Have you been deliberately trying to limit the amount of food you eat to influence your shape or weight (whether or not you have succeeded)?	0	1	2	3	4	5	6
2	Have you gone for long periods of time (8 waking hours or more) without eating anything at all in order to influence your shape or weight?	0	1	2	3	4	5	6
3	Have you tried to exclude from your diet any foods that you like in order to influence your shape or weight (whether or not you have succeeded)?	0	1	2	3	4	5	6
4	Have you tried to follow definite rules regarding your eating (for example, a calorie limit) in order to influence your shape or weight (whether or not you have succeeded)?	0	1	2	3	4	5	6
5	Have you had a definite desire to have an empty stomach with the aim of influencing your shape or weight?	0	1	2	3	4	5	6

6	Have you had a definite desire to have a totally flat stomach?	0	1	2	3	4	5	6
7	Has thinking about food, eating or calories made it very difficult to concentrate on things you are interested in (e.g. working, following a conversation, or reading)?	0	1	2	3	4	5	6
8	Has thinking about shape or weight made it very difficult to concentrate on things you are interested in (e.g. working, following a conversation, or reading)?	0	1	2	3	4	5	6
9	Have you had a definite fear of losing control over eating?	0	1	2	3	4	5	6
10	Have you had a definite fear that you might gain weight?	0	1	2	3	4	5	6
11	Have you felt fat?	0	1	2	3	4	5	6
12	Have you had a strong desire to lose weight?	0	1	2	3	4	5	6

Over the past four weeks (28 days)		
13	Over the past 28 days, how many times have you eaten what other people would regard as an unusually large amount of food (given the circumstances)?	……
14	On how many of these times did you have a sense of having lost control over your eating (at the time that you were eating)?	……
15	Over the past 28 days, on how many **DAYS** have such episodes of overeating occurred (i.e., you have eaten an unusually large amount of food and have had a sense of loss of control at the time)?	……
16	Over the past 28 days, how many times have you made yourself sick (vomit) as a means of controlling your shape or weight?	……
17	Over the past 28 days, how many times have you taken laxatives as a means of controlling your shape or weight?	……

18	Over the past 28 days, how many times have you exercised in a "driven" or "compulsive" way as a means of controlling your weight, shape or amount of fat, or to burn off calories?	……

For the following questions, please circle the appropriate number. Please note that for these questions the term "binge eating" means eating what others would regard as an unusually large amount of food for the circumstances, accompanied by a sense of having lost control over eating.

19	Over the past 28 days, on how many days have you eaten in secret (ie, furtively)? (Do not count episodes of binge eating)	No days	1-5 days	6-12 days	13-15 days	16-22 days	23-27 days	Every day
		0	1	2	3	4	5	6
20	On what proportion of the times that you have eaten have you felt guilty (felt that you've done wrong) because of its effect on your shape or weight? (Do not count episodes of binge eating)	None of the times	A few of the times	Less than half of the times	Half of the times	More than half of the times	Most of the times	Every time
		0	1	2	3	4	5	6
21	Over the past 28 days, how concerned have you been about other people seeing you eat? (Do not count episodes of binge eating)	Not at all		Slightly		Moderately		Markedly
		0	1	2	3	4	5	6

	Over the past 28 days…	**Not at all**		**Slightly**		**Moderately**	**Markedly**	
22	Has your weight influenced how you think about (judge) yourself as a person?	0	1	2	3	4	5	6
23	Has your shape influenced how you think about (judge) yourself as a person?	0	1	2	3	4	5	6
	Over the past 28 days…	**Not at all**		**Slightly**		**Moderately**	**Markedly**	
24	How much would it have upset you if you had been asked to weigh yourself once a week (no more, or less often) for the next four weeks?	0	1	2	3	4	5	6

25	How dissatisfied have you been with your weight?	0	1	2	3	4	5	6
26	How dissatisfied have you been with your shape?	0	1	2	3	4	5	6
27	How uncomfortable have you felt seeing your body (e.g. seeing your shape in the mirror, in a shop window reflection, while undressing or taking a bath or shower)?	0	1	2	3	4	5	6
28	How uncomfortable have you felt about others seeing your shape or figure (e.g. in communal changing rooms, when swimming, or wearing tight clothes)?	0	1	2	3	4	5	6

Impact of eating habits

(Clinical Impairment Assessment questionnaire, Bohn et al., 2008)

We would now like to ask about how your eating habits have affected your life. We are interested in your answers to these questions even if you don't consider yourself to have an eating disorder.

Please place an 'X' in the column which best describes how your eating habits, exercising or feelings about your eating, shape or weight have affected your life **over the past four weeks (28 days).**

Over the past 28 days, to what extent have your eating habits, exercising or feelings about your eating, shape or weight ...		**Not at all**	**A little**	**Quite a bit**	**A lot**
1	Made it difficult to concentrate?				
2	Made you feel critical of yourself?				
3	Stopped you going out with others?				
4	Affected your work performance (if applicable)?				
5	Made you forgetful?				
6	Affected your ability to make everyday decisions?				
7	Interfered with meals with family or friends?				
8	Made you upset?				
9	Made you feel ashamed of yourself?				
10	Made it difficult to eat out with others?				
11	Made you feel guilty?				
12	Interfered with you doing things you used to enjoy?				
13	Made you absent-minded?				
14	Made you feel a failure				
15	Interfered with your relationships with others?				
16	Made you worry?				

General mental health and wellbeing: anxiety and depression

(Generalised Anxiety Disorder questionnaire, Spitzer et al., 2006
and Patient Health Questionnaire, Kroenke et al., 2001)

We are interested in your experiences of anxiety and depression. Please circle the appropriate number. Please answer all the questions. There are no right or wrong answers.

Over the last 2 weeks, how often have you been bothered by any of the following problems?	**Not at all**	**Several Days**	**More than half the days**	**Nearly every day**
Feeling nervous, anxious or on edge.	0	1	2	3
Not being able to stop or control worrying.	0	1	2	3
Worrying too much about different things.	0	1	2	3
Trouble relaxing.	0	1	2	3
Being so restless that it is hard to sit still.	0	1	2	3
Becoming easily annoyed or irritable.	0	1	2	3
Feeling afraid as if something awful might happen.	0	1	2	3

If you have circled higher than 'not at all' for any problems above, how difficult have these made it for you to take care of things at home, to get along with other people or to do your work?			
1	2	3	4
Not difficult at all	Somewhat difficult	Very difficult	Extremely difficult

Over the last <u>2 weeks</u>, how often have you been bothered by any of the following problems?	**Not at all**	**Several Days**	**More than half the days**	**Nearly every day**
Little interest or pleasure in doing things.	0	1	2	3
Feeling down, depressed, or hopeless.	0	1	2	3
Trouble falling or staying asleep, or sleeping too much.	0	1	2	3
Feeling tired or having little energy.	0	1	2	3
Poor appetite or overeating.	0	1	2	3
Feeling bad about yourself, or that you are a failure, or have let yourself or your family down.	0	1	2	3
Trouble concentrating on things, such as reading the newspaper or watching television.	0	1	2	3
Moving or speaking so slowly that other people could have noticed? Or the opposite being so fidgety or restless that you have been moving around a lot more than usual.	0	1	2	3
Thoughts that you would be better off dead, or of hurting yourself in some way.	0	1	2	3

If you have circled higher than 'not at all' for any problems above, how difficult have these made it for you to take care of things at home, to get along with other people or to do your work?			
1	2	3	4
Not difficult at all	Somewhat difficult	Very difficult	Extremely difficult

Work and social adjustment:

(Work and Social Adjustment Scale, Mundt et al., 2002).

Copyrighted questionnaire – removed.

Irritable bowel syndrome symptoms

(IBS Severity Score questionnaire, Francis et al., 1997)

Copyrighted questionnaire – removed.

Thoughts about gastrointestinal symptoms

(Adapted from the Cognitive Scale for Functional Bowel Disorders, Toner et al., 1998)

We would like to know more about your beliefs about gastrointestinal symptoms (i.e. constipation, diarrhoea, stomach cramps/pain and feeling sick).
Please complete all the questions. Even if you don't consider yourself to have gastrointestinal symptoms, most people will experience some of these symptoms at least some of the time. There are no right or wrong answers.

Please indicate to what extent you personally agree or disagree with each statement by circling a number on the scale. Please circle only one number per line.										
1. I worry I won't get to the bathroom in time when I have gastrointestinal symptoms:										
Strongly disagree	1	2	3	4	5	6	7	8	9	10	Strongly agree
2. If I have a bowel accident in public other people will notice and be disgusted:										
Strongly disagree	1	2	3	4	5	6	7	8	9	10	Strongly agree
3. I can't function normally when I have gastrointestinal symptoms:										
Strongly disagree	1	2	3	4	5	6	7	8	9	10	Strongly agree
4. The pain I experience from gastrointestinal symptoms will never go away:										
Strongly disagree	1	2	3	4	5	6	7	8	9	10	Strongly agree
5. Gastrointestinal symptoms interfere with how I feel about myself:										
Strongly disagree	1	2	3	4	5	6	7	8	9	10	Strongly agree
6. It's embarrassing when I keep going to the bathroom:										
Strongly disagree	1	2	3	4	5	6	7	8	9	10	Strongly agree
7. I hate making a fool out of myself because of my gastrointestinal symptoms:										
Strongly disagree	1	2	3	4	5	6	7	8	9	10	Strongly agree
8. Others think there is something wrong with me when I make frequent trips to the bathroom:										
Strongly disagree	1	2	3	4	5	6	7	8	9	10	Strongly agree
9. I worry about losing control of my bowels in public:										
Strongly disagree	1	2	3	4	5	6	7	8	9	10	Strongly agree
10. If I don't get home when I have gastrointestinal symptoms I will have an accident in public:										
Strongly disagree	1	2	3	4	5	6	7	8	9	10	Strongly agree
11. If I have gastrointestinal symptoms in public others will notice and be disgusted:										
Strongly disagree	1	2	3	4	5	6	7	8	9	10	Strongly agree

12. If I don't plan ahead to manage my gastrointestinal symptoms then I will have a bowel accident:											
Strongly disagree	1	2	3	4	5	6	7	8	9	10	Strongly agree
13. I should be able to control my gastrointestinal problems:											
Strongly disagree	1	2	3	4	5	6	7	8	9	10	Strongly agree

Beliefs about gastrointestinal symptoms

(Beliefs About Physical Symptoms Transdiagnostic Scale, adapted from Moss-Morris et al., 2002)

We would like to know more about your beliefs about any gastrointestinal symptoms you may experience (i.e. constipation, diarrhoea, stomach cramps/pain and feeling sick). Please complete all the questions, even if you don't consider yourself to have gastrointestinal symptoms. There are no right or wrong answers.

We are most interested in your own beliefs about your physical symptoms rather than what others including doctors or family may have suggested to you.

Please indicate how much you agree or disagree with the following statements about physical symptoms by circling a number on the scale. Please circle only one number per line.										
1. My symptoms can be caused by over-activity:										
Strongly disagree	1	2	3	4	5	6	7	8	9	10	Strongly agree
2. It is important to avoid exercise when my symptoms flare up:										
Strongly disagree	1	2	3	4	5	6	7	8	9	10	Strongly agree
3. Doing less activity than usual helps to improve my symptoms:										
Strongly disagree	1	2	3	4	5	6	7	8	9	10	Strongly agree
4. My symptoms can be caused by stress:										
Strongly disagree	1	2	3	4	5	6	7	8	9	10	Strongly agree
5. I can't function normally when I have symptoms:										
Strongly disagree	1	2	3	4	5	6	7	8	9	10	Strongly agree
6. The pain I experience from symptoms will never go away:										
Strongly disagree	1	2	3	4	5	6	7	8	9	10	Strongly agree
7. My symptoms interfere with how I feel about myself:										
Strongly disagree	1	2	3	4	5	6	7	8	9	10	Strongly agree
8. It's embarrassing when my symptoms flare up:										
Strongly disagree	1	2	3	4	5	6	7	8	9	10	Strongly agree
9. I should be able to control my symptoms:										
Strongly disagree	1	2	3	4	5	6	7	8	9	10	Strongly agree
10. I can't do my daily activities because it will make my symptoms worse:										
Strongly disagree	1	2	3	4	5	6	7	8	9	10	Strongly agree

11. When my symptoms are bad I am afraid I won't be able to control my emotions:											
Strongly disagree	1	2	3	4	5	6	7	8	9	10	Strongly agree
12. If I don't hold back on my daily activities my symptoms will cripple me:											
Strongly disagree	1	2	3	4	5	6	7	8	9	10	Strongly agree
13. If others notice my symptoms they will think I am weak or there is something wrong with me:											
Strongly disagree	1	2	3	4	5	6	7	8	9	10	Strongly agree
14. My symptoms cause difficulties for those who are close to me:											
Strongly disagree	1	2	3	4	5	6	7	8	9	10	Strongly agree
15. There is very little that can be done to improve my symptoms:											
Strongly disagree	1	2	3	4	5	6	7	8	9	10	Strongly agree
16. My symptoms don't make any sense to me:											
Strongly disagree	1	2	3	4	5	6	7	8	9	10	Strongly agree
17. My symptoms will get better by self-management:											
Strongly disagree	1	2	3	4	5	6	7	8	9	10	Strongly agree
18. My symptoms have a psychological cause:											
Strongly disagree	1	2	3	4	5	6	7	8	9	10	Strongly agree
19. My symptoms will not get better without medical treatment:											
Strongly disagree	1	2	3	4	5	6	7	8	9	10	Strongly agree
20. When I think about my symptoms I get upset:											
Strongly disagree	1	2	3	4	5	6	7	8	9	10	Strongly agree
21. When I think about my symptoms I get angry:											
Strongly disagree	1	2	3	4	5	6	7	8	9	10	Strongly agree
22. My symptoms will get better with treatment:											
Strongly disagree	1	2	3	4	5	6	7	8	9	10	Strongly agree

Gastrointestinal symptoms and behaviour

(Physical Symptoms and Behaviour Scale, adapted from Reme et al., 2010)

We would like to know more about how gastrointestinal symptoms (i.e. constipation, diarrhoea, stomach cramps/pain and feeling sick) may have impacted your behaviour.

Please complete all the questions, even if you don't consider yourself to have gastrointestinal symptoms. There are no right or wrong answers.

Please indicate how much you agree or disagree with the following statements about physical symptoms by circling a number on the scale. Please circle only one number per line.											
1. I eat specific foods/drink specific beverages to help me to manage my symptoms:											
Strongly disagree	1	2	3	4	5	6	7	8	9	10	Strongly agree
2. I avoid certain food/beverages to help me manage my symptoms:											
Strongly disagree	1	2	3	4	5	6	7	8	9	10	Strongly agree
3. I ask for reassurance about my symptoms:											
Strongly disagree	1	2	3	4	5	6	7	8	9	10	Strongly agree
4. I am constantly aware of my symptoms:											
Strongly disagree	1	2	3	4	5	6	7	8	9	10	Strongly agree
5. I spend a long time thinking over and over about my problems:											
Strongly disagree	1	2	3	4	5	6	7	8	9	10	Strongly agree
6. I avoid attending social activities because of my symptoms:											
Strongly disagree	1	2	3	4	5	6	7	8	9	10	Strongly agree
7. I would like to achieve things at work/school, but I have to set limits because of my symptoms:											
Strongly disagree	1	2	3	4	5	6	7	8	9	10	Strongly agree
8. In order to avoid feelings of disappointment, I just try not to set myself goals or make plans:											
Strongly disagree	1	2	3	4	5	6	7	8	9	10	Strongly agree
9. Rather than try new activities, I tend to stick with the things I know:											
Strongly disagree	1	2	3	4	5	6	7	8	9	10	Strongly agree

10. I do not answer the phone in case people are calling with social invitations:											
Strongly disagree	1	2	3	4	5	6	7	8	9	10	Strongly agree
11. I quit activities that challenge me too much:											
Strongly disagree	1	2	3	4	5	6	7	8	9	10	Strongly agree
12. While I know I should make decisions about my personal relationships, I just let things go on as they are:											
Strongly disagree	1	2	3	4	5	6	7	8	9	10	Strongly agree
13. Because of my symptoms I avoid trying new activities that hold the potential for failure:											
Strongly disagree	1	2	3	4	5	6	7	8	9	10	Strongly agree
14. I am constantly trying to find a cause or a solution for my symptoms:											
Strongly disagree	1	2	3	4	5	6	7	8	9	10	Strongly agree
15. I frequently attend the GP:											
Strongly disagree	1	2	3	4	5	6	7	8	9	10	Strongly agree
16. I avoid the GP:											
Strongly disagree	1	2	3	4	5	6	7	8	9	10	Strongly agree
17. I avoid talking about my symptoms:											
Strongly disagree	1	2	3	4	5	6	7	8	9	10	Strongly agree
18. When my symptoms are not as bad, I make the most of it and do as many things as I can (e.g. work, hobbies, socialising):											
Strongly disagree	1	2	3	4	5	6	7	8	9	10	Strongly agree

Perfectionism

(Multi-dimensional Perfectionism Scale, adapted from Frost et al., 1990)

We are interested in finding out your beliefs related to perfectionism. Perfectionism is a personality trait characterised by striving for flawlessness, setting excessively high performance standards, and being self-critical. Please answer all of the questions below, there are no right or wrong answers.

Please indicate how much you agree or disagree with the following statements related to perfectionism by circling a statement on the scale. Please circle only one statement per line.

1. I am very good at focusing my efforts on attaining a goal.						
Totally agree	**Agree very much**	**Agree slightly**	**Neutral**	**Disagree slightly**	**Disagree very much**	**Totally disagree**
2. If I fail at work, I am a failure as a person.						
Totally agree	**Agree very much**	**Agree slightly**	**Neutral**	**Disagree slightly**	**Disagree very much**	**Totally disagree**
3. Other people seem to accept lower standards from themselves than I do.						
Totally agree	**Agree very much**	**Agree slightly**	**Neutral**	**Disagree slightly**	**Disagree very much**	**Totally disagree**
4. I should be upset if I make a mistake.						
Totally agree	**Agree very much**	**Agree slightly**	**Neutral**	**Disagree slightly**	**Disagree very much**	**Totally disagree**
5. If I do not set the highest standards for myself, I am likely to end up a second rate person.						
Totally agree	**Agree very much**	**Agree slightly**	**Neutral**	**Disagree slightly**	**Disagree very much**	**Totally disagree**
6. It is important to me that I be thoroughly competent in everything I do.						
Totally agree	**Agree very much**	**Agree slightly**	**Neutral**	**Disagree slightly**	**Disagree very much**	**Totally disagree**
7. I set higher goals than most people.						
Totally agree	**Agree very much**	**Agree slightly**	**Neutral**	**Disagree slightly**	**Disagree very much**	**Totally disagree**
8. If someone does a task at work better than I, then I feel like I failed the whole task.						
Totally agree	**Agree very much**	**Agree slightly**	**Neutral**	**Disagree slightly**	**Disagree very much**	**Totally disagree**
9. If I fail partly, it is as bad as being a complete failure.						
Totally agree	**Agree very much**	**Agree slightly**	**Neutral**	**Disagree slightly**	**Disagree very much**	**Totally disagree**
10. I hate being less than best at things.						

Totally agree	**Agree very much**	**Agree slightly**	**Neutral**	**Disagree slightly**	**Disagree very much**	**Totally disagree**
11. I have extremely high standards.						
Totally agree	**Agree very much**	**Agree slightly**	**Neutral**	**Disagree slightly**	**Disagree very much**	**Totally disagree**
12. People will probably think less of me if I make a mistake.						
Totally agree	**Agree very much**	**Agree slightly**	**Neutral**	**Disagree slightly**	**Disagree very much**	**Totally disagree**
13. If I do not do as well as other people, it means I am an inferior human being.						
Totally agree	**Agree very much**	**Agree slightly**	**Neutral**	**Disagree slightly**	**Disagree very much**	**Totally disagree**
14. If I do not do well all the time, people will not respect me.						
Totally agree	**Agree very much**	**Agree slightly**	**Neutral**	**Disagree slightly**	**Disagree very much**	**Totally disagree**
15. I expect higher performance in my daily tasks than most people.						
Totally agree	**Agree very much**	**Agree slightly**	**Neutral**	**Disagree slightly**	**Disagree very much**	**Totally disagree**
16. The fewer mistakes I make, the more people will like me.						
Totally agree	**Agree very much**	**Agree slightly**	**Neutral**	**Disagree slightly**	**Disagree very much**	**Totally disagree**

This is the end of the questionnaire, thank you for your participation.

Please return this questionnaire to the researcher in the Freepost envelope provided, along with the consent form (sealed in the smaller envelope provided)

Please now refer to the "Participants debrief sheet" for more information.

Contact

If you have a concern about any aspect of the study, you can contact the researchers (details below), who will do their best to answer your questions.

Holly Panting (Clinical Psychologist in Training) - h.panting@bath.ac.uk

Dr Emma Griffith (Clinical Psychologist/Tutor at the University of Bath) - e.j.griffith@bath.ac.uk

Professor Paul Salkovskis (Clinical Psychologist/Programme Director at the University of Bath) – p.m.salkovskis@bath.ac.uk)

Appendix D. Factor analysis of scales

Beliefs about gastrointestinal problems (Beliefs-G)

The 23 items of the Beliefs-G scale were subjected to factor analysis. Prior to this, the suitability for factor analysis was assessed. Inspection of the correlation matrix revealed the presence of many coefficients of .3 and above. The Kaiser-Mayer-Olkin value was .936, exceeding the recommended value of .6, and Bartlett's Test of Sphericity reached statistical significance, supporting the suitability of data for factor analysis. Factor analysis revealed the presence of one component with an eigenvalue exceeding 1 (8.86), explaining 68.1% of the variance. An inspection of the screeplot revealed a clear break after the first component, and it was decided to retain the scale as monolithic. Varimax rotation was performed and the one components showed a number of strong loadings, with all variables loading substantially on the one component. Subsequent analysis of the data was performed using the total Beliefs-G score as one factor.

(N.B. Rotated Component Matrix – only one component was extracted. The solution therefore cannot be rotated).

Beliefs about physical symptoms (Beliefs-P)

The 22 items of the Beliefs-P scale were subjected to factor analysis. Prior to this, the suitability for factor analysis was assessed. Inspection of the correlation matrix revealed the presence of many coefficients of .3 and above. The Kaiser-Mayer-Olkin value was .939, exceeding the recommended value of .6, and Bartlett's Test of Sphericity reached statistical significance, supporting the suitability of data for factor analysis. Factor analysis revealed the presence of three components with eigenvalues exceeding 1 (12.39, 1.53, and 1.26), explaining 56.3%, 6.9%, and 5.7% of the variance respectively. An inspection of the screeplot revealed a clear break after the third component, and it was decided to retain three components. Varimax rotation was performed and all three components showed a number of strong loadings, with all variables loading substantially on only one component. Items for each of the three components were analysed for common themes, and were given subscale names accordingly. The three sub-scales are: (1) distressing beliefs about symptoms, (2) perceived controllability of symptoms, and (3) perceived benefits of reduced activity. There was a strong positive correlation between the three factors (subscale 1-2 r=.663, subscale 1-3 r=.667, subscale 2-3 r=.515). Subsequent analysis of the data was performed using the three Beliefs-P subscale scaled scores as three separate factors.

Table 1. Beliefs-P scale Rotated Component Matrix

	Components		
Scale items	1	2	3
Beliefs P - My symptoms don't make any sense to me	.831	.111	.147
Beliefs P - When I think about my symptoms I get upset	.801	.306	.173
Beliefs P - When I think about my symptoms I get angry	.794	.210	.187
Beliefs P - The pain I experience from symptoms will never go away	.759	.203	.230
Beliefs P - If I don't hold back on my daily activities my symptoms will cripple me	.753	.173	.328
Beliefs P - There is very little that can be done to improve my symptoms	.738	.238	.149
Beliefs P - If others notice my symptoms they will think I am weak or there is something wrong with me	.746	.223	.318
Beliefs P - When my symptoms are bad I am afraid I won't be able to control my emotions	.743	.319	.275
Beliefs P - I can't do my daily activities because it will make my symptoms worse	.713	.194	.396
Beliefs P - My symptoms cause difficulties for those who are close to me	.709	.210	.452
Beliefs P - My symptoms interfere with how I feel about myself	.708	.494	.127
Beliefs P - I can't function normally when I have symptoms	.663	.463	.232
Beliefs P - I should be able to control my symptoms -	.595	.513	.202
Beliefs P - It's embarrassing when my symptoms flare up	.609	.514	.272
Beliefs P - My symptoms will not get better without medical treatment	.566	.353	.278
Beliefs P - My symptoms will get better by self-management	-.010	.803	.258
Beliefs P - My symptoms will get better with treatment	.255	.726	.192
Beliefs P - My symptoms have a psychological cause	.320	.665	-.011
Beliefs P - My symptoms can be caused by stress	.372	.673	.220
Beliefs P - Doing less activity than usual helps to improve my symptoms	.208	.176	.879
Beliefs P - It is important to avoid exercise when my symptoms flare up	.338	.170	.774
Beliefs P - My symptoms can be caused by over-activity	.364	.297	.623
Extraction Method: Principal Component Analysis. Rotation Method: Varimax with Kaiser Normalization.[a] a. Rotation converged in 6 iterations.			

Gastrointestinal symptoms and behaviour (Behaviour-P)

The 18 items of the Behaviour-P scale were subjected to factor analysis. Prior to this, the suitability for factor analysis was assessed. Inspection of the correlation matrix revealed the

presence of many coefficients of .3 and above. The Kaiser-Mayer-Olkin value was .930, exceeding the recommended value of .6, and Bartlett's Test of Sphericity reached statistical significance, supporting the suitability of data for factor analysis. Factor analysis revealed the presence of three components with eigenvalues exceeding 1 (9.75, 1.89, and 1.30), explaining 54.2%, 10.5%, and 7.2% of the variance respectively. An inspection of the screeplot revealed a clear break after the second component, and there were only two items in the third component, one of which had a weak loading. It was decided to retain two components, which together explained 64.7% of the variance. Varimax rotation performed on these two components showed a number of strong loadings, with all variables loading substantially on only one component. Items for each of the two components were analysed for common themes, and were given subscale names accordingly. The three sub-scales are: (1) avoidant self-management of symptoms, and (2) symptom-focused self-management. There was a strong positive correlation between the three factors (r=.699). Subsequent analysis of the data was performed using the two Behaviours-P subscale scaled scores as two separate factors.

Table 2. Behaviour-P scale Rotated Component Matrix

	Components		
Scale items	1	2	3
Behaviour P -I quit activities that challenge me too much	.819	.202	.115
Behaviour P - Because of my symptoms I avoid trying new activities that hold the potential for failure	.817	.331	.232
Behaviour P -In order to avoid feelings of disappointment, I just try not to set myself goals or make plans	.797	.363	.078
Behaviour P - I do not answer the phone in case people are calling with social invitations	.793	.007	.154
Behaviour P -While I know I should make decisions about my personal relationships, I just let things go on as they are	.777	.278	.170
Behaviour P -Rather than try new activities, I tend to stick with the things I know	.767	.344	.135
Behaviour P -I would like to achieve things at work/school, but I have to set limits because of my symptoms	.669	.566	.075
Behaviour P - I avoid attending social activities because of my symptoms	.647	.593	.032
Behaviour P - I frequently attend the GP	.549	.427	-.431
Behaviour P - I avoid certain food/beverages to help me manage my symptoms	.086	.844	.179
Behaviour P - I eat specific foods/drink specific beverages to help me to manage my symptoms	.123	.836	.217
Behaviour P -I am constantly aware of my symptoms	.286	.830	.069
Behaviour P -I am constantly trying to find a cause or a solution for my symptoms	.429	.749	.051
Behaviour P -I ask for reassurance about my symptoms	.261	.723	-.006
Behaviour P -I spend a long time thinking over and over about my problems	.478	.701	.047
Behaviour P -When my symptoms are not as bad, I make the most of it and do as many things as I can (e.g. work, hobbies, socialising)	.264	.665	.204
Behaviour P - I avoid the GP	.191	.162	.854*
Behaviour P - I avoid talking about my symptoms	.363	.333	.619*
Extraction Method: Principal Component Analysis. Rotation Method: Varimax with Kaiser Normalization.[a] *subscale not included as it only consists of two items			
a. Rotation converged in 4 iterations.			

Perfectionism

The 16 items of the Perfectionism scale were subjected to factor analysis. Prior to this, the suitability for factor analysis was assessed. Inspection of the correlation matrix revealed the presence of many coefficients of .3 and above. The Kaiser-Mayer-Olkin value was .938, exceeding the recommended value of .6, and Bartlett's Test of Sphericity reached statistical significance, supporting the suitability of data for factor analysis. Factor analysis revealed the presence of two components with eigenvalues exceeding 1 (56.01 and 14.59), explaining 56.0% and 14.6% of the variance respectively. An inspection of the screeplot revealed a clear break after the second component. Varimax rotation performed on these two components showed a number of strong loadings, with all variables loading substantially on only one component. Factor analysis broadly confirmed the division of this scale into the two perfectionism subscales: unrelenting high standards (perfectionistic strivings) and concern about mistakes (perfectionistic concerns). Subsequent analysis of the data was performed using the two Perfectionism subscale scaled scores as two separate factors.

Table 3. Perfectionism scale Rotated Component Matrix

Scale items	Components	
	1	2
If I do not do as well as other people, it means I am an inferior human being	.896	.049
If I do not do well all the time, people will not respect me	.868	.058
People will probably think less of me if I make a mistake	.843	.220
The fewer mistakes I make, the more people will like me	.826	.165
If I fail partly, it is as bad as being a complete failure	.824	.281
If I fail at work, I am a failure as a person	.783	.240
If someone does a task at work better than I, then I feel like I failed the whole task	.707	.404
I should be upset if I make a mistake	.556	.447
I set higher goals than most people	.303	.863
I have extremely high standards	.332	.842
Other people seem to accept lower standards from themselves than I do	.182	.780
It is important to me that I be thoroughly competent in everything I do	.341	.773
I am very good at focusing my efforts on attaining a goal	-.138	.743
I expect higher performance in my daily tasks than most people	.489	.720
If I do not set the highest standards for myself, I am likely to end up a second-rate person	.651	.466
I hate being less than best at things	.685	.464

Extraction Method: Principal Component Analysis.
Rotation Method: Varimax with Kaiser Normalization.[a]
a. Rotation converged in 3 iterations.

Appendix E. Main research project target journal guidelines

BRITISH JOURNAL OF CLINICAL PSYCHOLOGY

Author Guidelines

The British Journal of Clinical Psychology publishes original contributions to scientific knowledge in clinical psychology. This includes descriptive comparisons, as well as studies of the assessment, aetiology and treatment of people with a wide range of psychological problems in all age groups and settings. The level of analysis of studies ranges from biological influences on individual behaviour through to studies of psychological interventions and treatments on individuals, dyads, families and groups, to investigations of the relationships between explicitly social and psychological levels of analysis.

All papers published in The British Journal of Clinical Psychology are eligible for Panel A: Psychology, Psychiatry and Neuroscience in the Research Excellence Framework (REF).

The following types of paper are invited:

• Papers reporting original empirical investigations

• Theoretical papers, provided that these are sufficiently related to the empirical data

• Review articles which need not be exhaustive but which should give an interpretation of the state of the research in a given field and, where appropriate, identify its clinical implications

• Brief reports and comments

1. Circulation

The circulation of the Journal is worldwide. Papers are invited and encouraged from authors throughout the world.

2. Length

The word limit for papers submitted for consideration to BJCP is 5000 words and any papers that are over this word limit will be returned to the authors. The word limit does not include the abstract, reference list, figures, or tables. Appendices however are included in the word limit. The Editors retain discretion to publish papers beyond this length in cases where the clear and concise expression of the scientific content requires greater length. In such a case, the authors should contact the Editors before submission of the paper.

3. Submission and reviewing

All manuscripts must be submitted via Editorial Manager. The Journal operates a policy of anonymous (double blind) peer review. We also operate a triage process in which submissions that are out of scope or otherwise inappropriate will be rejected by the editors without external peer review to avoid unnecessary delays. Before submitting, please read the terms and conditions of submission and the declaration of competing interests. You may also like to use the Submission Checklist to help you prepare your paper.

4. Manuscript requirements

• Contributions must be typed in double spacing with wide margins. All sheets must be numbered.

• Manuscripts should be preceded by a title page which includes a full list of authors and their affiliations, as well as the corresponding author's contact details. You may like to use this template. When entering the author names into Editorial Manager, the corresponding author will be asked to provide a CRediT contributor role to classify the role that each author played in creating the manuscript. Please see the Project CRediT website for a list of roles.

• The main document must be anonymous. Please do not mention the authors' names or affiliations (including in the Method section) and refer to any previous work in the third person.

• Tables should be typed in double spacing, each on a separate page with a self-explanatory title. Tables should be comprehensible without reference to the text. They should be placed at the end of the manuscript but they must be mentioned in the text.

• Figures can be included at the end of the document or attached as separate files, carefully labelled in initial capital/lower case lettering with symbols in a form consistent with text use. Unnecessary background patterns, lines and shading should be avoided. Captions should be listed on a separate sheet. The resolution of digital images must be at least 300 dpi. All figures must be mentioned in the text.

• All papers must include a structured abstract of up to 250 words under the headings: Objectives, Methods, Results, Conclusions. Articles which report original scientific research should also include a heading 'Design' before 'Methods'. The 'Methods' section for systematic reviews and theoretical papers should include, as a minimum, a description of the methods the author(s) used to access the literature they drew upon. That is, the abstract should summarize the databases that were consulted and the search terms that were used.

• All Articles must include Practitioner Points – these are 2–4 bullet points to detail the positive clinical implications of the work, with a further 2–4 bullet points outlining cautions or limitations of the study. They should be placed below the abstract, with the heading 'Practitioner Points'.

• For reference citations, please use APA style. Particular care should be taken to ensure that references are accurate and complete. Give all journal titles in full and provide DOI numbers where possible for journal articles.

• SI units must be used for all measurements, rounded off to practical values if appropriate, with the imperial equivalent in parentheses.

• In normal circumstances, effect size should be incorporated.

• Authors are requested to avoid the use of sexist language.

• Authors are responsible for acquiring written permission to publish lengthy quotations, illustrations, etc. for which they do not own copyright. For guidelines on editorial style, please consult the APA Publication Manual published by the American Psychological Association.

If you need more information about submitting your manuscript for publication, please email Vicki Pang, Editorial Assistant (bjc@wiley.com) or phone +44 (0) 1243 770 410.

5. Brief reports and comments

These allow publication of research studies and theoretical, critical or review comments with an essential contribution to make. They should be limited to 2000 words, including references. The abstract should not exceed 120 words and should be structured under these headings: Objective,

Method, Results, Conclusions. There should be no more than one table or figure, which should only be included if it conveys information more efficiently than the text. Title, author name and address are not included in the word limit.

6. Supporting Information

BJC is happy to accept articles with supporting information supplied for online only publication. This may include appendices, supplementary figures, sound files, videoclips etc. These will be posted on Wiley Online Library with the article. The print version will have a note indicating that extra material is available online. Please indicate clearly on submission which material is for online only publication. Please note that extra online only material is published as supplied by the author in the same file format and is not copyedited or typeset. Further information about this service can be found at http://authorservices.wiley.com/bauthor/suppmat.asp

7. Copyright and licenses

If your paper is accepted, the author identified as the formal corresponding author for the paper will receive an email prompting them to login into Author Services, where via the Wiley Author Licensing Service (WALS) they will be able to complete the license agreement on behalf of all authors on the paper.

For authors signing the copyright transfer agreement

If the OnlineOpen option is not selected the corresponding author will be presented with the copyright transfer agreement (CTA) to sign. The terms and conditions of the CTA can be previewed in the samples associated with the Copyright FAQs.

For authors choosing OnlineOpen

If the OnlineOpen option is selected the corresponding author will have a choice of the following Creative Commons License Open Access Agreements (OAA):

- Creative Commons Attribution Non-Commercial License OAA

- Creative Commons Attribution Non-Commercial -NoDerivs License OAA

To preview the terms and conditions of these open access agreements please visit the Copyright FAQs and you may also like to visit the Wiley Open Access Copyright and Licence page.

If you select the OnlineOpen option and your research is funded by The Wellcome Trust and members of the Research Councils UK (RCUK) or the Austrian Science Fund (FWF) you will be given the opportunity to publish your article under a CC-BY license supporting you in complying with your Funder requirements. For more information on this policy and the Journal's compliant self-archiving policy please visit our Funder Policy page.

8. Colour illustrations

Colour illustrations can be accepted for publication online. These would be reproduced in greyscale in the print version. If authors would like these figures to be reproduced in colour in print at their expense they should request this by completing a Colour Work Agreement form upon acceptance of the paper. A copy of the Colour Work Agreement form can be downloaded **here**.

9. Pre-submission English-language editing

Authors for whom English is a second language may choose to have their manuscript professionally edited before submission to improve the English. A list of independent suppliers of editing services can be found at http://authorservices.wiley.com/bauthor/english_language.asp. All services are paid for and arranged by the author, and use of one of these services does not guarantee acceptance or preference for publication.

10. Author Services

Author Services enables authors to track their article – once it has been accepted – through the production process to publication online and in print. Authors can check the status of their articles online and choose to receive automated e-mails at key stages of production. The author will receive an e-mail with a unique link that enables them to register and have their article automatically added to the system. Please ensure that a complete e-mail address is provided when submitting the manuscript. Visit http://authorservices.wiley.com/bauthor/ for more details on online production tracking and for a wealth of resources including FAQs and tips on article preparation, submission and more.

11. The Later Stages

The corresponding author will receive an email alert containing a link to a web site. A working e-mail address must therefore be provided for the corresponding author. The proof can be downloaded as a PDF (portable document format) file from this site. Acrobat Reader will be required in order to read this file. This software can be downloaded (free of charge) from the following web site: http://www.adobe.com/products/acrobat/readstep2.html.

This will enable the file to be opened, read on screen and annotated direct in the PDF. Corrections can also be supplied by hard copy if preferred. Further instructions will be sent with the proof. Excessive changes made by the author in the proofs, excluding typesetting errors, will be charged separately.

12. Early View

British Journal of Clinical Psychology is covered by the Early View service on Wiley Online Library. Early View articles are complete full-text articles published online in advance of their publication in a printed issue. Articles are therefore available as soon as they are ready, rather than having to wait for the next scheduled print issue. Early View articles are complete and final. They have been fully reviewed, revised and edited for publication, and the authors' final corrections have been incorporated. Because they are in final form, no changes can be made after online publication. The nature of Early View articles means that they do not yet have volume, issue or page numbers, so they cannot be cited in the traditional way. They are cited using their Digital Object Identifier (DOI) with no volume and issue or pagination information. E.g., Jones, A.B. (2010). Human rights Issues. *Human Rights Journal*. Advance online publication. doi:10.1111/j.1467-9299.2010.00300.x

Further information about the process of peer review and production can be found in this document: What happens to my paper? Appeals are handled according to the procedure recommended by COPE.

Service Improvement Project Appendices

Appendix F. Focus group semi-structured interview schedule.

General information:

What is your understanding of what reflective practice is?
What do you think is the purpose of reflective practice?
Prompts: *what are the aims of the group? What do you think the facilitators think the purpose is?*

Barriers and facilitators:

What things make you want to attend reflective practice groups?
Are there factors that make it more likely that you will attend reflective practice?
What gets in the way of going to reflective practice groups?
Prompts: *Practical barriers, non-practical barriers, worries about attending. Is it hard to step back and think about clients? Is there an urge to 'do something?*

Usefulness of reflective practice:

Do you feel that reflective practice is useful?
Are there ways that reflective practice could be more useful?
Prompts: In what ways? What would need to be changed?

Does reflective practice effect your work with service users?
Prompts: In what ways? If not, why not? – how could it be changed to make it effect work? Applying theory to practice? Understanding of complex clients?

Does reflective practice impact on your professional development?
Prompts: Learning, learning from experiences, skills and competencies

Does reflective practice influence how you understand and manage your responses to your work?
Prompts: Emotional impact of work, thinking about own emotions and feelings, stress / caseload demands. How about managing team dynamics / relationships?

What would improve your experience of the reflective practice sessions?
Prompts: How often should groups be? Where should they be held? Timing of groups, structure of groups – attendees, length of group.

Additional questions:

What messages do you hear about the value of reflective practice? Does this impact on your views?
Prompts: Team views, team manager's views, Trust views, professions views.

Appendix G. Description of themes derived from the focus group.

Theme	Sub-theme	Description
Conditions needed for reflective practice	Practical	Having consistent times and dates for sessions Having a separate space for sessions Sessions needing to be optional Having protected time for sessions Sessions resulting in a plan for going forward
	Cultural and organisational	Support of managers Feeling ok at the end of sessions
Barriers to reflective practice	Practical barriers	Time and caseload demands Understanding what RP is, and why it is useful Not having consistent times/dates for sessions
	Anxiety	About sharing. Perception of potential criticism. Sharing cases/struggles seen as a weakness. Risks of sharing (including confidentiality).
	Cultural barriers	Protecting self by avoiding reflective practice. Culture within the team (informed by historical events). Team dynamics Hierarchy of job roles – feeling safe to suggest ideas to those of a higher banding. Avoiding being vulnerable
	Safe space	Feeling safe to contribute ideas Knowing what is safe to share To share emotions, personal difficulties and vulnerabilities
Usefulness of reflective practice	For the self	Being a better practitioner. Managing anxiety and stress related to work. Self-care. Reassurance. Learning from others. Taking ideas and generalising them to other cases. Managing emotions. Feeling supported Confidence. Validation
	For the team	Different ideas and perspectives from different professions Learning from others Supporting colleagues and being supported by them Sharing ideas and knowledge Building team relationships and team working
	For service users	Improved service user care When things seem 'stuck' Working with complex/risky cases Having a plan going forward New outlook/ideas for work with service user
Improvements which could be made to reflective practice	(no sub-themes)	Having a theme or teaching attached to RP sessions Manager support and regular promotion Clarity around what RP is and why it's important to improve staff buy-in Making it feel like a safe space to share More RP sessions Thinking about group sizes and participants

Appendix H. Study-specific reflective practice survey.

2gether Making life better — Foundation Trust For Gloucestershire NHS — University of Bath

QUESTIONNAIRE

The use of reflective practice in Recovery Team working

Please complete all of the questions below. There are no right or wrong answers.

1) In your view, what is the purpose of reflective practice?

*Please tick the **5 most important** options. You can leave some items blank:*

- ☐ Case discussion
- ☐ Developing care plans
- ☐ Learning new things
- ☐ Supporting other colleagues
- ☐ Reassurance
- ☐ Managing anxiety/stress
- ☐ Increasing confidence
- ☐ Improving service user care
- ☐ Making theory-practice links
- ☐ Developing a greater understanding of service users
- ☐ Talking about/improving how the team works together
- ☐ Helping me/the team work with complex cases
- ☐ Receiving support from colleagues
- ☐ Managing emotional reactions to work
- ☐ Understanding how my experiences, beliefs and values affect my work
- ☐ Helping me/the team when it feels 'stuck' working with a service user
- ☐ I don't know what reflective practice is or why we do it
- ☐ Other (please specify):_____

2) Have you ever received any training or guidance around reflective practice?

☐ Yes (please specify): _____ ☐ No

3) Would it help to have more information about what reflective practice is and why it is available?

☐ Yes ☐ No ☐ Unsure

4) Is reflective practice something that is currently on offer for you to attend?

☐ Yes ☐ No

5) Do you currently go to reflective practice sessions?

☐ Yes ☐ No

6) What are the main things that get in the way of you attending reflective practice sessions?

*Please select the **5 most important** options. You can leave some items blank:*

- ☐ Time/caseload demands
- ☐ Timings don't suit me
- ☐ The sessions aren't useful
- ☐ I don't like speaking in groups
- ☐ The sessions are too emotional
- ☐ I don't know when session are
- ☐ Sessions are held on days I don't work
- ☐ Not having consistent times/dates for sessions
- ☐ Worry about being judged or criticised
- ☐ Team relationships make it hard for me to speak openly
- ☐ I don't know what I'm supposed to talk about in the group
- ☐ Talking about my work in a group feels exposing
- ☐ I don't get the chance to speak when I attend
- ☐ Other (please specify): _____

7) Where else do you have the opportunity to reflect on your cases?
Please tick all that apply.

☐ Team meetings ☐ Through informal conversations with colleagues
☐ Supervision ☐ 1:1 meetings about cases
☐ Other (please specify): _____

8) Has anyone encouraged you attend reflective practice for your casework?
☐ Yes ☐ No

9) Do you feel that reflective practice is seen as important…
a) By team managers? ☐ Yes ☐ No
b) By the Trust? ☐ Yes ☐ No
c) By your colleagues? ☐ Yes ☐ No

10) I would feel safer sharing in a reflective practice group if…
Please tick all that apply:

☐ The same people attend each time
☐ The group is small
☐ Everyone in the group shared cases
☐ I was clear of the boundaries of the group (e.g. around confidentiality)
☐ I had more information about the structure, content and purpose of the group
☐ I don't think changes are needed to make it feel safer
☐ Other (please specify): _____

11) Do you think reflective practice groups should be held…
☐ Within teams (e.g. a group for team 1, a group for team 2 etc.) ☐ Across teams?

12) How often do you think reflective practice groups should be?
☐ Weekly ☐ Fortnightly ☐ Monthly ☐ Less than monthly

13) Are there other ways that reflective practice sessions could be changed or improved to make them more useful?

- _____
- _____
- _____

This is the end of the questionnaire, thank you for your participation.

Please return this questionnaire to the researcher in the Freepost envelope provided, along with the consent form (sealed in the smaller envelope provided)

Please now refer to the "Participant debrief sheet."

Appendix I. One-page summary of results shared with Recovery Team staff

2gether
Making life better

Foundation Trust
For Gloucestershire NHS

The use of reflective practice in Recovery Team working
Questionnaire results

We recently distributed a questionnaire to gather your views about Reflective Practice. Thank you to everyone who completed it, we had 19 responses in total. This page is a summary of the results of the questionnaire.

We asked you what you think the purpose of Reflective Practice is, your top five responses were: supporting other colleagues, helping me/the team work with complex cases, improving service user care, developing a greater understanding of service users, and helping me/the team when it feels stuck working with a service user.

The majority of staff told us that they hadn't received any training or guidance around Reflective Practice (11 people), and most people said that it would be helpful to have more information (13 people).

Most staff felt that Reflective Practice is available for them to attend (16 staff), however, most said that they don't currently attend (13 people).

The main things that were reported to get in the way of attending reflective practice sessions were:

- Time/caseload demands.
- Not knowing when the sessions are.
- Not having consistent times/dates for sessions.
- Timings not suiting people.

Everyone who completed the questionnaire said that they have the opportunity to reflect on their cases somewhere (in team meetings, supervision, informal conversations with colleagues, and in 1:1 meetings).

The majority of staff had been encouraged to attend Reflective Practice (9 people), and most people felt that it is seen as important by Team Managers (15 people) and colleagues (15 people).

Most people felt that Reflective Practice groups should be held across teams (13 people), however, there was mixed views about how often groups should be (6 people said weekly, 4 fortnightly, and 7 monthly).

What happens now?

We are going to use your responses from the questionnaire to think about ways that Reflective Practice sessions can be changed or improved, and there were some really good ideas shared by staff about this.

Please let us know if you have any questions or thoughts about the results. Thank you again for completing the questionnaire.

Holly Panting
Clinical Psychologist in Training
University of Bath
Hp442@bath.ac.uk

Hilary Priestman
Lead Clinical Psychologist
CPI in Recovery Team West
H.Priestman@nhs.net

Appendix J. Service improvement project and systematic review of the literature target journal author guidelines

CLINICAL PSYCHOLOGY AND PSYCHOTHERAPY

Editor: Paul Emmelkamp
Impact Factor: 1.933
ISI Journal Citation Reports © Ranking: 2016: 56/121 (Psychology Clinical)
Online ISSN: 1099-0879

AUTHOR GUIDELINES

Sections

1. SUBMISSION

Authors should kindly note that submission implies that the content has not been published or submitted for publication elsewhere except as a brief abstract in the proceedings of a meeting or symposium.

Once the submission materials have been prepared in accordance with the Author Guidelines, manuscripts should be submitted online at http://mc.manuscriptcentral.com/cpp.

The submission system will prompt you to use an ORCiD (a unique author identifier) to help distinguish your work from that of other researchers. Click here to find out more.

Click here for more details on how to use ScholarOne Manuscripts.

For help with submissions, please contact Editor Paul Emmelkamp: P.M.G.Emmelkamp@uva.nl

2. AIMS AND SCOPE

Clinical Psychology & Psychotherapy aims to keep clinical psychologists and psychotherapists up to date with new developments in their fields. The Journal will provide an integrative impetus both between theory and practice and between different orientations within clinical psychology and psychotherapy. *Clinical Psychology & Psychotherapy* will be a forum in which practioners can present their wealth of expertise and innovations in order to make these available to a wider audience. Equally, the Journal will contain reports from researchers who want to address a larger clinical audience with clinically relevant issues and clinically valid research. The journal is primarily focused on clinical studies of clinical populations and therefore no longer normally

accepts student-based studies.

This is a journal for those who want to inform and be informed about the challenging field of clinical psychology and psychotherapy.

3. MANUSCRIPT CATEGORIES AND REQUIREMENTS

Research articles: Substantial articles making a significant theoretical or empirical contribution.

Reviews: Articles providing comprehensive reviews or meta-analyses with an emphasis on clinically relevant studies.

Assessments: Articles reporting useful information and data about new or existing measures.

Practitioner Reports: Shorter articles (a maximum of 1200 words) that typically contain interesting clinical material. These should use (validated) quantitative measures and add substantially to the literature (i.e. be innovative).

4. PREPARING THE SUBMISSION

Parts of the Manuscript

The manuscript should be submitted in separate files: title page; main text file; figures.

File types

Preferred formats for the text and tables of your manuscript are .doc, .docx, .rtf, .ppt, .xls. LaTeX files may be submitted provided that an .eps or .pdf file is provided in addition to the source files. Figures may be provided in .tiff or .eps format.

New Manuscript

Non-LaTeX users: Upload your manuscript files. At this stage, further source files do not need to be uploaded.

LaTeX users: For reviewing purposes you should upload a single .pdf that you have generated from your source files. You must use the File Designation "Main Document" from the dropdown box.

Revised Manuscript

Non-LaTeX users: Editable source files must be uploaded at this stage. Tables must be on separate pages after the reference list, and not be incorporated into the main text. Figures should be uploaded as separate figure files.

LaTeX users: When submitting your revision you must still upload a single .pdf that you have generated from your revised source files. You must use the File Designation "Main Document" from the dropdown box. In addition you must upload your TeX source files. For all your source files you must use the File Designation "Supplemental Material not for review". Previous versions of uploaded documents must be deleted. If your manuscript is accepted for publication we will use the files you upload to typeset your article within a totally digital workflow.

The text file should be presented in the following order:

1 A short informative title containing the major key words. The title should not contain abbreviations (see Wiley's best practice SEO tips);
2 A short running title of less than 40 characters;
3 The full names of the authors;
4 The author's institutional affiliations where the work was conducted, with a footnote for the author’s present address if different from where the work was conducted;
5 Conflict of Interest statement;
6 Acknowledgments.

7 Abstract, Key Practitioner Message and keywords;
8 Main text;
9 References;
10Tables (each table complete with title and footnotes);
11Figure legends;
12Appendices (if relevant).
Figures and supporting information should be supplied as separate files.

Authorship

Please refer to the journal's Authorship policy in the Editorial Policies and Ethical Considerations section below for details on author listing eligibility.

Acknowledgments

Contributions from anyone who does not meet the criteria for authorship should be listed, with permission from the contributor, in an Acknowledgments section. Financial and material support should also be mentioned, including the name(s) of any sponsor(s) of the research contained in the paper, along with grant number(s). Thanks to anonymous reviewers are not appropriate.

Conflict of Interest Statement

Authors will be asked to provide a conflict of interest statement during the submission process. For details on what to include in this section, see the Conflict of Interest section in the Editorial Policies and Ethical Considerations section below. Submitting authors should ensure they liaise with all co-authors to confirm agreement with the final statement.

Abstract

Enter an abstract of no more than 250 words containing the major keywords. An abstract is a concise summary of the whole paper, not just the conclusions, and is understandable without reference to the rest of the paper. It should contain no citation to other published work.

Key Practitioner Message All articles should include a Key Practitioner Message of 3-5 bullet points summarizing the relevance of the article to practice.

Keywords

Please provide five-six keywords (see Wiley's best practice SEO tips).

Main Text

1 The journal uses US spelling; however, authors may submit using either option, as spelling of accepted papers is converted during the production process.
2 Footnotes to the text are not allowed and any such material should be incorporated into the text as parenthetical matter.

References

References should be prepared according to the *Publication Manual of the American Psychological Association* (6th edition). This means in-text citations should follow the author-date method

whereby the author's last name and the year of publication for the source should appear in the text, for example, (Jones, 1998). The complete reference list should appear alphabetically by name at the end of the paper. Please note that for journal articles, issue numbers are not included unless each issue in the volume begins with page 1, and a DOI should be provided for all references where available.

For more information about APA referencing style, please refer to the APA FAQ.

Reference examples follow:

Journal article

Beers, S. R. , & De Bellis, M. D. (2002). Neuropsychological function in children with maltreatment-related posttraumatic stress disorder. *The American Journal of Psychiatry, 159,* 483–486. doi: 10.1176/appi.ajp.159.3.483

Book Bradley-Johnson, S. (1994). *Psychoeducational assessment of students who are visually impaired or blind: Infancy through high school* (2nd ed.). Austin, TX: Pro-ed.

Internet Document Norton, R. (2006, November 4). How to train a cat to operate a light switch [Video file]. Retrieved from *http://www.youtube.com/watch?v=Vja83KLQXZs*

Endnotes

Endnotes should be placed as a list at the end of the paper only, not at the foot of each page. They should be numbered in the list and referred to in the text with consecutive, superscript Arabic numerals. Keep endnotes brief; they should contain only short comments tangential to the main argument of the paper.

Tables

Tables should be self-contained and complement, not duplicate, information contained in the text. They should be supplied as editable files, not pasted as images. Legends should be concise but comprehensive – the table, legend, and footnotes must be understandable without reference to the text. All abbreviations must be defined in footnotes. Footnote symbols: †, ‡, §, ¶, should be used (in that order) and *, **, *** should be reserved for P-values. Statistical measures such as SD or SEM should be identified in the headings.

Figure Legends

Legends should be concise but comprehensive – the figure and its legend must be understandable without reference to the text. Include definitions of any symbols used and define/explain all abbreviations and units of measurement.

Figures

Although authors are encouraged to send the highest-quality figures possible, for peer-review purposes, a wide variety of formats, sizes, and resolutions are accepted. Click here for the basic figure requirements for figures submitted with manuscripts for initial peer review, as well as the more detailed post-acceptance figure requirements.

Figures submitted in color may be reproduced in color online free of charge. Please note, however, that it is preferable that line figures (e.g. graphs and charts) are supplied in black and

white so that they are legible if printed by a reader in black and white. The cost of printing color illustrations in the journal will be charged to the author. The cost is £150 for the first figure and £50 for each figure thereafter. If color illustrations are supplied electronically in either TIFF or EPS format, they may be used in the PDF of the article at no cost to the author, even if this illustration was printed in black and white in the journal. The PDF will appear on the Wiley Online Library site.

Additional Files

Appendices

Appendices will be published after the references. For submission they should be supplied as separate files but referred to in the text.

General Style Points

The following points provide general advice on formatting and style.

1 **Abbreviations:** In general, terms should not be abbreviated unless they are used repeatedly and the abbreviation is helpful to the reader. Initially, use the word in full, followed by the abbreviation in parentheses. Thereafter use the abbreviation only.
2 **Units of measurement:** Measurements should be given in SI or SI-derived units. Visit the Bureau International des Poids et Mesures (BIPM) website for more information about SI units.
3 **Numbers:** numbers under 10 are spelled out, except for: measurements with a unit (8mmol/l); age (6 weeks old), or lists with other numbers (11 dogs, 9 cats, 4 gerbils).
4 **Trade Names:** Chemical substances should be referred to by the generic name only. Trade names should not be used. Drugs should be referred to by their generic names. If proprietary drugs have been used in the study, refer to these by their generic name, mentioning the proprietary name and the name and location of the manufacturer in parentheses.

Wiley Author Resources

Manuscript Preparation Tips: Wiley has a range of resources for authors preparing manuscripts for submission available here. In particular, authors may benefit from referring to Wiley's best practice tips on Writing for Search Engine Optimization.

Editing, Translation, and Formatting Support: Wiley Editing Services can greatly improve the chances of a manuscript being accepted. Offering expert help in English language editing, translation, manuscript formatting, and figure preparation, Wiley Editing Services ensures that the manuscript is ready for submission.

Video Abstracts A video abstract can be a quick way to make the message of your research accessible to a much larger audience. Wiley and its partner Research Square offer a service of professionally produced video abstracts, available to authors of articles accepted in this journal. You can learn more about it by clicking here. If you have any questions, please direct them to videoabstracts@wiley.com.

5. EDITORIAL POLICIES AND ETHICAL CONSIDERATIONS

Peer Review and Acceptance

The acceptance criteria for all papers are the quality and originality of the research and its significance to journal readership. Except where otherwise stated, manuscripts are single-blind peer

reviewed. Papers will only be sent to review if the Editor-in-Chief determines that the paper meets the appropriate quality and relevance requirements.

Wiley's policy on the confidentiality of the review process is available here.

Data Sharing and Data Accessibility

The journal encourages authors to share the data and other artefacts supporting the results in the paper by archiving it in an appropriate public repository. Authors should include a data accessibility statement, including a link to the repository they have used, in order that this statement can be published alongside their paper.

Human Studies and Subjects

For manuscripts reporting clinical studies that involve human participants, a statement identifying the ethics committee that approved the study and confirmation that the study conforms to recognized standards is required, for example: Declaration of Helsinki; US Federal Policy for the Protection of Human Subjects; or European Medicines Agency Guidelines for Good Clinical Practice. It should also state clearly in the text that all persons gave their informed consent prior to their inclusion in the study.

Patient anonymity should be preserved. Photographs need to be cropped sufficiently to prevent human subjects being recognized (or an eye bar should be used). Images and information from individual participants will only be published where the authors have obtained the individual's free prior informed consent. Authors do not need to provide a copy of the consent form to the publisher; however, in signing the author license to publish, authors are required to confirm that consent has been obtained. Wiley has a standard patient consent form available for use.

Clinical Trial Registration

The journal requires that clinical trials are prospectively registered in a publicly accessible database and clinical trial registration numbers should be included in all papers that report their results. Authors are asked to include the name of the trial register and the clinical trial registration number at the end of the abstract. If the trial is not registered, or was registered retrospectively, the reasons for this should be explained.

Conflict of Interest

The journal requires that all authors disclose any potential sources of conflict of interest. Any interest or relationship, financial or otherwise that might be perceived as influencing an author's objectivity is considered a potential source of conflict of interest. These must be disclosed when directly relevant or directly related to the work that the authors describe in their manuscript. Potential sources of conflict of interest include, but are not limited to: patent or stock ownership, membership of a company board of directors, membership of an advisory board or committee for a company, and consultancy for or receipt of speaker's fees from a company. The existence of a conflict of interest does not preclude publication. **If the authors have no conflict of interest to declare, they must also state this at submission**. It is the responsibility of the corresponding author to review this policy with all authors and collectively to disclose with the submission ALL pertinent commercial and other relationships.

Funding

Authors should list all funding sources in the Acknowledgments section. Authors are responsible for the accuracy of their funder designation. If in doubt, please check the Open Funder Registry for the correct nomenclature: https://www.crossref.org/services/funder-registry/

Authorship

The list of authors should accurately illustrate who contributed to the work and how. All those listed as authors should qualify for authorship according to the following criteria:

1 Have made substantial contributions to conception and design, or acquisition of data, or analysis and interpretation of data;
2 Been involved in drafting the manuscript or revising it critically for important intellectual content;
3 Given final approval of the version to be published. Each author should have participated sufficiently in the work to take public responsibility for appropriate portions of the content; and
4 Agreed to be accountable for all aspects of the work in ensuring that questions related to the accuracy or integrity of any part of the work are appropriately investigated and resolved.

Contributions from anyone who does not meet the criteria for authorship should be listed, with permission from the contributor, in the Author's Note on the title page (e.g., to recognize contributions from people who provided technical help, collation of data, writing assistance, acquisition of funding, or a department chairperson who provided general support). Prior to submitting the article all authors should agree on the order in which their names will be listed in the manuscript.

Additional Authorship Options. Joint first or senior authorship: In the case of joint first authorship, a footnote should be added to the author listing, e.g. 'X and Y should be considered joint first author' or 'X and Y should be considered joint senior author.'

Publication Ethics

This journal is a member of the Committee on Publication Ethics (COPE). Note this journal uses iThenticate's CrossCheck software to detect instances of overlapping and similar text in submitted manuscripts. Read Wiley's Top 10 Publishing Ethics Tips for Authors and Wiley's Publication Ethics Guidelines.

ORCiD

As part of the journal's commitment to supporting authors at every step of the publishing process, the journal requires the submitting author (only) to provide an ORCiD identifier when submitting a manuscript. This takes around 2 minutes to complete. Find more information here.

6. AUTHOR LICENSING

If a paper is accepted for publication, the author identified as the formal corresponding author will receive an email prompting them to log in to Author Services, where via the Wiley Author Licensing Service (WALS) they will be required to complete a copyright license agreement on behalf of all authors of the paper.

Authors may choose to publish under the terms of the journal's standard copyright agreement, or

OnlineOpen under the terms of a Creative Commons License.

General information regarding licensing and copyright is available here. To review the Creative Commons License options offered under OnlineOpen, please click here. (Note that certain funders mandate a particular type of CC license be used; to check this please click here.)

Self-Archiving Definitions and Policies: Note that the journal's standard copyright agreement allows for self-archiving of different versions of the article under specific conditions. Please click here for more detailed information about self-archiving definitions and policies.

Open Access fees: Authors who choose to publish using OnlineOpen will be charged a fee. A list of Article Publication Charges for Wiley journals is available here.

Funder Open Access: Please click here for more information on Wiley's compliance with specific Funder Open Access Policies.

7. PUBLICATION PROCESS AFTER ACCEPTANCE

Accepted Article Received in Production

When an accepted article is received by Wiley's production team, the corresponding author will receive an email asking them to login or register with Wiley Author Services. The author will be asked to sign a publication license at this point.

Guidelines for Cover Submission

One of the best ways to showcase your work is with an eye-catching journal issue cover. After your article is accepted for publication, you can submit your idea for a cover image. If you would like to send a suggestion for cover artwork related to your article, please follow these general guidelines.

Proofs

Once the paper is typeset, the author will receive an email notification with full instructions on how to provide proof corrections.

Please note that the author is responsible for all statements made in their work, including changes made during the editorial process – authors should check proofs carefully. Note that proofs should be returned within 48 hours from receipt of first proof.

Publication Charges

Colour figures. Colour figures may be published online free of charge; however, the journal charges for publishing figures in colour in print. If the author supplies colour figures at Early View publication, they will be invited to complete a colour charge agreement in RightsLink for Author services. The author will have the option of paying immediately with a credit or debit card, or they can request an invoice. If the author chooses not to purchase color printing, the figures will be converted to black and white for the print issue of the journal.

Early View

The journal offers rapid publication via Wiley's Early View service. Early View (Online Version of

Record) articles are published on Wiley Online Library before inclusion in an issue. Note there may be a delay after corrections are received before the article appears online, as Editors also need to review proofs. Once the article is published on Early View, no further changes to the article are possible. The Early View article is fully citable and carries an online publication date and DOI for citations.

8. POST PUBLICATION

Access and Sharing

When the article is published online:

- The author receives an email alert (if requested).
- The link to the published article can be shared for free with your contacts or through social media.
- The author will have free access to the paper (after accepting the Terms & Conditions of use, they can view the article).
- The corresponding author and co-authors can nominate up to ten colleagues to receive a publication alert and free online access to the article.
-

Promoting the Article

To find out how to best promote an article, click here.

Measuring the Impact of an Article

Wiley also helps authors measure the impact of their research through specialist partnerships with Kudos and Altmetric.

9. EDITORIAL OFFICE CONTACT DETAILS

Editor Paul Emmelkamp: P.M.G.Emmelkamp@uva.nl

Author Guidelines updated 28th February 2018

Critical Review of the Literature Appendices

Appendix K. Table of supplementary information about studies

Table 1. Supplementary information about studies: primary outcome data

Study and conditions	**Primary outcomes**
<u>*RCTs*</u>	
Beaumont et al. (2012) *CBT+CFT group vs CBT group*	***Avoidance***: significant reduction in both groups F(1,30)=293.596, p≤ 0.001). Significantly greater reduction of avoidance symptoms in CMT+CBT group (reduction=15.81) than the CBT group (reduction=12.43); t(30)=-2.047, p≤ 0.05.
	Hyper-arousal: significant reduction in both groups (F(1,30)=262.657,p≤ 0.001. No significant difference between groups; F(1,30)=2.365, p=.135.
	Intrusion: significant reduction in symptoms in both groups (F(1,30)=293.596, p≤ 0.001. No significant difference between the two groups; F(1,30)=.250, p=6.21.
Braehler et al. (2013) *CFT+TAU group vs TAU*	***Avoidance***: non-significant reductions in avoidance pre-post treatment in both CFT group (r=-.41); and TAU (r=-.30). No significant differences between groups.
	Symptom severity: CFT group had significantly more improvement and less exacerbation at follow-up than TAU; U=34.5, Z=-4.04, p<0.001, r=-0.68.
	Psychosis outcomes: CFT group had significant association between increases in compassion and decreases in: social marginalization (r=-0.74, Z=-2.01, p=0.04); fear of relapse (r=-0.52 p=0.045); entrapment (r=-0.56, p=0.031); intrusiveness (r=-0.58, p=0.022), compared to non-signficant associations in TAU.
Kelly et al. (2017) *CFT group vs TAU*	***Fears of compassion:*** CFT group had significant decreases in both fears of self-compassion (pre M=2.24, post M=1.25) and fear of receiving compassion (pre M=1.94, post M=1.51), compared to non-signficant changes in TAU. Medium effect of Condition X Time on both fears of self-compassion (F(1,42)=6.33, p<.05, r=0.36), and fear of receiving compassion (F(1,42)=3.78, p=<.05, r=0.29).
	Eating pathology: significant decreases in the CFT group but not for TAU, with a large effect size (Condition x Time; F(1,42)=11.28, p<.01, r=0.46).
Noorbala et al. (2013)	*Not measured*

Study and conditions	**Primary outcomes**
CMT group vs no intervention	
Non-RCTs	
Beaumont et al. (2016a)	***Avoidance***: greater reduction in the CFT group than controls, though not significant.
TF-CBT +CFT group vs TF-CBT group	
	Hyper-arousal: greater reduction in the CFT group than controls, though not significant.
	Intrusion: greater reduction in the CFT group than controls, though not significant.
Cuppage et al. (2017)	***Distress***: significant reduction in CFT group (M=0.49, SD=0.13) to post intervention (M=0.43, SD=0.11); p<.001. No significant change in controls.
CFT group vs TAU	
	Fears of self-compassion: significant reduction in CFT group from pre (M=32.60, SD=13.90) to post intervention (M=23.59, SD=13.70); p<.001. No significant change in controls.
	When baseline differences were controlled for, there was a significantly greater improvement for CFT condition than controls; F(2,84)=18.12, p<.001, n^2=.18.
	Psychopathology: when baseline levels were controlled for, there was a significantly greater improvement for the CFT group than controls for psychopathology symptoms; F(2,84)=6.84,p<.05, n^2=.08.
Observational	
Ashworth et al. (2015)	*Not measured*
Group and individual CFT	
Beaumont et al. (2016b)	*Not measured*
Introduction to CFT group workshop	
Boersma et al. (2015)	***Social anxiety:*** five participants had improvements in social anxiety following intervention, but improvement was only significant for four participants.
Individual CFT	
Clapton et al. (2017)	***Psychological distress and wellbeing:*** no significant change observed in overall psychological distress (z=-0.954, p=0.34) or psychological wellbeing (z=-0.28, p=0.783).
CFT group	
Cooper and Frearson (2017)	***General functioning:*** scores increased overall from pre (score=64) to post intervention (score=78), indicating an increase in distress.
Individual CFT	
Gilbert and Procter	*Not measured*

Study and conditions	**Primary outcomes**
(2006)	
CMT group	
Judge et al. (2012)	*Not measured*
CFT group	
Laithwaite et al. (2009)	***Self-esteem:*** significant changes from pre-intervention to 6-weeks follow up (Z=-2.80), n-ties=15, p<.01, r=.047). No significant changes to self-image.
CFT group	
	General psychopathology: significant changes post intervention (Z=2.23, n-ties=14, p<.05, r=0.38), maintained at follow-up (Z=2.75, n-ties=12, p<.01, r=0.41). No significant changes observed on the PANSS positive, negative or depression scales.
Lucre and Corten (2013)	***Stress***: significant improvement in stress following CFT.
CFT group	
	General functioning: significant changes occurred post CFT on CORE subscales of well-being, symptoms, and functioning. Reductions in risk were non-significant.
Mayhew and Gilbert (2008)	***General psychopathology:*** All participants showed a decease post intervention.
Individual CMT	
	Beliefs about voices: All participants had an improvement in total BAVQ score, and all voices became less malevolent, and less persecuting. Two out of three participants heard more reassuring voices.

Appendix L. Amended Newcastle Ottawa Risk of Bias for cohort-studies

Note: A study can be awarded a maximum of one star for each numbered item within the Selection and Outcome categories. A maximum of two stars can be given for Comparability

Selection

1) Representativeness of the exposed cohort

a) truly representative of the average _____ (describe) in the community ∗

b) somewhat representative of the average _____ in the community ∗

c) selected group of users e.g. nurses, volunteers

d) no description of the derivation of the cohort

2) Selection of the non-exposed cohort

a) drawn from the same community as the exposed cohort ∗

b) drawn from a different source

c) no description of the derivation of the non-exposed cohort

3) Ascertainment of exposure

a) secure record (e.g. surgical records) ∗

b) structured interview *(detailed description of intervention provided)* ∗

c) written self-report

d) no description

4) Demonstration that outcome of interest was not present at start of study

a) yes ∗

b) no

Comparability

1) Comparability of cohorts on the basis of the design or analysis

a) study controls for _____ (select the most important factor) ∗

b) study controls for any additional factor ∗ (This criteria could be modified to indicate specific control for a second important factor.)

Outcome

1) Assessment of outcome

a) independent blind assessment ∗

b) record linkage *(including validated self-report measures)* ∗

c) self-report

d) no description

2) Was follow-up long enough for outcomes to occur

a) yes (select an adequate follow up period for outcome of interest) $\geq 3\ months$ ∗

b) no

3) Adequacy of follow up of cohorts

a) complete follow up - all subjects accounted for ∗

b) subjects lost to follow up unlikely to introduce bias - small number lost - > *70* % (select an adequate %) follow up, or description provided of those lost) ∗

c) follow up rate < *70* % and no description of those lost

d) no statemen

Appendix M.. Cochrane Risk of Bias Tool for RCTs (Higgins et al., 2011).

Domain	Support for judgement	Review authors' judgement
Selection bias		
Random sequence generation	Describe the method used to generate the allocation sequence in sufficient detail to allow an assessment of whether it should produce comparable groups.	Selection bias (biased allocation to interventions) due to inadequate generation of a randomised sequence.
Allocation concealment	Describe the method used to conceal the allocation sequence in sufficient detail to determine whether intervention allocations could have been foreseen in advance of, or during, enrolment.	Selection bias (biased allocation to interventions) due to inadequate concealment of allocations prior to assignment.
Performance bias		
Blinding of participants and personnel ***Assessments should be made for each main outcome (or class of outcomes)***	Describe all measures used, if any, to blind study participants and personnel from knowledge of which intervention a participant received. Provide any information relating to whether the intended blinding was effective.	Performance bias due to knowledge of the allocated interventions by participants and personnel during the study.
Detection bias		
Blinding of outcome assessment ***Assessments should be made for each main outcome (or class of outcomes)***	Describe all measures used, if any, to blind outcome assessors from knowledge of which intervention a participant received. Provide any information relating to whether the intended blinding was effective.	Detection bias due to knowledge of the allocated interventions by outcome assessors.
Attrition bias		
Incomplete outcome data ***Assessments should be made for each main outcome (or class of outcomes)***	Describe the completeness of outcome data for each main outcome, including attrition and exclusions from the analysis. State whether attrition and exclusions were reported, the numbers in each intervention group (compared with total randomized participants), reasons for attrition/exclusions where reported, and any re-inclusions in analyses performed by the review authors.	Attrition bias due to amount, nature or handling of incomplete outcome data.
Reporting bias		
Selective reporting	State how the possibility of selective outcome reporting was examined by the review authors, and what was found.	Reporting bias due to selective outcome reporting.
Other bias		
Other sources of bias	State any important concerns about bias not addressed in the other domains in the tool.	Bias due to problems not covered elsewhere in the table.

Domain	Support for judgement	Review authors' judgement
	If particular questions/entries were pre-specified in the review's protocol, responses should be provided for each question/entry.	

2 – Criteria for judging risk of bias in the 'Risk of bias' tool

RANDOM SEQUENCE GENERATION **Selection bias (biased allocation to interventions) due to inadequate generation of a randomised sequence.**	
Criteria for a judgement of 'Low risk' of bias.	The investigators describe a random component in the sequence generation process such as: Referring to a random number table; Using a computer random number generator; Coin tossing; Shuffling cards or envelopes; Throwing dice; Drawing of lots; Minimization*. *Minimization may be implemented without a random element, and this is considered to be equivalent to being random.
Criteria for the judgement of 'High risk' of bias.	The investigators describe a non-random component in the sequence generation process. Usually, the description would involve some systematic, non-random approach, for example: Sequence generated by odd or even date of birth; Sequence generated by some rule based on date (or day) of admission; Sequence generated by some rule based on hospital or clinic record number. Other non-random approaches happen much less frequently than the systematic approaches mentioned above and tend to be obvious. They usually involve judgement or some method of non-random categorization of participants, for example: Allocation by judgement of the clinician; Allocation by preference of the participant; Allocation based on the results of a laboratory test or a series of tests; Allocation by availability of the intervention.
Criteria for the judgement of 'Unclear risk' of bias.	Insufficient information about the sequence generation process to permit judgement of 'Low risk' or 'High risk'.
ALLOCATION CONCEALMENT **Selection bias (biased allocation to interventions) due to inadequate concealment of allocations prior to assignment.**	
Criteria for a judgement of 'Low risk' of bias.	Participants and investigators enrolling participants could not foresee assignment because one of the following, or an equivalent method, was used to conceal allocation:

	Central allocation (including telephone, web-based and pharmacy-controlled randomization); Sequentially numbered drug containers of identical appearance; Sequentially numbered, opaque, sealed envelopes.
Criteria for the judgement of 'High risk' of bias.	Participants or investigators enrolling participants could possibly foresee assignments and thus introduce selection bias, such as allocation based on: Using an open random allocation schedule (e.g. a list of random numbers); Assignment envelopes were used without appropriate safeguards (e.g. if envelopes were unsealed or nonopaque or not sequentially numbered); Alternation or rotation; Date of birth; Case record number; Any other explicitly unconcealed procedure.
Criteria for the judgement of 'Unclear risk' of bias.	Insufficient information to permit judgement of 'Low risk' or 'High risk'. This is usually the case if the method of concealment is not described or not described in sufficient detail to allow a definite judgement – for example if the use of assignment envelopes is described, but it remains unclear whether envelopes were sequentially numbered, opaque and sealed.
BLINDING OF PARTICIPANTS AND PERSONNEL **Performance bias due to knowledge of the allocated interventions by participants and personnel during the study.**	
Criteria for a judgement of 'Low risk' of bias.	Any one of the following: No blinding or incomplete blinding, but the review authors judge that the outcome is not likely to be influenced by lack of blinding; Blinding of participants and key study personnel ensured, and unlikely that the blinding could have been broken.
Criteria for the judgement of 'High risk' of bias.	Any one of the following: No blinding or incomplete blinding, and the outcome is likely to be influenced by lack of blinding; Blinding of key study participants and personnel attempted, but likely that the blinding could have been broken, and the outcome is likely to be influenced by lack of blinding.
Criteria for the judgement of 'Unclear risk' of bias.	Any one of the following: Insufficient information to permit judgement of 'Low risk' or 'High risk'; The study did not address this outcome.
BLINDING OF OUTCOME ASSESSMENT **Detection bias due to knowledge of the allocated interventions by outcome assessors.**	
Criteria for a judgement of 'Low risk' of bias.	Any one of the following: No blinding of outcome assessment, but the review authors judge that the outcome measurement is not likely to be influenced by lack of blinding; Blinding of outcome assessment ensured, and unlikely that the blinding could have been broken.
Criteria for the judgement of 'High risk' of bias.	Any one of the following: No blinding of outcome assessment, and the outcome measurement is likely to be influenced by lack of blinding; Blinding of outcome assessment, but likely that the blinding could

	have been broken, and the outcome measurement is likely to be influenced by lack of blinding.
Criteria for the judgement of 'Unclear risk' of bias.	Any one of the following: Insufficient information to permit judgement of 'Low risk' or 'High risk'; The study did not address this outcome.
INCOMPLETE OUTCOME DATA **Attrition bias due to amount, nature or handling of incomplete outcome data.**	
Criteria for a judgement of 'Low risk' of bias.	Any one of the following: No missing outcome data; Reasons for missing outcome data unlikely to be related to true outcome (for survival data, censoring unlikely to be introducing bias); Missing outcome data balanced in numbers across intervention groups, with similar reasons for missing data across groups; For dichotomous outcome data, the proportion of missing outcomes compared with observed event risk not enough to have a clinically relevant impact on the intervention effect estimate; For continuous outcome data, plausible effect size (difference in means or standardized difference in means) among missing outcomes not enough to have a clinically relevant impact on observed effect size; Missing data have been imputed using appropriate methods.
Criteria for the judgement of 'High risk' of bias.	Any one of the following: Reason for missing outcome data likely to be related to true outcome, with either imbalance in numbers or reasons for missing data across intervention groups; For dichotomous outcome data, the proportion of missing outcomes compared with observed event risk enough to induce clinically relevant bias in intervention effect estimate; For continuous outcome data, plausible effect size (difference in means or standardized difference in means) among missing outcomes enough to induce clinically relevant bias in observed effect size; 'As-treated' analysis done with substantial departure of the intervention received from that assigned at randomization; Potentially inappropriate application of simple imputation.
Criteria for the judgement of 'Unclear risk' of bias.	Any one of the following: Insufficient reporting of attrition/exclusions to permit judgement of 'Low risk' or 'High risk' (e.g. number randomized not stated, no reasons for missing data provided); The study did not address this outcome.
SELECTIVE REPORTING **Reporting bias due to selective outcome reporting.**	
Criteria for a judgement of 'Low risk' of bias.	Any of the following: The study protocol is available and all of the study's pre-specified (primary and secondary) outcomes that are of interest in the review have been reported in the pre-specified way; The study protocol is not available but it is clear that the published reports include all expected outcomes, including those that were pre-specified (convincing text of this nature may be uncommon).
Criteria for the judgement of 'High risk' of bias.	Any one of the following: Not all of the study's pre-specified primary outcomes have been reported;

	One or more primary outcomes is reported using measurements, analysis methods or subsets of the data (e.g. subscales) that were not pre-specified; One or more reported primary outcomes were not pre-specified (unless clear justification for their reporting is provided, such as an unexpected adverse effect); One or more outcomes of interest in the review are reported incompletely so that they cannot be entered in a meta-analysis; The study report fails to include results for a key outcome that would be expected to have been reported for such a study.
Criteria for the judgement of 'Unclear risk' of bias.	Insufficient information to permit judgement of 'Low risk' or 'High risk'. It is likely that the majority of studies will fall into this category.
OTHER BIAS **Bias due to problems not covered elsewhere in the table.**	
Criteria for a judgement of 'Low risk' of bias.	The study appears to be free of other sources of bias.
Criteria for the judgement of 'High risk' of bias.	There is at least one important risk of bias. For example, the study: Had a potential source of bias related to the specific study design used; or Has been claimed to have been fraudulent; or Had some other problem.
Criteria for the judgement of 'Unclear risk' of bias.	There may be a risk of bias, but there is either: Insufficient information to assess whether an important risk of bias exists; or Insufficient rationale or evidence that an identified problem will introduce bias.

Thresholds for Converting the Cochrane Risk of Bias Tool to AHRQ Standards (Good, Fair, and Poor)

Good quality: All criteria met (i.e. low for each domain)

Using the Cochrane ROB tool, it is possible for a criterion to be met even when the element was technically not part of the method. For instance, a judgment that knowledge of the allocated interventions was adequately prevented can be made even if the study was not blinded, if EPC team members judge that the outcome and the outcome measurement are not likely to be influenced by lack of blinding.

Fair quality: One criterion not met (i.e. high risk of bias for one domain) or two criteria unclear, and the assessment that this was **unlikely** to have biased the outcome, and there is no known important limitation that could invalidate the results

Poor quality: One criterion not met (i.e. high risk of bias for one domain) or two criteria unclear, and the assessment that this was **likely** to have biased the outcome, and there are important limitations that could invalidate the results

Poor quality: Two or more criteria listed as high or unclear risk of bias