Is there a relationship between eating disorder psychopathology, self-criticism and an individual's capacity to be self-compassionate?

Meila Roy

Doctorate in Clinical Psychology

University of East Anglia
School of Medicine

July 2010

Acknowledgements

Although there is only room for one name on the spine of this document it's planning and execution involved the efforts of many people I am grateful to. I would like to thank Sian Coker and Malcolm Adams for their collective wisdom and careful guidance, Louise Beare, Corinna Hackmann and Esmé Windell for keeping me smiling and safely grounded, Tony Roy, Mary Roy and Tarina Roy for their unending faith and limitless support and lastly Frida, for keeping me company.

List of tables and figures

Abstract

Eating disorders represent a significant mental health problem with broad consequences for the lives of suffers. Outcome studies report modest recovery rates, with authors seeking to identify additional maintaining factors to inform more effective interventions. The inability to direct feelings of compassion towards the self has been identified as a potential factor influencing mental health problems. To date the capacity for self-compassion has not been investigated in relation to eating disorder psychopathology.

Aims and objectives. The current research represents a preliminary investigation of the relationship between self-compassion and eating disorder psychopathology. The aim was to explore and consider the associations between self-compassion, self-criticism, clinical perfectionism and eating disorder psychopathology.

Method. The study adopted a quantitative observational design in which data were collected using five self-report questionnaires. Participants completed the scales measuring self-compassion, self-criticism, mood, clinical perfectionism and eating disorder psychopathology, via a secure website. A total of 176 adults affiliated to the University of East Anglia were recruited to take part in the study.

Results. Within the current study significant relationships were identified between all research variables. Negative associations between self-compassion, clinical perfectionism and eating disorder psychopathology were observed. A direct relationship between self-compassion and eating disorder psychopathology was not found and it appeared that mood better explained the observed association. Depression was found to be influential across identified relationships, but could not be

used to explain the observed associations. Both self-criticism and self-compassion were found to predict unique variation in clinical perfectionism.

Conclusions. The current study represents the first to explore self-compassion in relation to eating disorder psychopathology. The findings indicate that the relationship between these variables are complex and may not be direct. The observed associations with clinical perfectionism suggest that both self-compassion and self-criticism represent potential maintaining factors. This may be of particular relevance in eating disorders where perfectionism serves to maintain the core psychopathology. A maintenance model is proposed to consider how the findings may relate theoretically to current literature. The potential clinical implications are discussed and proposals for further research outlined.

Chapter One

Introduction

1.1 Overview

Eating disorders represent a significant problem with wide ranging consequences for sufferers (Berkman, Lohr & Bulik, 2007; Hoek, 2006; Klump, Bulik, Kaye, Treasure & Tyson, 2009). To date the available treatments for eating disorders have modest outcomes (Berkman et al., 2007; Keel, Dover, Franko, Jackson & Herzog, 2005). There is a need for greater understanding of eating disorders and the processes maintaining them.

Neff (2003a; Neff, 2003b) has suggested that the ability to direct compassion towards the self may promote psychological well being. It seems that those who meet personal failure and disappointment with self-criticism are at greater risk of psychopathology than those able to direct warmth towards the self and achieve self-reassurance (Gilbert, Baldwin, Irons, Baccus & Palmer, 2006; Gilbert, Clarke, Hempel, Miles & Irons, 2004; Leary, Tate, Adams, Allen & Hancock, 2007). Previous research has identified self-criticism as a consistent feature across mental health difficulties (Gilbert & Irons, 2004), with prominent authors highlighting its relevance as a maintaining factor in eating disorders (Fairburn, Cooper & Shafran, 2003).

1.1.2 Structure of the literature review

Research exploring self-compassion and its relevance to wider experience remains limited, but represents an area of keen interest due to its growing evidence indicating its clinical importance. To date there has been no research seeking to explore the relationship between eating disorder psychopathology and self-compassion.

The following literature review will present an introduction to eating disorders and recent theoretical attempts to understand them. The construct of self-criticism will be discussed in relation to mental health, before the concept of self-compassion is introduced and current literature exploring it reviewed. Attempts will be made to draw theoretical links between the bodies of research before the current study is proposed.

1.2 Review of the literature

1.2.1 Search strategy

To identify relevant studies a two-stage search process was adopted. Initially a number of electronic databases were accessed through the UEA catalogue (Metalib, comprising of: Intute Social Sciences, PsychINFO (OCLC), Web of Science/Web of Knowledge and NCBI Pubmed). The terms *self-compassion, eating disorder psychopathology*, *compassionate mind and self-criticism,* were entered. The related terms *self-soothe, self-warmth and self-nurturance, anorexia and bulimia* were also used to ensure all relevant articles were found. Relevant search terms were identified through reference to already held articles and Gilbert's 2005 book. It became clear that there were a number of key authors who were consequently added to the search terms (*Gilbert, Leary* and *Neff*). The second stage involved a hand search of the references of papers already identified. A similar method was employed when accessing the publication lists of two relevant self-compassion websites (www.compassionatemind.co.uk; www.self-compassion.org).

1.2.2 Inclusion exclusion criteria

Articles that centred on issues that were not relevant such as *compassion towards others* or *compassion fatigue* were not included. To maximise available

research there were no restrictions placed on dates, sampling or the methodological approaches employed. The search was restricted to empirical articles in peer reviewed journals written in the English language.

The articles discussed in the following review focus on the literature exploring the current understanding of self-compassion. The aim is to demonstrate and justify the need for research exploring the relationship with eating disorder psychopathology.

Eating Disorders

1.3.1 Definition and central diagnostic features

The term eating disorders covers 3 diagnostic labels that seek to classify a range of psychological and behavioural features observed in sufferers. Common across the three is a significant preoccupation with weight and shape concerns (Diagnostic and Statistical Manual of Mental Disorders 4th edition; American Psychiatric Association, 1994). This preoccupation reflects the fact that self-worth is almost exclusively judged in terms of weight and shape (Cooper & Shafran, 2008). This translates to individuals who evaluate their worth in terms of their ability to control their dietary intake to achieve a desired weight or size (Cooper & Shafran, 2008; Fairburn et al., 2003). This dysfunctional system for evaluating self-worth is a central cognitive feature unique to eating disorders (APA, 1994; Cooper & Shafran, 2008).

1.3.1.1 Anorexia nervosa (AN)

AN is characterised by a low weight that is less than 85% of what would be expected (APA, 1994). Due to this low weight the body is less able to maintain normal processes and amenorrhea is present (APA, 1994). There is a significant fear of fatness and refusal to gain weight (APA, 1994). An individual presenting with AN may

fail to acknowledge a difficulty or problem despite their emaciated form (APA, 1994). Features of eating disorders are not static and it is common for there to be some degree of overlap with sufferers of AN engaging in compensatory behaviours such as vomiting and laxative use, which may be more commonly understood in the context of bulimia nervosa. In this way individuals with a diagnosis of AN can be categorized in terms of their presentation as restrictive or purging.

1.3.1.2 Bulimia nervosa (BN)

BN is characterised by repeated episodes of significant over eating within discrete periods of time (APA, 1994). These binge episodes are accompanied by a feeling of loss of control over eating (APA, 1994). In an attempt to compensate for episodes of binge eating individuals engage in a range of behaviours with the goal of minimizing weight gain (APA, 1994). These may involve purging such as self induced vomiting, laxative, or diuretic abuse. Alternatively individuals may employ non purging strategies such as excessive exercise or fasting (APA, 1994).

1.3.1.3 Eating disorder not otherwise specified (EDNOS)

A diagnosis of EDNOS is offered to individuals who engage in eating disorder related behaviours but fail to meet specific diagnostic criteria for AN or BN (APA, 1994). For example an individual may have fear of fatness, weight loss and a preoccupation with weight, but still have regular periods (APA, 1994). Another individual with EDNOS may engage in a binge purge cycle, but not consume enough food during each episode to constitute an objective binge (APA, 1994). A diagnosis of binge eating disorder (BED) is offered within the EDNOS category. This is used to describe individuals who engage in binges until they feel uncomfortably full and experience the associated loss of control evident in those with BN, but *do not* engage in compensatory strategies (APA, 1994). Although these individuals do not engage in

behaviours such as purging or laxative abuse, they do experience the same significant feelings of disgust and distress following an episode of binge eating (APA, 1994).

1.3.1.4 Diagnostic shift

It is clear from the DSM-IV (APA, 1994) criteria that dysfunctional schema in relation to weight and shape are similar, and that diagnostic criteria within eating disorders are largely delineated by displayed behaviour. In light of this it is not surprising that significant cross over has been observed with clients moving between diagnostic categories over time (Berkman et al., 2007; Milos, Spindler, Schnyder & Fairburn, 2005; Steinhausen & Weber, 2009). When this phenomenon was looked at specifically over a 30 month period the diagnosis of an eating disorder remained largely stable, but around 50% of participants shifted in their presentation and went on to meet criteria for a different eating disorder (Milos et al., 2005) Review articles looking at longer term outcomes for eating disorder report similar findings. Berkman et al. (2007) found that just over half of those engaging in restricting behaviours developed binge and purge symptoms during the course of their disorder (Berkman et al., 2007). Whilst 22.5% of those initially diagnosed with BN went on to meet criteria for another eating disorder (Steinhausen & Weber, 2009). Milos et al. (2005) argue that the close link between presentations and the apparent fluidity between diagnoses indicates that eating disorders may be more usefully understood as a whole, rather than distinct categories. This position has been further supported by authors who argue that the shared core psychopathology relating to the over evaluation of eating, weight, shape and their control, are fundamental drivers to eating disorders whilst associated features and behaviours are largely secondary (Fairburn, 2008; Waller, 2008)

1.3.2 Partial, sub-clinical and features of eating disorders in the general population

Features associated with eating disorders such as restrictive dieting and concerns about weight and shape are common in the wider population. Authors argue that although not indicative of an eating disorder, certain patterns of thoughts and behaviours may exist on a continuum between those observed in the general population and clinically severe symptomology (Dancyger & Garfinkle, 1995; Gleaves, Brown & Warren, 2004; Gleaves, Lowe, Green, Cororve & Williams, 2000; Lowe et al., 1996; Miller, Vaillencourt & Hanna, 2009). It is suggested that labeling clinical eating disorders as a distinct category of features unrelated to those of the wider population may be inaccurate (Gleaves et al., 2004; Lowe et al., 1996; Miller et al., 2009). Broadly speaking a review of the evidence supports a continuum approach arguing that symptoms such as dieting and bodily concerns observed at a non clinical level conform to a linear relationship with diagnostic markers for eating disorders (Gleaves et al., 2004). More recent evidence continues to support a continuum approach, but has identified inconsistencies. This has led authors to suggest that thoughts and behaviours represent separate trajectories (Miller et al., 2009). Miller et al. (2009) argue that individuals in non clinical populations who are dissatisfied with their bodies and preoccupied by weight and shape are likely to show many psychological similarities with clinically diagnosed samples. From this position statistical modeling supports a continuum approach; the inconsistencies relate to features such as bingeing and purging which have a less direct relationship with eating behaviour in non clinical samples (Miller et al., 2009). Authors argue that it may be more appropriate to define behaviours as discreet and psychological features as continuous (Miller et al., 2009). Researchers considering the nature of eating disorders and their classification continue to argue for a more generic diagnostic term that centers on core psychopathology and allows flexibility around behavioural features (Fairburn,

2008; Fairburn et al., 2003; Waller, 2008). The core psychopathology of eating disorders may lie on a continuum with lesser concerns and preoccupations common in the normal population.

1.3.3 Morbidity and the cost associated with eating disorders

Sufferers of anorexia nervosa (AN) and bulimia nervosa (BN) are thought to represent 0.3% and 1% of the population respectively (Berkman et al., 2007; Hoek, 2006). In a review of morbidity studies, Hoek and Hoeken (2003) reported that the female to male ratio in clinical eating disorders is more than 10:1. Research exploring the experience of males with eating disorders suggests that despite discrepancies in rates, there are few gender differences and presentations are clinically similar (Woodside, Garfinkel, Lin, Goering, Kaplan, Goldbloom & Kennedy, 2001).

When compared across mental health diagnoses, individuals suffering from eating disorders are thought to be more likely to experience associated physical health problems, report lower quality of life and statistically have longer admissions to psychiatric hospitals (Klump et al., 2009). Wide ranging disabilities are associated with the diagnosis, with a recent review suggesting that eating disorders have a significant impact on social functioning including work, social networks and family life (Bulik et al., 2009).

High rates of co-morbid psychiatric problems have also been reported (Hudson, Hiripi, Pope & Kessler, 2007; Klump et al., 2009). In a recent large scale US community sample over half of those meeting criteria for a diagnosis of AN, and 94% of those suffering from BN, had a co-morbid mental health problem (Hudson et al., 2007). Difficulties concurrently experienced with eating disorders ranged across mood and anxiety disorders, and included personality issues and substance misuse

(Berkman et al., 2007; Hudson et al., 2007; Klump et al., 2009). Higher life time prevalence rates for major depression and anxiety have been identified for both AN and BN (Berkman et al., 2007; Klump et al., 2009). Co-morbid problems are associated with poorer outcomes across eating disorders, with a review suggesting that recovery rates are better if individuals do not have a concurrent diagnosis of a mood or anxiety disorder (Berkman et al., 2007). Given the high reported rates of concurrent mental health problems this is likely to represent a significant factor in management.

Physical complications associated with prolonged periods of low weight and compensatory behaviours are a significant problem for the health of sufferers (Klump et al., 2009). Research reviewing patients over a 20 year period suggests that eating disorders are associated with an elevated risk of mortality (Crow et al., 2009). Those suffering from AN appear to be at greatest risk with mortality rates significantly higher than those associated with other mental health problems (Berkman et al., 2007; Klump et al., 2009). Aside from poor physical health is the increased risk of suicide. Elevated suicide rates have been observed in association with AN (Berkman et al., 2007), BN and EDNOS (Crow et al., 2009).

It is clear that eating disorders represent a significant problem with wide reaching physical, social and psychological risk to the individual. Surrounding this is the cost to carers, friends and family (Klump et al., 2009) as well as the wider financial implications for society.

1.3.4 Clinical management of eating disorders

In the UK clinical decisions about the appropriate management of physical and mental health problems are guided by The National Institute for Health and Clinical

Excellence (NICE). Their recommendations are based on a strict review of the research literature which is used to highlight evidenced based treatments available.

NICE (2004) recommend psychological interventions as the first line treatment for eating disorders. Guidance for the management of BN advocates cognitive behavioural therapy (CBT) and interpersonal psychotherapy (IPT). CBT has the strongest evidence base for treating eating disorders (NICE, 2004). A recent Cochrane review (Hay, Bacaltchuk, Sergio & Kashyap, 2009) supports the value of CBT in treating BN and more specifically highlights the efficacy of CBT BN (Fairburn, Marcus & Wilson, 1993) a form of CBT developed specifically for BN (Hay et al., 2009). Authors remain cautious about these conclusions due to the low numbers of participants in control trials (Hay et al., 2009). They highlighted the need for further research and in particular controlled trails exploring the value of alternative interventions.

For the treatment of AN, CBT and IPT are indicated along with cognitive analytic therapy (CAT) and family approaches (NICE, 2004). The scope of the guidance offered for the management of AN was restricted by the available literature. Due to the lack of robust research the evidence was sourced from expert opinions and committee reports (NICE, 2004).

There is a lack of clarity on the most effective intervention to treat EDNOS due to the paucity of research evidence available (NICE, 2004). It is suggested that clinical decisions regarding treatment should be guided by the similarity of the presentation to AN or BN (NICE, 2004). This would indicate the value of the previously mentioned psychological therapies including CBT, IPT and CAT (NICE, 2004). A specific CBT-BED intervention is recommended for those presenting with BED (NICE, 2004).

CBT appears central in the treatment of eating disorders with prominent authors pointing to the commonality of its use for clients presenting with BN and AN (Wilson, Grilo & Vitousek, 2007).

1.3.5 Outcomes for eating disorders

In light of research indicating the far reaching costs of eating disorders it is worrying to find that in a systematic review of the literature the outcomes for eating disorders were found to be poor (Berkman et al., 2007). The definition of positive outcomes and in particular recovery, varied over studies with some relying solely on reported rates of behaviour. This emphasis is problematic as it provides no information on the status of underlying beliefs and cognitive sets central to eating disorder psychopathology. The studies reported here are those that looked at diagnosis, which required details of psychological and behavioural symptoms. The aim was to provide a more accurate sense of outcome rates for eating disorders. Berkman et al. (2007) reviewed literature between 1980s and 2005. The articles reviewed sampled participants across cultures and reported vast variation in recovery rates 5- 15 years after initial diagnosis (Berkman et al., 2007). The percentage of participants who still had a diagnosis of an eating disorder was between 1- 24% for AN, 2- 25% for BN and 2- 36% for EDNOS.

Findings from outcome studies published since the review add further support to the data reported by Berkman et al. (2007). Fichter, Quadflieg and Hedlund (2006) conducted a review of AN sufferers after 12 years. They reported that 19% still met diagnostic criteria for AN, whilst a further 28% reported symptoms consistent with another eating disorder (Fichter et al., 2006). In a 2009 review focusing specifically on outcomes for BN, Steinhausen & Weber report rates that remain consistent with

earlier findings. Over 27 studies, 23% of participants followed a chronic course for BN and remained symptomatic.

Whilst government bodies are extolling the value of CBT for the management of eating disorders, studies reporting treatment outcomes suggest some caution is needed. Fairburn et al. (2003) are positive about the potential of CBT for the management of eating disorders, but remain mindful that for CBT- BN only 40- 50% of patients achieve recovery and no longer meet diagnostic criteria. It seems that CBT does not necessarily equate to long term recovery within eating disorders with relapse rates of 22- 51% reported in a review of the literature (Keel et al., 2005).

It is worth noting that the methods of assessing outcome varied across studies. This lack of consistency suggests that the results should be viewed with caution. It is evident however that those suffering from eating disorders may remain troubled by their difficulties and associated problems in the long term.

1.3.6 The search for better outcomes: A transdiagnostic approach

It is clear that current attempts to treat eating disorders produce mixed results with a high proportion of people remaining symptomatic (Fairburn et al., 2003; Keel et al., 2005). The high levels of observed co-morbid problems and diagnostic shift across eating disorders may contribute to complex presentations. As discussed above, CBT remains the most researched treatment approach and its application to the management of eating disorders is now recommended at a national level (NICE, 2004). Authors seeking to enhance the efficacy of current treatment have looked to explore the impact of additional factors serving to maintain the core psychopathology (Fairburn, 2008).

CBT models for both AN (Fairburn, Shafran & Cooper, 1999) and BN (Fairburn et al., 1993) point to the over evaluation of weight and shape as the central psychopathology motivating and maintaining the observed attempts to control dietary intake and size. Across eating disorders adherence to strict dietary rules provides the primary evidence for self-worth (Fairburn et al., 1993; Fairburn et al., 1999). For individuals with AN, Fairburn et al. (1999) highlight the attainment of control as central to self-worth. The ability to restrict intake brings a sense of control and associated feelings of success. This perpetuates the need for ever increasing restriction to gain the same sense of achievement and control. Alongside this is an associated fear of loss of control seen in fear of fatness. Similarly the disorder is maintained by the growing pressure for further dietary restraint to increase the distance from the feared outcome of weight gain. Through multiple mechanisms self-worth is protected and maintained through control (Fairburn et al., 1999).

The dietary rules observed in BN are valued in the same way with a similar emphasis on the ability to achieve control (Fairburn et al., 1993). Fairburn et al. (1993) suggest that due to the value of adherence to these rules, even small dietary rule breaks have significant consequences. Rule breaks often result in a strong sense of failure reinforcing beliefs about their lack of control over weight and shape. This emotional sense of failure often triggers a binge, which provides yet further evidence of the perceived inability to control their diet and size. The compensatory behaviours observed after bingeing stem from this strong desire to control weight and shape. The belief in the success of these approaches is often mistaken, but serves to increase the likelihood of further binges. Following a binge, feelings about the self are often harshly self-critical. The resolve to adhere to the original rules is affirmed as the only way to achieve control over weight and shape and achieve positive self-worth; completing the full maintenance cycle (Fairburn et al., 1993).

It is clear from the brief accounts of both CBT models that there are common features that serve to maintain both disorders. The transdiagnotic model developed by Fairburn et al. (2003) views disordered eating as a single diagnosis based around the shared dysfunctional system for evaluating the self. See Figure 1 for a diagrammatic representation of the model. Alongside the mechanisms described above the transdiagnostic model identifies further factors that may be relevant to understanding the maintenance of eating disorders (Fairburn et al., 2003). The authors suggest that the contribution of factors such as interpersonal difficulties, mood intolerance, low self-esteem and clinical perfectionism may be important to understanding the low rates of change following treatment (Fairburn et al., 2003). The associated contributing features will be discussed in greater depth below.

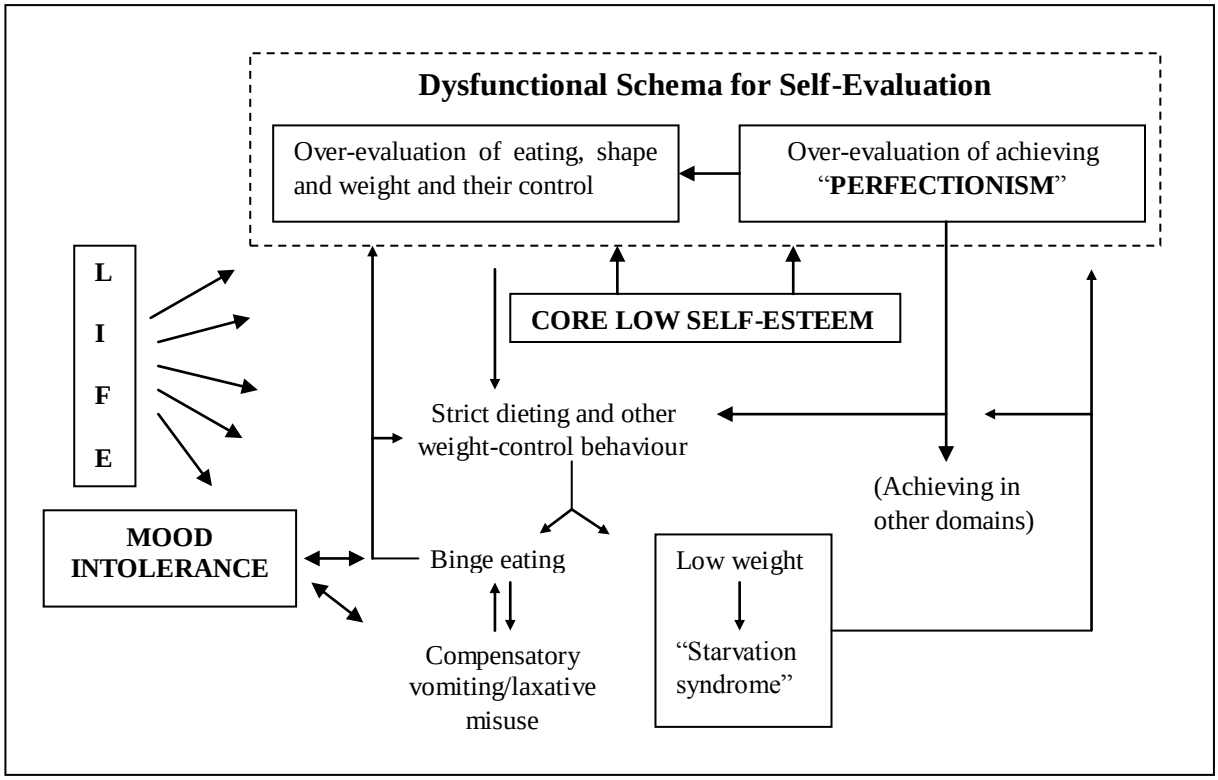


Figure 1. Transdiagnostic model of eating disorders Fairburn et al. (2003*).*

1.3.6.1 Mood intolerance

Mood intolerance has been noted as problematic in sufferers of eating disorders (Cooper & Shafran, 2008). The role of behaviours such as bingeing, purging and excessive exercise in modulating mood has led Fairburn (2008) to point to its value as a coping strategy for those unable to tolerate extreme emotions. This serves as an additional mechanism maintaining extreme weight control behaviour in BN (Fairburn et al., 2003).

1.3.6.2 Interpersonal difficulties

Interpersonal problems are observed across AN and BN (Fairburn et al., 2003) The authors suggest that the interpersonal context, such as environments in which concerns about weight and shape are more prevalent, may serve to intensify preoccupation with control of food intake and size. Interpersonal conflict is often cited as a trigger for binges serving to feed into the maintaining cycle (Fairburn, et al., 2003).

The rationale for addressing issues of mood intolerance and interpersonal difficulties views them as factors influencing the maintenance of eating behaviours. The additional factors highlighted in the model relate more closely to the dysfunctional system of self-evaluation common across the disorders

1.3.6.3 Low self-esteem

The tendency to adopt a negative view of the self seems likely in the face of failure to adhere to impossibly rigid dietary rules, however it has been noted that for some the self-critical and negative judgments directed towards the self are not limited to weight and shape concerns (Fairburn et al., 2003). A pervasive negative view of the self is likely to increase determination to achieve success in any area that is valued by

the individual. The value placed on the control of weight and shape may translate to an increased resolve in those with low self-esteem that would serve to maintain the eating disorder. Core low self-esteem is thought to be reflected in biased processing that acts to magnify and generalize failures. A rule break would therefore be met with significant feelings of failure and harsh self-criticism confirming the underlying negative view of the self and reinforcing resolve to adhere to dietary rules (Fairburn et al., 2003).

1.3.6.4 Perfectionism

Perfectionism is a system for evaluating the self based on the determined pursuit of self imposed goals regardless of negative consequences (Shafran et al., 2002). Where eating disorder psychopathology is present perfectionism is translated into the need to achieve strict control over weight and shape (Shafran et al., 2002) The transdiagnostic model proposes that in this way perfectionism may serve to directly maintain the dysfunctional system for self evaluation unique to eating disorders (Fairburn et al., 2003). Across eating disorders control over weight and shape is highly valued and is often pursued in the face of physical consequences and poor health related to weight loss behaviours (Cooper & Shafran, 2008). Adherence to the pursuit of weight related goals is highly valued. Associated rule breaks are met with harsh self-criticism that confirm worries about a lack of control and maintains the need to strive. Fear of weight gain is a central feature of AN with a significant fear of losing control over eating observed in BN. Fear of failure confirms the value of achieving control over weight and shape serving to maintain beliefs and engagement in associated behaviours (Fairburn et al., 2003).

1.3.6.5 Application of the transdiagnostic model

In line with this model Fairburn et al. (2003) have proposed an enhanced CBT treatment (CBT-E). The intention was to develop an approach that could be applied regardless of disorder with the option of directly addressing the additional maintaining factors (Fairburn, 2008). The approach falls in line with the CBT model, but seeks to treat the specifics of psychopathology over diagnosis (Fairburn, 2008). Where appropriate, cases receive CBT-E aimed at the relevant components of, interpersonal difficulties, low self-esteem and perfectionism (Fairburn, 2008; Fairburn et al., 2008). Mood intolerance has become a component of the focused treatment regardless of the other features adding to the complexity of the presentation (Fairburn, 2008). The specific nature of the CBT-E intervention is dependent on the individuals needs in these 3 additional domains.

Results from an initial randomized control trial were positive, but are limited by the small sample size recruited (Fairburn et al., 2009). The randomized control trial design involved participants being randomly allocated to a wait list control group alongside those receiving the enhanced CBT interventions. To further reduce potential sources of bias, treatment outcomes were assessed by researchers blind to the research groups. The measures taken to minimize sources of bias in the design allow robust conclusions to be drawn regarding the effectiveness of the intervention. In light of this, the early outcomes for CBT-E provide a strong rationale for further studies with clinical populations. Participants were assessed for the presence and severity of mood intolerance, interpersonal difficulties, low self-esteem and perfectionism by psychological therapists. Those with two of the additional psychopathological factors were deemed complex. Treatment outcomes suggest that this complex group did less well in CBT focused on eating disorder psychopathology alone. Greater improvements were observed in complex participants who had received the broader form of treatment CBT-E targeting the relevant additional factors. The current study focused

on eating disorder psychopathology as the outcome. This is valuable given the paucity of research, but provides little information about the key mechanisms for change in the experimental groups. These early findings for a treatment based on the transdiagnostic model are promising. Further studies including more detailed assessment measures are needed to understand the components most relevant to change.

1.3.7 Summary of introduction to eating disorder

It is clear that eating disorders represent a significant mental health problem with wide ranging influences on psychological, physical and social functioning (Berkman et al., 2007; Bulik et al., 2009). At present the best evidenced treatment for eating disorders is CBT (NICE, 2004). Despite research supporting its effectiveness, outcome studies suggest that recover rates remain low (Fairburn et al., 2003; Keel et al., 2005).

Recent attempts to enhance the effectiveness of CBT have adopted a transdiagnostic perspective that views the dysfunctional system for evaluation of self-worth as common across presentations (Fairburn et al., 2003). The model has highlighted additional factors responsible for maintaining the disorder and points to the need to recognise the influence of these processes in treatment (Fairburn, 2008; Fairburn et al., 2003). To date one study has researched the translation of the transdiagnostic model into a treatment approach (Fairburn, et al., 2009). Positive early findings have been demonstrated, but more research is needed. The findings demonstrate the potential value of addressing and targeting specific maintaining factors in increasing the effectiveness of interventions.

1.4 Eating disorders and self-criticism

Self-criticism has been highlighted as a feature present across eating disorders and has received some attention as a potential maintaining factor (Cooper, 2005; Fairburn et al., 2003; Lehman & Rodin, 1989; Steiger, Goldstein, Mongrain & Van der Feen, 1990). Steiger et al. (1990) suggest that high levels of self-criticism should be expected given the over reliance on the limited sources for self evaluation. Cognitive theory suggests that at the core of eating disorders is a dysfunctional system for evaluating weight and shape (Cooper & Shafran, 2008; Fairburn et al., 2003; Fairburn et al., 1993; Fairburn et al., 1998). This core psychopathology translates into strict rules to control weight and shape, when these are broken the individual engages in harsh self judgments and criticism which serves to confirm negative self beliefs and reinforce the need for stricter adherence to rules (Fairburn et al., 2003). Fairburn et al. (2003) propose that a similar maintaining function for self-criticism plays out in the presence of perfectionism, when it is the ability to adhere to the rules that is highly valued. When a rule is broken individuals engage in verbal self-attacking that again confirms negative beliefs about self and reinforces the value of rule adherence (Fairburn et al., 2003). Although self-critical responses are touched upon within the transdiagnostic theory and wider literature (Fairburn, 2008; Fairburn et al., 2008; Fairburn et al., 2003), their relevance to eating disorders has received limited attention within proposed models. A diagrammatic representation of the transdiagnostic model, with the inclusion of self-criticism as detailed by Fairburn et al. (2003), is presented in Figure 2.

Outside of the eating disorder literature the relevance of self-criticism in mental health problems has received more attention. In light of this, the focus will now widen to acknowledge the concept of self-criticism in other populations.

1.4.1 Self-criticism

Blatt (2004) has defined self-critical individuals as those who have difficulty gaining satisfaction from personal performance, and tend to engage in harsh self-evaluation, both of which may be perpetuated by a characteristic fear of failure. Self-criticism is the product of this harsh self-evaluation and a failure to meet perceived standards (Blatt, 2004). These negative automatic thoughts characterized by criticism have been researched almost exclusively in the field of depression (Dunkley & Grilo 2007).

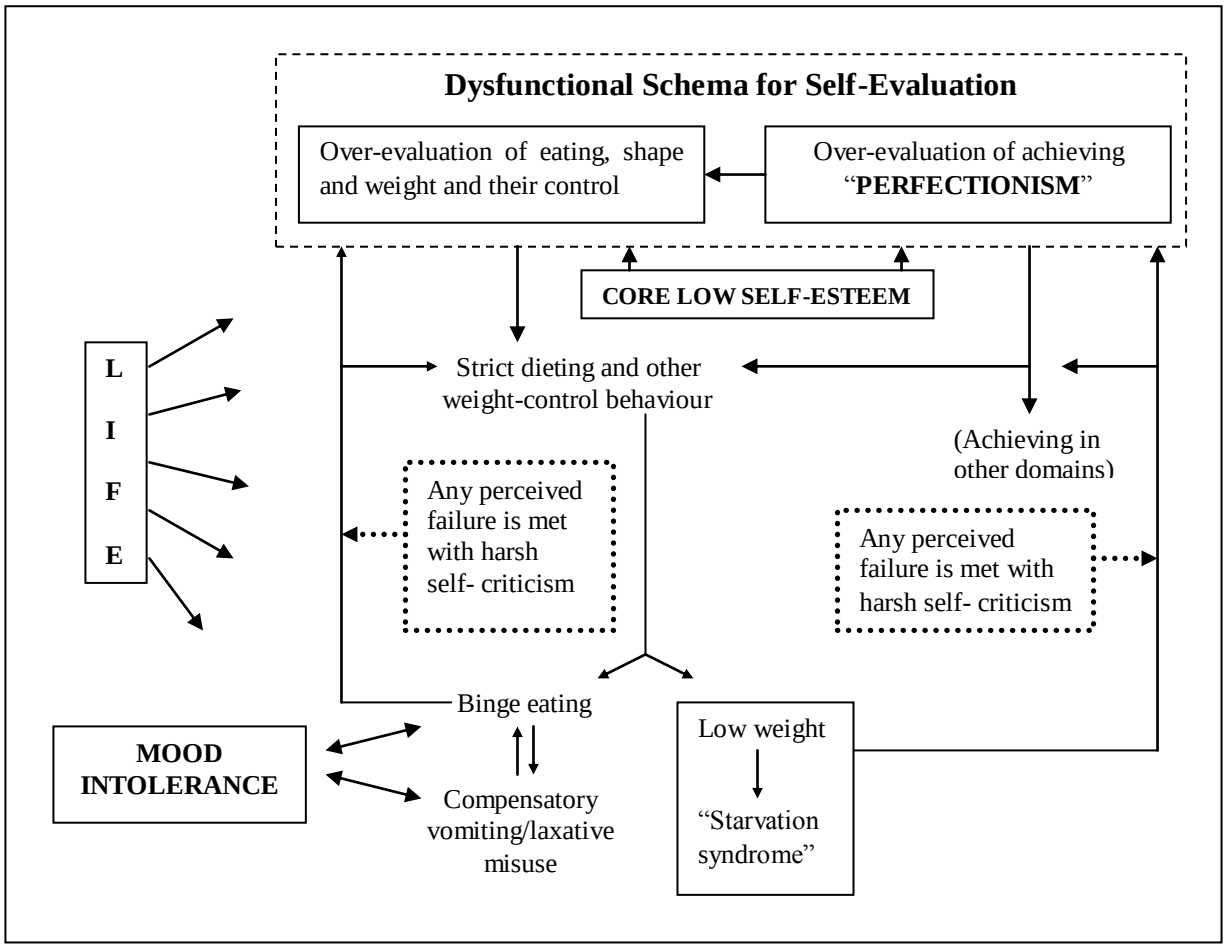


Figure 2. The transdiagnostic model reproduced with the addition of self-criticism in dashed boxes.

Within this body of research self-criticism has been highlighted as a risk factor for the development of depression (Coyne & Whiffen 1995), with a longitudinal study suggesting that its presence in childhood relates to life time vulnerability (Zuroff,

Koestner & Powers, 1994). Gilbert (2005) suggests that the negative core beliefs evident in depression are confirmed by self critical responses to the self, strengthening belief in them and further biasing perception. The cycle this creates plays a role in maintaining or exacerbating episodes of low mood (Gilbert, 2005; Gilbert & Proctor, 2006). The maintaining cycle described by Gilbert (2005) draws clear parallels with those described by Fairburn et al. (2003; see Figure 2 for reproduction of the transdiagnostic model with the inclusion of self-criticism). The role self-criticism appears to play in the maintenance of negative affect and broader psychopathology has indicated its potential importance as a focus for treatment. Research exploring treatment outcome for depression concludes that when present, self-criticism represents a barrier to effective psychological treatment (Rector, Bagby, Segal, Joffe & Levitt, 2000). Although the majority of attention has related to depression, self-criticism has been cited as a common feature across mental health difficulties including mood disorders, social anxiety, substance misuse, malevolent voices and personality problems (Cox et al., 2002; Gilbert & Irons, 2004). This is echoed in eating disorders in which it has been identified as a feature of presentations (Cooper, 2005; Steiger et al., 1990)

1.4.2 Self-criticism and perfectionism

Self-criticism is thought to play a fundamental role in clinical perfectionism, which has a significant impact on the psychological functioning and well being of suffers (Shafran et al., 2002). Perfectionism is defined as the determined pursuit of self imposed standards (Shafran et al., 2002). It is self-criticism in the face of failure to adhere to self imposed rules which is thought to make perfectionism a pathological problem (Dunkley, Blankstein, Masheb & Gilo, 2006a; Frost, Marten, Lahart & Rosenblate, 1990). Holding high standards and evaluating performance in reasonable terms is thought to be healthy, it is when appraisals are dominated by negative judgement and associated self belittlement that they become problematic (Alden,

Ryder & Mellings, 2002). Individuals with high standards that are pursued in the face of harsh self-evaluation are likely to be driven and motivated to problem solve. Conversely those who berate themselves are likely to blame their personal characteristics resulting in feelings of helplessness and lower affect (Dunkley, Zuroff & Blankstein, 2003).

In a group of students, self-criticism was found to moderate associated negative affect in perfectionism (Dunkley et al., 2003). Students completed diary measures over a weekly period to detail events, perceived hassles, associated stress and coping responses. Those with perfectionism associated with self-criticism were more likely to perceive an experience as stressful and doubt their performance. In response to this, the self critical perfectionists tended to engage in maladaptive coping strategies such as avoidance and self blame. These responses were associated with an increase in negative affect suggesting that the original distress caused by the triggering event was likely to be fostered by such coping responses (Dunkley, et al., 2003). The study suggests that self-criticism in perfectionism was associated with greater sensitivity to perceived failure, poorer coping and low affect. A later study conducted by Dunkley, Zuroff and Blankstein (2006b) replicated these findings when investigating the impact of perfectionism and self-criticism on maladjustment. In a similar student sample components of perfectionism were compared and the impact on aspects of maladjustment, such as coping, assessed. Self-criticism was the strongest predictor of maladjustment being associated with lower positive affect, higher negative affect and an avoidant coping style. Authors supported the particular importance of self-criticism in understanding the negative influence of clinical perfectionism (Dunkley et al., 2006b). These findings add support to the proposition that self-criticism is the central pathological component of perfectionism (Dunkley et al., 2006b).

1.4.3 Self-criticism, perfectionism and eating disorders

Self-criticism is thought to have a central role in the pathological expression and maintenance of perfectionism (Dunkley et al., 2006a; Dunkley et al., 2006b; Frost et al., 1990; Shafran, et al., 2002). In the presence of perfectionism self evaluation is dependent on success in the valued domain, but the drive to achieve is strongly influenced by a fear of failing (Shafran, et al., 20002). In the case of eating disorders this would translate into the over valued domains of weight and shape and their control. Clinical and research evidence suggests that perfectionism is a common feature across eating disorders (Bardone-Cone et al., 2007; Bulik et al., 2003; Fairburn, et al., 2008) and that its existence may predate the advent of the disorder (Bardon-Cone et al., 2007; Fairburn, Cooper, Doll & Welch, 1999; Fairburn, et al., 2008). In a recent review of this body of research, authors concluded that perfectionism related to poorer treatment outcomes and may remain present following recovery of the eating disorder (Bardone-Cone et al., 2007).

Current understanding of perfectionism within the transdiagnostic model suggests that both perfectionism and eating disorders represent a dysfunctional system for self evaluation maintained by rule breaks and associated self-criticism (see Figure 2 for reproduction of the transdiagnostic model with the inclusion of self-criticism; Fairburn, et al., 2003). Despite the potential relevance of self-criticism only a limited body of research has explored its impact in eating disorders. This research has seen an exclusive interest in the relevance to perfectionism within eating disorders.

In a clinical sample of 236 individuals diagnosed with BED, self-criticism was found to make a substantial contribution to the relationship between eating disorder symptoms and perfectionism (Dunkley et al., 2006a). Employing multiple self-report

measures self-criticism was found to be an important predictor for both BED symptoms and depression in the sample. Authors concluded that self-criticism was of central importance in understanding the relationship between perfectionism and eating disorders. Dunkley and Grilo (2007) explored this in more depth in a further study conducted with a similar clinical sample of participants seeking treatment for BED. They concluded that the self-critical element of perfectionism was uniquely related to over evaluation of weight and shape. This suggests that within clinical perfectionism, self-criticism may be an important predictor of the core eating disorder psychopathology as defined by Fairburn et al. (2003) Self-criticism remained a unique predictor in the face of depression and self-esteem (Dunkley & Grilo, 2007). The results indicated that self-criticism was related to, but sufficiently different from both constructs to warrant consideration as a relevant factor (Dunkley & Grilo, 2007). Both of the studies reliance on correlational methods means that assumptions cannot be made about the direction of observed relationships. Authors suggest that when perfectionism is thought to be a barrier to treatment it may be pertinent to address levels of self-criticism (Dunkley, et al., 2006a). This research focused on individuals with BED however, the shared core psychopathology of eating disorders indicates its potential value in understanding BN, AN and EDNOS (Dunkley & Grilo, 2007; Dunkley, et al., 2006a). Preliminary research indicates the potential role of self-criticism in understanding the maintaining role of perfectionism in eating disorders. To date this research is limited and there is a clear need for further investigation to better understand the nature of self-criticism in this relationship. Given the potential role as a maintenance factor further research could inform more effective interventions in the future.

Self-criticism has been identified as playing a potential role in the maintenance of psychopathology including perfectionism (eg. Dunkley et al., 2003; Dunkley et al.,

2006a) and eating disorders (Fairburn et al., 2003). In the following section recent theoretical perspectives on the role of self-criticism in the development and expression of psychopathology will be introduced. To date these developments have not been applied to eating disorders so concepts will be discussed in light of investigation with other populations.

1.4.4 Developments in understanding self-criticism

The past ten years have seen a shift in attention towards the nature of self-criticism given the observed commonality across psychopathology. The mechanisms involved in the maintenance of mental health problems have been a particular focus with the role of self-criticism in fostering negative affect receiving attention. Gilbert and colleagues have also suggested that the observed self-critical patterns imbued with hostility and harsh judgment may reflect an inability to direct kindness, warmth and positive regard towards the self (Gilbert, Baldwin, Irons, Baccus & Palmer, 2006; Gilbert, Clarke, Kempel, Miles & Irons, 2004).

When individuals face perceived adversity or failure with self-criticism they are likely to foster negative emotions (Gilbert, 2009; Gilbert et al., 2004). This can become a self perpetuating cycle that maintains negative affect and may leave the individual more vulnerable to developing psychopathology (Gilbert, 2005; Gilbert, 2009; Gilbert et al., 2004). Whelton & Greenberg (2005) suggest that in the case of self-criticism the individual is actually creating an internal stressor in addition to external source of distress. Evidence suggests that self critical individuals experience a high degree of contempt for themselves and are less able to be emotionally resilient in the face of their own self-criticism (Whelton & Greenberg, 2005). These findings support Gilbert's position suggesting that self critical individuals experience a greater degree of negative affect in response to their own self critical voices when compared to controls (Whelton & Greenberg, 2005).

Gilbert has theorized that self-criticism in its self represents a maintenance factor for psychopathology, but that further to this, the tendency to be self critical may reflect of an inability to psychological soothe the self (Gilbert, 2010). He suggests a lack of capacity to respond to the self kindly may represent an additional important vulnerability factor for mental health problems (Gilbert, 2010). Those who adopt an understanding position and are able to meet failure with feelings of warmth may be able to reassure themselves (Gilbert, 2009; Gilbert et al., 2006). Reassuring the self in the face of difficulties serves to manage negative emotions and soothe them (Gilbert, 2009). Approaching negative affect from this perspective transforms it, rather than maintaining it as may be the case with self critical responses (Gilbert, 2009). In 2006 Gilbert et al. demonstrated that self-critical students were less able to generate supportive and self reassuring images. Researchers asked undergraduate students to complete two imagery exercises in which they were required to respond to a perceived failure by fostering a self-critical position, followed by a self-reassuring response to the self. When compared to non critical individuals, the critical images developed by self critical participants were rated as clearer, more powerful and harder to ignore. Self critical individuals were less able to generate positive warm alternatives that were experienced as supportive (Gilbert et al., 2006). It is argued that this lack of capacity to reassure and soothe the self may also leave self-critical individuals more vulnerable to developing psychopathology as they may have a reduced capacity to care for the self to manage difficult affect (Gilbert, 2009). In a previous study in which the principal aim was to develop a scale to determine the forms of self-criticism, Gilbert et al. (2004) found that self-reassurance represented a potential protective factor in the face of depression. As the scale was developed from clinical experience it may not accurately reflect all relevant factors. Validation of the scale was restricted to a female student sample, which further limits the potential value of the measure.

Within the undergraduate sample recruited by Gilbert et al. (2004), self-criticism and more specifically self-attacking, was found to be a predictor for rates of depression (Gilbert et al., 2004). A later study conducted by Mills, Gilbert, Bellew, McEwan and Gale (2007) evidenced similar findings employing the same scale with a further undergraduate population that included males. Authors employed a number of standardized measures to identify relationships between psychopathology including depression and paranoia and the tendency to reassure and criticize the self. The study was restricted to correlational analysis, so causation cannot be assumed. However, the findings remain valuable when considered within the context of the literature. Researchers found that participants who reported paranoid beliefs and self-criticism reported lower rates of kindness towards the self (Mills et al., 2007). In the same sample higher rates of depression were associated with less self-reassurance and higher rates of self critical relating (Mills et al., 2007). Findings suggested both self-criticism and a lack of self-reassurance were predictive of psychopathology and represented potential vulnerability factors. Gilbert (2005) suggests that this is key and that for some, self-criticism in the face of adversity reflects an inability to soothe or reassure the self, which may be of relevance to understanding the role of self-criticism in mental health problems. In particular it is theorized that an inability to reassure the self may leave an individuals vulnerable to developing psychopathology (Gilbert, 2010; Gilbert et al., 2004; Mills et al., 2007).

Researchers have taken a keen interest in this ability to direct warmth towards the self and its potential to ameliorate negative affect (Gilbert, et al., 2004; Gilbert, et al., 2006; Gilbert & Irons, 2004). The capacity to direct feelings of warmth towards the self is more commonly defined as self-compassion (Neff, 2003a). Attention has been paid to the Buddhist construct of self-compassion, which describes the inherent value of directing non-judgmental feelings towards the self in times of distress and failure (Neff, 2003a). The literature exploring this concept remains in its infancy, but has

raised interesting questions about the value of exploring self-compassion particularly in the context of mental health problems. There is a growing interest in self-compassion given the theoretical difference to opposing concepts such as self-criticism and their evidenced influence in psychopathology. Attention will now turn to current understanding of self-compassion and the argument for its potential value in the treatment of mental health problems.

1.5 Self-compassion

1.5.1 Definition

The concept of self-compassion discussed in the literature reflects that held in Buddhist cultures (Neff, 2003a). Compassion is a more familiar concept in Western societies and reflects the capacity to acknowledge the suffering of others from a position that wishes to reduce their pain (Neff, 2004). Self-compassion reflects the ability to direct these feelings inwards (Neff, 2004). Feelings of compassion for the self and others are valued as an integral part of Buddhist belief (Neff, Pisitsungkagarn & Hsieh, 2008)

Neff has presented a definition of self-compassion that describes personal reactions to experience in terms of three central components. She suggests that those with self-compassion meet personal suffering with feelings of care and kindness towards the self which are imbued with a desire to alleviate it (kindness; Neff, 2003a). Difficult situations are understood rather than berating or criticizing the self for the perceived failure (Neff, 2004). These experiences of suffering or failure are viewed as part of the shared human condition and so go un-judged (common humanity; Neff, 2003a). This avoids individuals feeling isolated or alone by recognizing that failure and associated feelings are shared as part of human experience (Neff, 2004). The individual is also able to engage with their suffering in a balanced way that avoids 'over identification' (mindful acceptance: Neff, 2003a). Adopting a mindful position in

the face of personal failure allows people to recognize their pain without becoming overwhelmed and ruled by it, therefore allowing a more balanced perspective to be adopted (Neff, 2004). A mindful approach enables the individual to engage with the negative affect rather than seeking to avoid or subvert their feelings (Neff et al., 2008).

The definition offered by Neff (2003a) recognizes the three factors as related processes in interaction. The ability to hold common humanity and the sense that self is connected and part of human kind enables kindness by allowing the recognition of the self as human and therefore fallible (Neff, 2003a). Similarly the ability to adopt a mindful and more balanced position allows the upsetting experience to be viewed within the context of the wider human community (Neff, 2003).

1.5.2 The nature of compassion towards the self

Theoretical attempts to explain the nature of compassion have looked to its potential within neurological systems regulating emotion (Gilbert, 2009; 2010). Gilbert is the prominent author is this area and defines compassion as an awareness of suffering and a genuine desire to alleviate it; a desire that comes from a place of kindness (Gilbert, 2009). When faced with adversity directing kindness towards the self may help to manage negative affect and foster calm (Gilbert, 2009). He seeks to understand the value of compassion for the self in terms of this capacity to soothe ourselves. Gilbert (2005; 2010) draws on evolutionary biology, attachment and neuropsychological ideas to understand the physiological systems that relate to our ability to be compassionate. He suggests that in the case of self-compassion, the ability to approach the self with feelings of kindness can actually switch off threat systems, by activating a soothing pathway that regulates negative affect (Gilbert, 2009; 2010).

Gilbert (2009) describes three interacting systems related to affect regulation, each with distinct goals stemming from our evolutionary needs. The threat system is predominantly concerned with protection and the achievement of safety (Gilbert 2009; 2010). Activation of this system is associated with aversive emotions such as anxiety, which motivate an appropriate escape response (Gilbert, 2010). The drive-excitement system relates more closely to the attainment of valued resources (Gilbert 2010). Stemming from the primitive need to compete for survival, Gilbert (2009; 2010) suggests that this system is driven by positive emotions such as happiness and excitement. These emotions are rewarding and so motivate behaviour which leads to the achievement of further goals (Gilbert 2010). Although motivating, this is conditional and so involves the potential for frustration or disappointment. When there is a failure to attain the goal, the threat system and associated negative emotions are thought to predominate (Gilbert 2010). The activation of the soothing system is more closely related to positive feelings of contentment and safeness (Gilbert, 2010). This is in contrast to the drive-excitement system in which reinforcing emotional states are conditional on the achievement of desired outcomes. Similarly, the safeness experienced in the context of the soothing system differs from safety seeking behaviour related to threat (Gilbert 2010). Safeness within the soothing system relates to calmness and a satisfaction with ones situation, rather than escaping or avoiding to achieve safety as motivated by aversive emotions. Recent investigation suggests that positive affect related to feeling safe and content is associated with lower rates of stress and self-criticism (Gilbert et al., 2009). This research, that involved the development of a new measure for positive affect, remains exploratory, but adds supports to the potential value of positive affect related to contentment and safety (Gilbert et al., 2009). In particular it implicates its potential value in coping. The positive affect regulating system in this case is thought to relate to the neurotransmitter oxytocin, which is associated with attachment to a caregiver, warmth and calming, and is thought to have a corresponding influence on the brain (Gilbert,

2010; 2005; Wang, 2005). Through oxytocin, the activation of the soothing system is thought to regulate or switch off the threat based system activated by the initial stressor (Wang, 2005). Gilbert's (2009) three system understanding points to the importance of balance, in which all of the components are recognized to be necessary to promote survival in evolutionary terms.. The over development or reliance on one system is likely to deeply influence individual experience, such as a high sensitivity to threats and pervasive anxiety, or the over dependence on short term achievement to experience positive affect (Gilbert, 2009). Gilbert (2009; 2010) is clear about the neurobiological nature of the processes described, but it is likely that early experiences play an important role in shaping the patterns of their use.

Authors have suggested that the strength of the soothing system to transform negative affect is determined by early parental care and the primary attachment relationship (Gilbert, 2010; Wang, 2005). It is argued that in infants the developing neural structures in the brain are sensitive to external stimulation (Wang, 2005). Pathways that are activated during early experiences are likely to become strengthened and form the dominant neural structures in later life (Gilbert, 2005). In line with attachment theory, children whose parents are responsive to their needs and consistently seek to alleviate their distress are likely to feel clamed and safe (Bowlby, 1969; Kohut, 1977; Gilbert, 2005; Gilbert & Proctor, 2006). The interaction has the effect of regulating the negative emotion for the child who feels soothed (Bowlby, 1969; Kohut, 1977; Wang, 2005). Repeated exposure to such experiences are internalized and become the blueprint for the child's own emotional regulation and developing capacity to cope with stress (Kohut, 1977; Wang, 2005).

Bowlby's (1969) theory of attachment extends this further suggesting that these early relationships are themselves internalized to form the basis for all relationship patterns. Of particular relevance here is their influence on the nature of

the relationship with the self, or the pattern of self to self relating adopted. If a child fails to receive adequate care, or experiences neglect at times of distress, they may internalize a sense that others are a threat (Gillath, Shaver & Kikulincer, 2005). If this pattern for relationships is dominant it is likely to be adopted as the basis for the self to self relationship and a tendency to be self-critical may emerge (Gillath, et al, 2005). Support for the importance of attachment was demonstrated in a study seeking to explore the impact of early relationships on the tendency to be self-reassuring or critical. Irons, Gilbert, Baldwin, Baccus and Palmer (2006) asked undergraduate students to recall their experience of parenting using a validated scale that measured parental warmth and rejection. The relationships identified suggested that parental warmth was associated with secure adult attachment and a tendency to self-reassure. Individuals who recalled memories or their parents as warm had a greater capacity to direct kindness and reassurance to the self. Conversely, insecurely attached adults were more likely to adopt a self to self relating style that was critical. Although limited by a reliance on a correlational design, the study suggested that attachment and the ability to recall parental warmth both had a potential influence on the style of self to self relating adopted in adulthood (Irons et al., 2006).

Social mentality theory contributes further to this theoretical understanding of the relationship with the self. Gilbert (2005) suggests this internalized pattern of self to self relating is experienced similarly to any other social interaction. As such self-criticism, attacking or berating can be as distressing as similar feedback received from an external other (Gilbert, 2005; Gilbert & Proctor, 2006). In this context, self-critical responses are likely to activate the threat system, elicit aversive emotions such as anxiety, and motivate behaviour associated with escape (Gilbert, 2009). Using neuroimaging techniques Longe et al., (2010) found that when asked to respond to scenarios with reassuring or critical self talk, there were differences in the areas of the brain that were active. Self-critical responses were associated with increased activity

in areas of the brain thought to be related to protection and the monitoring of error (Longe et al., 2010). Following self-reassurance, participants were more likely to show activity in areas of the brain thought to be related to emotional processing. The findings offer support to the theory that different systems are active when we respond to the self in positive and negative ways (Gilbert, 2005). Importantly this study would suggest that individuals who are self-critical may be more focused on error and self protection, whilst self-reassuring individuals may be actively engaged in regulating their emotions (Longe et al., 2010). The research is in line with the theoretical position that the capacity for self-compassion may be of particular value in coping with affect, whilst self-criticism is more closely related to threat (Gilbert, 2005).

1.5.3 Validity of the concept

In order to explore the concept of self-compassion Neff has developed a scale based on her three component definition (2003b). Initial validation identified an overarching factor for self-compassion (2003b). Preliminary investigation using the scale indicated the validity of the measure as a means of identifying Buddhist populations, who would be expected to demonstrate greater self-compassion (Neff, 2003b). Although not reliant on a student population, in this initial exploration the Buddhist sample recruited was limited to 43 (Neff, 2003b). This was later replicated in a more robust observation across cultures (Neff, Pisitsungkagarn & Hsieh, 2008). Undergraduate participants were sampled from populations in which they were likely to have been exposed to self-compassionate ideals to various degrees (Neff et al., 2008). In this sample, Thai students were found to demonstrate higher self-compassion than their Taiwanese or American peers (Neff, et al, 2008). Taiwanese students, whose culture stem from Confucian ideals that extol focusing on personal faults to achieve self improvement, demonstrated lower levels of self- compassion than their Thai and American counterparts (Neff, et al, 2008). These preliminary

findings from cross cultural student populations would suggest that the scale is able to provide an indication of self-compassion as understood within the Buddhist ideal.

Further investigation using the scale with a student population indicated that those who were identified as possessing self-compassion reported fewer self critical thoughts in the face of difficult daily events (Leary, Tate, Adams, Allen & Hancock, 2007). Authors found that when asked to keep a log of daily difficulties and experiences those individuals high in self-compassion were significantly more likely to keep difficulties in perspective. Self-compassionate individuals demonstrated a tendency to recognise the bigger picture which forms an integral part of mindful acceptance, and were more likely to express aspects of common humanity reporting that problems were something everyone encountered (Leary, et al., 2007). The relationships observed between the scale and conceptually related behaviours replicate Neff's (2003b) findings. During validation of the scale similar relationships were found between the measured concept of self-compassion, self-criticism and degree to which individuals felt isolated or socially connected (Neff, 2003b). Relationships with theoretically apposed constructs were also evidenced. Those low in self-compassion were more likely to ruminate and suppress thoughts rather than engage with their emotion as would reflect mindful acceptance (Neff, 2003b). It is clear that these initial studies rely on correlational designs that limit broader conclusions. The strong relationships with standardized scales that seek to measure theoretically related concepts do provide evidence for the validity of the concept.

1.5.4 Identification and measurement of self-compassion

To date the tools available to measure self-compassion are limited. The scale developed by Neff (2003b) represents the only well validated scale seeking to measure self-compassion as an overarching construct. Development of the scale identified a 6 factor structure with self-kindness, mindful acceptance and common

humanity representing separate factors to their apparent polar opposites of self-judgment, over identification and isolation. These can be understood as positions adopted in relation to the self. When the complexity of these positions is considered the identification of 6 factors gains some clarity as the factors are unlikely to be mutually exclusive even if they appear to represent polar positions (Neff, 2003b). The overall self-compassion score reflects this complexity to some extent as it is not assumed for example that people who judge themselves are actively kind to themselves.

Neff's (2003a) definition of self-compassion appears to reflect the concept understood in Buddhist culture. Evidence would suggest that the measure is able to discriminate between individuals who would be likely to foster and value self-compassion (Neff, 2003b; Neff et al., 2008). Strong relationships have been identified between the scale and conceptually related behaviours, including the tendency to ruminate and suppress thoughts (Neff, 2003b) and the ability to view experience within the wider context (Leary et al., 2007) Established relationships with other scales measuring related concepts supports the validity of the construct being measured. The concept of self-compassion will now be considered in relation to current research evidence.

1.6 Literature exploring self-compassion

1.6.1 Self-compassion and psychological well being

Neff (2004) has suggested that self-compassion may be valuable to the individual by contributing to overall psychological well being. Neff (2004) has indicated the potential role of self-compassionate responses to the self in adaptive functioning that fosters aspects of psychological well being. In student populations positive associations have been established between self-compassion, happiness, optimism,

curiosity, reflective wisdom and personal initiative (Neff, Rude & Kirkpatrick, 2007a). Concepts were measured in a student population using validated and established scales. Self-compassion remained predictive of these elements of psychological well being when personality traits were controlled for suggesting that self-compassion may make a unique contribution (Neff et al., 2007a). It is important to recognise that the reliance on a correlational design allows such hypotheses to be proposed, but does not allow comment on causation. In a further undergraduate sample negative relationships between self-compassion and constructs of well-being were established (Neely, Shallert, Mohhamed, Roberts & Chen, 2009). The use of a composite measure for well-being that was developed for use in the study limits the generalization of findings as the psychometric properties of the scale are limited. Research exploring the relationship with psychological well-being across culturally distinct groups similarly demonstrated a positive correlation with life satisfaction and a negative correlation with depression (Neff et al., 2008). Within this there was little evidence of cross cultural differences (Neff et al., 2008). Given the preliminary nature of such investigations and the reliance on identified relationships replication is important in establishing findings. Such associations were replicated in 2009 when positive relationships between self- compassion, optimism, happiness and in addition positive affect, were confirmed by Neff & Vonk. When authors controlled for self-esteem self-compassion remained predictive of variance (Neff & Vonk, 2009).

Across study samples, positive relationships between self-compassion and components of psychological well being have been consistently identified (Neff, et al., 2008; Neff, et al., 2007a; Neff & Vonk, 2009). It is clear that many factors are likely to contribute to overall psychological well being (Neff, 2004). Evidence might suggest that self-compassion may play an important role even after factors such as individual personality traits are controlled for (Neff et al., 2007a). The unique contribution of self-compassion to an individuals psychological well being may be suggestive of its

potential protective value. Observed relationships with optimism, life satisfaction and positive affect (Neff, 2003b; Neff et al., 2007; Neff & Vonk, 2009) are particularly interesting in light of the theorized role of self-compassion in affecting the way we relate to negative experiences (Neff, 2003a). The observed negative relationships with maladaptive coping such as rumination and thought suppression add further support to this position (Neff, 2003b). Evidence appears to support the concept of self-compassion as an overarching cognitive factor potentially influencing coping and moderating emotional responses (Neff, 2003b; Neff, 2004).

1.6.2 Self-compassion and self-esteem

Self-esteem is widely understood as an important feature of psychological health (Neff, 2009; Baumeister, Campbell, Krueger & Vohs, 2003). Self-esteem is thought to reflect the view of the self. In this sense positive self-esteem is understood as a sense of self worth that represents a valuable resource for the individual (Baumeister et al., 2003). It is perhaps the dominance of self-esteem as a marker of psychological well being within Western thinking, which has led to its potential relationship with self-compassion receiving significant attention (Leary et al., 2007; Neff, 2003b; Neff & Vonk, 2009). A positive relationship between self-esteem and self-compassion has been well established (Leary et al., 2007; Neff, 2003b; Neff & Vonk, 2009). Initially restricted to student populations, more recent research has seen this link across more representative and culturally diverse populations (Neff et al., 2008; Neff & Vonk, 2009). What is central to note is that the research suggests that although the concepts are related they remain theoretically distinct and appear to make unique contributions to experience (Neff, 2003b; Neff & Vonk, 2009).

Neff (2003a) has postulated that the distinction between the concepts lies in the need for favorable comparisons of self to others to achieve good self-esteem, as apposed to the less evaluative and conditional nature of self-compassion. Findings

based on self report measures indicated a significant negative association between self-compassion and social comparison (Neff & Vonk, 2009). The authors adopted a more longitudinal design to examine stability over an 8 month period. The large sample (2,187) was recruited from the normal population further increasing the genralizability of the findings. The self worth of those with high self-compassion was less likely to be contingent on achievement and social approval by others (Neff & Vonk, 2009). Self-compassion was associated with greater stability in reported levels of self worth compared to self-esteem, which was found to fluctuate to a greater degree. These findings support the proposition that self-compassion may be more valuable to the individuals psychological well being as it is less contingent on comparison to others (Neff, 2003a). An earlier study conducted with a student population investigated learning styles and motivation and drew similar conclusions about the influence of external standards on self-compassion (Neff, Hsish & Dejitterat, 2005). They found that self-compassion was negatively associated with performance orientated goals and strongly associated with mastery goals for learning (Neff et al., 2005). This suggested that those high in self-compassion were less likely to hold academic goals based on achieving success in comparison to others (Neff et al, 2005). In the presence of self-compassion individuals may be more motivated by personal desire than the fear of unfavorable comparison to others (Neff et al., 2005). Although self-esteem was not controlled for in this study; similar conclusions about the value of self-compassion as a positive sense of self not reliant on favourable comparison to others is evidenced (Neff et al., 2005).

Authors suggest that self-compassion may not be dependent on achieving a desired or particular outcome as the maintenance of self-esteem may demand (Neff & Vonk, 2009). From this perspective authors have hypothesized that in the face of varied experience self-compassion may be more stable (Neff & Vonk, 2009). Self-esteem however, may be more likely to be reliant on positive achievement or

favourable outcomes for the individual (Neff & Vonk, 2009). Results over an 8 month period support this suggesting that self-compassion predicted greater stability in state self worth; a finding that could not be replicated for self-esteem (Neff & Vonk, 2009). The observational nature of these studies limits the ability of authors to draw firm conclusions about the proposed value of self-compassion over self-esteem. The experimental designs described below remain preliminary, but allow further exploration of the relationships observed.

1.6.3 Self-compassion vs. self-esteem

In 2007 Neff and colleagues (2007b) explored the influence of self-compassion in the face of actual social evaluation. The study specifically focused on anxiety likely to be present in situations that involve social evaluation (Neff et al., 2007b). Authors employed an experimental design, in which participants were given a common interview task that asked them to highlight a personal weakness. This was anticipated to provoke self evaluative anxiety (Neff et al., 2007b). Results suggested that when controlling for baseline affect and self-esteem, self-compassion remained negatively associated with state anxiety (Neff et al., 2007b). Authors have tentatively suggested that self-compassion may act a buffer in the face of situations that provoke self evaluative anxiety (Leary et al., 2007; Neff et al., 2007b). If such an event is viewed from a position of self-compassion the experience is more likely to be understood with a sense of perspective and kindness as well as the recognition of being human and inherently flawed (Neff et al., 2007b). As evidence suggests that self-esteem may be more influenced by comparison to others and favourable performance (Neff & Vonk, 2009), it is possible that self-compassion may prove valuable when self-esteem is most fragile (Neff et al., 2007b). Comparable findings have been reported by Leary et al. (2007) adopting a similar experimental approach. Researchers observed that when participants were exposed to an interpersonal event involving negative evaluation by peers, those high in self-compassion were more

accepting of critical feedback and less emotionally distressed (Leary et al., 2007). This finding was not replicated for those with low self-esteem and may further indicate the value of self-compassion over self-esteem in buffering negative affect (Leary et al., 2007). Authors suggest that in situations when individual weaknesses may be exposed or scrutinized a sense of worth built on set standards and comparison may be more vulnerable (Neff et al., 2007b).

Preliminary exploration in this area appears to indicate that self-compassion may be more stable in response to changing experience and less influenced by external forces than self-esteem (Neff et al., 2005; Neff et al., 2007b; Neff & Vonk, 2009). Further research adopting more robust experimental designs, including controlling for variables such as self-esteem and experimentally inducing anxiety with generic tasks, would enable greater confidence when interpreting group differences and will allow for firmer conclusions to be drawn about the impact of self-compassion over experiences. The relationships identified consistently indicate that in the face of difficult situations negative affect is lower for those who possess self-compassion and it is this relationship that is purported to be of central benefit to the individual (Leary et al., 2007; Neff et al., 2007b). The value of self-compassion in managing emotional distress will now be considered in light of the available research findings.

1.6.4 Self-compassion and emotional regulation

Early correlational studies indicated a negative relationship with both anxiety and depression (Neff, 2003b). Theoretical attempts to understand this relationship have adopted a similar perspective as Gilbert (2005; 2009) proposing that self-compassion allows the individual to circumvent responses that perpetuate their emotional pain. Approaching perceived failure with kindness, common humanity and mindfulness, the individual has the potential to achieve greater emotional regulation by engaging with the difficult feelings in a way that transforms negative affect (Neff

2003a; 2003b; 2004;). Exploration of this in research has focused primarily on the way that individuals cope with negative experiences and emotions.

The relationship between self-compassion and negative affect was explored by Neff and colleagues (Neff et al., 2005) in a student population. Self-compassion was negatively associated with anxiety and fear of failure in relation to academic work (Neff et al., 2005). Authors suggest that the adoption of a self-compassionate stance may empower greater freedom and curiosity, as failure and adversity do not carry heavy negative consequences (Neff et al., 2005). It is proposed that when faced with experiences of perceived failure, the negative affect generated by those with self-compassion may be met with kindness and viewed as part of the collective human experience. Neff et al. (2005) found evidence for this with the same student sample in response to actual academic failure. Those with a higher degree of self-compassion were significantly more likely to favor coping strategies that dealt with emotion through reframing and acceptance. Conversely a negative association was found with maladaptive coping styles that involved attempting to avoid or deny emotions (Neff et al., 2005). These findings draw clear parallels with the theoretical components of self-compassion and help to clarify its potential to foster adaptive coping to promote emotion regulation.

Research investigating the link between self-compassion and affect remains limited. The study conducted by Neff et al. (2005) provides some reflections on the processes that might be involved in regulating affect. A recent study by Thompson and Waltz (2008) investigating the relationship between self-compassion and post traumatic stress disorder (PTSD), reported similar findings to those of Neff et al. (2005). Within PTSD symptoms related to avoidance were negatively associated with self-compassion. Authors observed that participants who reported lower levels of self-compassion were more likely to take steps to avoid difficult emotions and upsetting

thoughts (Thompson & Waltz, 2008). This reflects the findings of Neff et al. (2005) who suggested that individuals low in self-compassion are more likely to engage in maladaptive avoidant coping strategies such as thought suppression. In the case of PTSD avoidance of difficult affect, images and thoughts serves to maintain the disorder (Thompson & Waltz, 2008). The correlational designs adopted are appropriate given the exploratory nature of the literature, but limit conclusions about causality. In the case of PTSD it is thought that avoidance of associated thoughts, images and affect play a key role in the maintenance (Thompson & Waltz, 2008). Given the research conducted by Gilbert et al. (2006) this may relate to a potential inability to direct compassion towards the self and has possible implications as an additional maintaining factor. Further research to directly investigate the relationship between self-compassion and coping styles in the face of distress appears valid. It is likely that this research will be of particular value in understanding the processes that underlie the proposed transformative power of self-compassion.

To date research attempting to induce self-compassion experimentally holds the potential to provide more robust evidence for the value of self-compassion in emotional regulation. This research remains in its infancy and there are mixed opinions on the most effective way to induce self-compassion. These preliminary studies will be described and considered in turn.

1.6.5 Experimentally inducing self-compassion

Neff, Kirkpatrick and Rude (2007b) adopted an experimental design in an attempt to induce self-compassing using the Gestalt two chair technique. Forty participants were recruited to the study, of these 90% were female suggesting caution when assuming the application of results to male populations. Participants were kept blind to the purpose of the study. To achieve this they were recruited to a second study through which pre and post data were collected using self-report measures.

This approach allowed researchers to minimize potential respondent bias. The study included additional therapist's ratings for self-compassion, which were necessary given that the Self Compassion Scale (Neff, 2003b) was developed as a trait measure. Participants met with one of two therapists for a single meeting in which the intervention was applied. In this session participants were encouraged to define and explore their self-critical voice as a separate entity from the criticized self. This was done through the exploration of a difficult personal situation. Therapists attempted to encourage feelings of care and understanding towards the criticized self to increase self-compassion (Neff et al., 2007b). The aim was to encourage dialogue between the self-critical voice and an alternative self-compassionate one. The induction employed was not specifically developed for the purpose of building self-compassion, but the aim to encourage an alternative dialogue within the self is consistent with the intended use of the two chair technique (Greenberg, 1983).

Findings a month after the intervention indicated that an increase in feelings of self-compassion was associated with a decrease in anxiety and depression, alongside an increase in feelings of social connectedness (Neff et al., 2007b). The identification of these relationships tentatively points to the potential positive impact of increasing an individual's capacity for self-compassion. There was a strong negative association with thought suppression, which remained after controlling for anxiety. This indicated that those who experienced an increase in self-compassion reported a decrease in the avoidance of difficult thoughts. This finding is clearly valuable in supporting the proposition by Neff et al. (2005) that self-compassionate individuals are less likely to use avoidance as a coping strategy. Further to this, it suggests the potential to foster positive coping by increasing the individual's capacity for self-compassion. A negative relationship between increased self-compassion and self-criticism was also observed. This preliminary observation is of particular value given the impact of self-critical thoughts in fostering negative affect (Gilbert, 2009; Gilbert et

al., 2004). The experimental design provides clearer direction on the potential value of self-compassion. Greater experimental controls, such as the inclusion of a control group, will be valuable in increasing the robustness of observed effects.

In conclusion researchers suggested that building self-compassion had the potential for greater psychological resilience by decreasing the tendency to engage in maladaptive patterns of coping such as self-criticism and the avoidance of difficult thoughts (Neff et al., 2007b). These findings were replicated in further research conducted by Adams and Leary (2007).

Researchers employed a less directive approach in a non clinical sample of 84 undergraduate students, who were encouraged to reflect on dietary rule breaks from a self-compassionate stance (Adams & Leary, 2007). Participants in the study were assessed for their tendency to restrict their diet using a specifically developed scale. The measure defined restrictive eating by the individuals' effort and desire to avoid foods considered unhealthy. The scale used to determine dietary restriction and affect associated with rule breaks was developed for the study and has limited evidence for its validity. Half the participants were asked to eat unhealthy food. Those in the experimental group were verbally encouraged to be kind towards the self, to adopt a balanced position in response to the rule break and to recognise that others are likely to experience the same. This was achieved through a scripted response by the researcher, the content of which drew parallels with the concept defined by Neff (2003a). Participants in other conditions received no such input. Results suggested that individuals in the self-compassion condition reported less negative affect and fewer self-critical thoughts following the breaking of dietary rules. Participants identified as restrictive eaters who received no intervention, expressed higher negative affect than the experimental group and controls. There was no attempt to measure or control for the level of self-compassion present in the sample, which

makes it difficult to draw conclusions about the impact of the induction. Researchers suggest that encouragement to meet the perceived failure with kindness and recognition of common experience helped to circumvent negative emotional affect (Adams & Leary, 2007).

In light of the limitations, results should be viewed with appropriate caution and are more usefully viewed within the wider context of the literature. The study findings, not withstanding the methodological difficulties, are comparable with previous research supporting the proposed value of self-compassion in subverting negative affect following perceived personal failure. Further replication with more robust measures, such as the Self Compassion Scale (Neff, 2003b) and validated scales for affect change would be important. Greater controls that determined the influence of rates of self-compassion would be of value when replicating the findings.

In the series of studies undertaken by Leary et al. (2007) an experimental method involving the induction of self-compassion was included. Participants were asked to recall a failure or rejection and encouraged to write about the experience. As this demanded reflection on a personal event there were limited opportunities to employ controls regarding the nature of the event recalled. Evidence would suggest however, that the degree to which individuals perceived their personally chosen event as 'bad' did not differ across conditions (Leary et al., 2007). Individuals in the self-compassion group were provided with prompt questions that aimed to shape their response in line with the three components of self-compassion; self kindness, mindful acceptance and common humanity. These prompts reflect Neff's (2003a) definition indicating the potential validity of the task for encouraging self-compassion. A further experimental group were asked to perform the same task, but were prompted with questions that aimed to make them feel good about themselves. In this condition participants were prompted with questions that aimed to encourage self-affirming

attributions. These were aimed at protecting self-esteem by fostering favourable and positive views of the self. The final two groups represented controls to allow clear conclusions to be drawn about the impact of the induction. Overall 115 undergraduate students participated in the research. Findings were consistent with previous studies indicating that participants who were encouraged to think and respond to failure self-compassionately reported significantly lower rates of negative affect. There were no significant differences in the negative affect reported across other conditions. Individuals in the self-compassion group were more likely to take responsibility for the failure or negative event than the members of other groups. This observation suggests that where self-compassion was induced negative affect remained low even when the individual saw the event as their fault. This relationship was not replicated in other conditions. It would appear that despite perceived personal responsibility for their failure, individuals encouraged to be self compassionate experienced lower negative affect than those in other conditions. This provides potential evidence for the proposed value of self-compassion in fostering coping to manage negative emotions. Further to this is the observation that those in the self-compassion condition were also more likely to feel connected or similar to other people. This might suggest that the compassion induction task helped individuals to feel that their experience was part of the wider human condition leaving them less isolated in their failure. The results support previous findings indicating the potential value of self-compassion to cope with potentially negative thoughts and circumvent negative emotion (Neff et al., 2005). The additional finding that those individuals were also more likely to feel similar to others or connected suggests support for the theoretical proposition regarding the value of common humanity in helping to make sense of experience (Neff, 2003a).

The proportion of studies employing an experimental design to investigate self-compassion remains limited at present and is restricted to the interest of a small pool

of researchers. The studies reflect the theoretic position adopted by a particular research group. In particular the literature seeks to explore the concept defined by Neff (2003a) and along with colleagues it is this author's work that dominates the reviewed literature. It is clear that replication by alternate groups will be valuable in further development of the concept and critical exploration of it. To date the tools available for measuring the construct are limited and it is likely that further attempts to quantify self-compassion will be of benefit. The consistency of the findings across these papers is encouraging and adds weight to the theoretical value of self-compassion in affect regulation. It should be noted however, that there was a lack of consistency in the way in which self-compassion was induced in these studies. Given the exploratory nature of this research this is perhaps necessary. All studies relied on student samples taken from the US, which limits the generalisability of findings. Further replication is required to establish the role of self-compassion.

Studies seeking to explore the value of self-compassion for the individual have demonstrated its potential to foster emotional regulation and so reduce negative affect in the face of adversity (Leary et al., 2007; Neff et al., 2007b). Evidence suggests that those with self-compassion are more likely to use adaptive coping strategies rather than avoidance and self-criticism (Neff et al., 2005; Thompson & Waltz, 2008). The results of induction experiments suggest that it is possible to foster self-compassion and that this may support adaptive coping (Leary et al., 2007; Neff et al., 2007b). Authors such as Gilbert (2009) suggest that the potential of self-compassion to foster emotional regulation points to its value in the treatment of mental health problems. In the following section this position will be outlined before the clinical research is discussed.

1.7 Clinical applications

In recent years a number of studies have attempted to foster the capacity to direct compassion towards the self (Gilbert & Irons, 2004; Gilbert & Proctor, 2006; Mayhew & Gilbert, 2008 Laithwaite et al., 2009). The proposed value of developing self-compassion lies in the potential for an individual to use this to soothe the self in times of distress and adversity. It has been suggested that due to early experiences and associated inadequacies in early relationships, self directed compassion is under developed in some individuals (Gilbert, 2010; Gilbert & Irons, 2005; Irons et al., 2006; Wang, 2005). When there has been limited opportunity to develop this capacity to soothe the self it is less likely to be accessible to the individual (Gilbert, 2010). Research to build self-compassion specifically seeks to foster this capacity in individuals with mental health problems. In particular it has been suggested that an inability to direct compassion towards the self may leave individuals vulnerable to developing psychopathology (Gilbert, 2009; Gilbert & Irons, 2004; Laithwaite et al., 2009). Over the course of these studies Gilbert and colleagues have pioneered a program called Compassionate Mind Training ([CMT] Gilbert, 2005; Gilbert, 2009; Gilbert & Irons, 2004; Gilbert & Proctor, 2006; Mayhew & Gilbert, 2008). The program represents an opportunity to redress the lack of development of the self soothing system for emotional regulation (Gilbert, 2010; Gilbert & Proctor, 2006) The aim of the intervention is to enable the individual to experience a felt sense of self-compassion that can be accessed in the face of adversity and failure (Gilbert, 2009; 2010). Drawing on social mentality theory, it is hoped that this will represent another way to relate to the self that is supportive and ultimately offers an alternative self to self relationship. This process requires that an individual actively experiences feelings associated with being soothed and cared for; feelings that are imbued with the central features of warmth, understanding and a desire to alleviate distress (Gilbert, 2009). CMT focuses on the use of self generated compassionate images associated with these feelings (Gilbert, 2009). As an alternative to an attacking or critical stance, the

intention is to use imagery exercises to explore a different way to relate to the self (Gilbert, 2009). It is proposed that with practice over time this may build into a retrieval advantage for systems that promote feelings of safety and regulate threat (Gilbert, 2005). This retrieval advantage means that in the face of perceived failure the individual can circumvent well worn patterns of maladaptive coping such as self-criticism that reflect the activation of threat systems and foster negative affect (Gilbert, 2010). Activating an alternative soothing system through the use of imagery can effectively switch off the predominant threat system (Wang, 2005; Gilbert, 2010).

Research developing components of CMT involved nine participants who were part of a self-help group for depression. The small sample size and lack of controls employed in the study design was reflective of the exploratory and collaborative nature of the investigation. Participants were recruited to the study based on their inclusion in the group and reported experience of self-criticism. All had a significant psychiatric history with co-morbid problems reported. In line with other findings (Gilbert et al., 2006), Gilbert and Irons (2004) found that some self-critical individuals in the group struggled to generate compassionate and warm feelings. When this difficulty generating compassionate feelings for the self was explored in depth these individuals reported that they could recall few early experiences of such care given by their parents. This evidence remains anecdotal in nature but points to the possible relationship between early experiences and the later ability to self-soothe. Research conducted since offers support to this, suggesting that the ability to recall memories of parental warmth predicts self-reassurance (Irons et al., 2006). Participants attended three meetings to explore the nature of self-criticism and to engage in imagery exercises to foster the ability to direct compassion towards the self. Self-report diaries were used to monitor changes. Participants reported positive experiences of generating self-compassionate images and overall an increase in the capacity to self-

soothe. Data collected qualitatively indicated the benefits of the imagery exercises employed.

These promising early findings were developed further by Gilbert and Proctor (2006) with a pilot group study employing CMT. Authors were keen to apply a more systematic group program consisting of 12 sessions to assess the impact of CMT in greater depth. The aims of the study remained exploratory and so a control group was not included. This makes it more difficult to be clear about the cause of observed changes. The naturalistic design of the study is valuable given the proposed clinical application, but further limits the ability to apply controls and draw firm conclusions about the presented outcomes. The group of 6 participants who completed the intervention had complex psychiatric histories including current difficulties self-critical thoughts. The sessions initially focused on making sense of the functions of self-criticism before attention was turned to the nature of self-compassion. Like the early developmental work (Gilbert & Irons, 2004), there was a focus on the use of imagery to develop a felt sense of compassion, which could gradually be encouraged and eventually internalized.

Following the group intervention participant's scores for anxiety and depression reduced significantly. The form of self-criticism and reassurance was measured using a scale developed by Gilbert et al., (2004). The measures used reflect the exploratory nature of the work, but more standardized measures are likely to be helpful to allow firmer conclusions to be made regarding change. There was a significant overall increase in self-reassurance and a similarly significant decrease in self-hatred. Importantly diary measures suggested that this translated into a real change in daily self to self relating. Over time participant's responses to the self moved away from punitive and negative positions and towards more self soothing and caring ones. The diaries kept by the participants would suggest an experiential

change in their approach to relating to the self. This finding directly meets the intended aim of CMT to build an alternative way of relating to the self. The perceived potency of the remaining self-critical thoughts was also reduced suggesting that they held less affective impact than prior to the intervention. This would indicate that the intervention influenced the experience of self-critical thoughts. Not all 6 participants attended follow up, but the 4 that did reported that they continued to use the techniques and practice their compassionate imagery. The findings were positive and support the theory proposing that over time shifts in the individual's relationship to the self may be possible. Preliminary evidence would suggest that changes in self to self relating may be associated with a decrease in depression and anxiety, and a reduction in the potency of self-critical thoughts. This demonstrates the potential value of increasing compassion towards the self in managing mental health problems.

Further refinement and exploration of CMT was a central aim for Mayhew & Gilbert (2008). To achieve this, authors conducted a series of case studies with participants reporting hostile and persecutory voices (Mayhew & Gilbert, 2008). The CMT approach was used with each of the 3 participants on a 1:1 basis. They were encouraged to develop an understanding of their self-critical voices and achieve an increased capacity to self-soothe by exploring an alternative way to relate to the self. To date this small sample size reflects the only evidence exploring CMT on an individual basis and with this client group. The intervention followed the 12 session format developed by Gilbert and Proctor (2006) and measured outcomes using similar self-report diaries. An overall decrease in the malevolence and persecutory nature of the voices was described by participants. There was a general increase in the level of reassuring voices reported however; the rates of self-critical voices experienced remained the same. This outcome can be seen as encouraging given that the aim is not to rebut the self-critical voice, but to foster an alternative relationship with the self that offers compassion. Outcomes from the self report diaries suggest that there was

a change in the felt experience of the voices and an increase in positive relating to the self. Diary measures were supported with psychometric measures which indicated lower rates of depression, anxiety, paranoia and psychoticism for all three participants following the intervention. In addition to promising outcomes researchers invited more qualitative information about the nature and experience of engaging in CMT. The acceptability of the treatment was high with participants giving positive feedback about the relevance and usefulness of the approach. After a year all 3 participants reported that CMT still featured in their attempts to manage and maintain their mental health. The use of case studies was valuable in exploring the value of CMT for voice hearers. To date however more controlled studies have not been undertaken to corroborate these initial findings and confirm the value of CMT with individuals hearing voices.

The most recent attempt to develop CMT has seen its application to individuals with a diagnosis of psychosis in a high security facility (Laithwaite et al., 2009). Laithwaite and colleagues (2009) adapted the CMT approach to include the promotion of recovery from psychosis. Nineteen males took part in one of three group programme that consisted of 20 twice weekly sessions. No control group was included and all participants received the adapted CMT intervention. The programme focused on the development of a compassionate other who could be drawn on to offer a compassionate voice in the face of the predominant critical one. Although developed from CMT, the intervention is comparable as it relied on the use of similar imagery tasks to explore and develop compassion towards the self. In line with the aims for the intervention, authors reported an overall reduction in rates of depression at completion, which was maintained at follow up. Similarly a significant increase in self-esteem was also observed. The intervention encouraged the use of the compassionate image as an alternative to self-critical thoughts; however no attempt was made to determine levels of self-criticism. A measure to monitor any change in the tendency to be self critical would have been

valuable. It is difficult to draw clear conclusions regarding causation without the inclusion of a control group. However, findings did indicate improvements in mental health outcomes associated with participation in the group.

The 4 published studies exploring the use of CMT have reported promising findings. The methodological approaches employed to evaluate the self-compassion interventions remain largely exploratory (Gilbert & Irons, 2004; Gilbert & Proctor, 2006; Laithwaite et al., 2009; Mayhew & Gilbert, 2008). The current body of research has involved participants from a range of backrounds and mental health problems, all of whom had a history of contact with services (Gilbert & Irons, 2004; Gilbert & Proctor, 2006; Laithwaite et al., 2009; Mayhew & Gilbert, 2008). These factors make it difficult to draw firm conclusions about the success of CMT alone. Replication and further studies involving control groups will be necessary to achieve clarification and begin to gain an understanding of the active components for change in CMT. The studies consistently demonstrated changes in self generated feelings of reassurance (Gilbert & Irons, 2004; Gilbert & Proctor, 2006; Mayhew & Gilbert, 2008). Diary measures suggested that this translated to an experiential change in the relationship with the self. The most recent study reported significant changes in mental health outcomes following the intervention (Laithwaite et al., 2009) The development and validation of more specific measures of the ability to soothe the self will be valuable in assessing outcomes and allowing more standardized group comparisons. CMT was reported to be helpful and acceptable to clients with experience of mental health services and psychological therapy (Gilbert & Proctor, 2006; Mayhew & Gilbert, 2008). To date the limited evidence would tentatively support the use of CMT as a therapeutic approach to achieve change in the relationship with the self. The findings of this small body of clinical research provide support for the theory proposed by Gilbert (2005), which suggests the value of building an individual's capacity to self-soothe to manage their mental health problems. To date these findings are largely

based on observed relationships which limits the ability to draw conclusions about causation and the components of change. Further controlled studies will be needed to confidently describe the value of interventions to build self-compassion in individuals with mental health problems.

1.8 Summary of self-compassion literature

Neff (2003a) has proposed a clear definition of self-compassion drawn directly from Buddhist tradition (Leary et al., 2007; Neff, 2003b). Studies that explore the validity of self-compassion suggest that it exists as a distinct construct (Neff, 2003b; Neff et al., 2007a; Neff et al., 2007b; Neff & Vonk, 2009).

Evidence suggests that there is an association between self-compassion and factors linked to psychological well being (Neff et al., 2007a; Neff et al., 2005; Neff & Vonk, 2009). When compared to related psychological phenomenon such as self-esteem it would appear that there is a positive relationship, but that self-compassion remains sufficiently different to indicate a separate construct (Neff, 2003b). Studies seeking to define the potential value of self-compassion have consistently evidenced positive associations with active coping styles and inverse relationships with aspects of maladaptive coping such as avoidance (Leary et al., 2007; Neff et al., 2005; Thompson & Waltz, 2008). Evidence appears to suggest that self-compassion may represent an overarching cognitive factor influencing coping and emotional responses (Neff, 2004). The limited number of induction studies seeking to foster feelings of compassion towards the self, have pointed to its value as a buffer to negative affect (Adams & Leary, 2007; Leary et al., 2007; Neff et al., 2007b).

The possibility of an association between self-compassion and mental health has been consistently postulated in the literature (Gilbert, 2005; Gilbert & Irons, 2004; Gilbert et al., 2006; Neff, 2003a). A negative relationship has consistently been found

between self-compassion, depression and anxiety (Neff, 2003b; Neff et al., 2007). Gilbert and colleagues have conducted a series of studies using CMT with participant's experiencing mental health problems (Gilbert & Irons, 2004; Gilbert & Proctor, 2006; Mayhew & Gilbert, 2008). Participants receiving CMT had a range of psychiatric difficulties, but all experienced self-criticism as a problem (Gilbert & Irons, 2004; Gilbert & Proctor, 2006; Mayhew & Gilbert, 2008). The findings remain preliminary and are based on the continued development of CMT (Gilbert & Irons, 2004; Gilbert & Proctor, 2006; Mayhew & Gilbert, 2008). Positive evidence for the value of building self-compassion has been observed (Gilbert & Irons, 2004; Gilbert & Proctor, 2006; Laithwaite et al., 2009; Mayhew & Gilbert, 2008). An increase in the capacity for self-reassurance (Gilbert & Irons, 2004; Gilbert & Proctor, 2006) and a decrease in the power of self-critical thoughts has been observed (Gilbert & Proctor, 2006; Mayhew & Gilbert, 2008). This translated into a reduction in rates of depression and anxiety (Laithwaite et al., 2009; Mayhew & Gilbert, 2008).

There is a growing literature exploring the concept and value of self-compassion. Authors have consistently demonstrated a negative relationship between self-criticism and self-compassion (Leary et al., 2007; Neff, 2003b; Neff et al., 2007a). Researchers working with participants experiencing mental health problems are particularly concerned with understanding the importance of self-compassion in the way in which we relate to ourselves. Interest in this stems from the impact of the self to self relationship when there is a lack of self directed warmth or compassion (Gilbert & Irons, 2004; Gilbert et al., 2006; Gilbert & Proctor, 2006; Mayhew & Gilbert, 2008; Mills et al., 2007). To date this relationship between self-compassion and mental health problems has not been explored in relation to eating disorder psychopathology. This potential gap in the literature will be discussed with particular attention to the value of research to investigate related questions.

1.9 Self-compassion and eating disorders; a gap in the literature

Self-criticism is recognized as a feature of eating disorders that is related to the core psychopathology (Cooper, 2005; Fairburn et al., 2003) and more specifically in perfectionism (Dunkley et al., 2003; Dunkley et al., 2006b), but to date the potential relationship with self-compassion has not been explored. A search of the literature was conducted combining the terms self-compassion and eating disorder. Related terms including self-soothing, nurturing, compassion, and diagnostic labels for eating disorders were also used. Further details of the search strategy employed are described in section 1.2.1. The search produced two papers of relevance; one exploring self-compassion in the face of dietary rule breaks in non eating disordered dieters (Adams & Leary, 2007) and the other exploring self-nurturance in eating disorders (Lehman & Rodin, 1989). The study undertaken by Adams and Leary (2007) has been described in depth in section 1.6.5. A brief review with a focus on relevant information will be given below.

Adams and Leary (2007) looked at self-critical feelings following dietary rule breaks in undergraduate students restricting their diet. Participants in the study were assessed for their tendency to restrict their diet and not eating disorder psychopathology. Those individuals considered to have symptoms akin to a diagnosis of eating disorders were excluded from the study. This was done as the intention was not to investigate an eating disorder population. The authors did not look specifically at rates of self-compassion in the sample and no attempt was made to measure this variable. The relationships observed in this undergraduate sample were akin to the proposed link between dietary rule breaks and self-criticism proposed in the transdiagnotic model of eating disorders (Fairburn et al., 2003). Of most interest is the finding that encouraging self-compassion may be valuable in subverting the negative affect associated with dietary rule breaks. Questions about the relationship between

eating disorder psychopathology and self-compassion were not addressed in the study.

Lehman and Rodin (1989) explored the propensity of individuals with BN to use food as a way to nurture the self. Lehman and Rodin (1989) define self-nurturance as an attitude towards the self that is self-comforting, supportive and accepting. These components of self-nurturance draw parallels with the definition of self-compassion validated in the current literature (Neff, 2003a; 2003b). In particular there appears to be overlap with the concept of self-kindness and a desire to alleviate ones own distress (Gilbert, 2009; Neff, 2003a). Authors proposed the study based on the hypothesis that food would represent the primary form of self-nurturance in BN (Lehman & Rodin, 1989). It was suggested that individuals with BN might have less capacity or resources available to psychologically care for or nurture the self (Lehman & Rodin, 1989). Gilbert and colleagues have adopted a similar position in regards to self-soothing and question the capacity of some individuals to achieve this (Gilbert, 2009; Gilbert, 2005; Gilbert & Irons, 2004). The terms used appear to describe similar concepts and both Gilbert (2005; 2009) and Lehman and Rodin (1989) suggest that this inability to care for the self stems from early experiences. Links can be drawn between the concept of self-nurturance described by Lehman & Rodin (1989) and self-compassion. The functions appear to be similar with both emphasizing a positive relationship with the self that is supportive and caring in nature. The value this is thought to serve in caring and soothing the self in times of difficulty appear similar.

Seventy participants from a clinical and undergraduate population were recruited. The participants were divided into three groups which were relatively small comprising of less than 20 participants. Interpretation of the study is limited by the small sample sizes available for comparison. Participants in the Bulimia group were recruited from a clinical service and had received a diagnosis using clinical interview

and the Eating Disorder Examination (Cooper & Fairburn, 1987). The remaining non clinical participants were divided into restrained or non retrained eaters using the Eating Attitudes Test (Garner, Olmsted, Bohr & Garfinkel, 1983). Self-report questionnaires were used to assess self-criticism and reactivity to events. Nurturance was measured using a scale developed for the study. It was comprised of items from an existing scale and the wider literature. There is limited evidence for the validity of this composite scale used in the study. The lack of psychometric evaluation demands consideration of its ability to adequately measure the construct under investigation. The decision to develop a specific measure reflects the lack of tools available to measure the construct. Participants were also asked to write descriptions of themselves and their parents. This was requested to provide a qualitative account to enrich questionnaire data.

Participants in the BN group reported a higher degree of self hatred and self-criticism in personal descriptions. This was supported by self report measures which indicated that significantly higher rates of self-criticism were reported by Bulimic participants compared to restrained and non retrained eaters. This is largely consistent with reports in the wider literature that point to the prevalence of self-criticism in eating disorders (Cooper, 2005; Steiger et al., 1990). An inability to accept and care for the self was more apparent in the BN group. Authors suggested that food represented the only available source of self-nurturance for participants with BN and that otherwise there was a paucity of resources to direct care towards the self. The proposed relevance of nurturance in the early environment was not supported. Given the reliance on descriptions and a composite measure, it is difficult to be confident about the impact of parental relationships and early experiences in the development of self-nurturance.

The study appears to be unique within the literature and adopts a particular focus on BN. This early attempt to highlight the relevance of self directed care in eating disorders is based on a theoretical understanding of the role of food in BN to provide an alternative to self care. The aim of this study was to explore this function and not to make reference to wider eating disorder psychopathology. Authors concluded that the apparent lack of ability to nurture the self may prove helpful in better understanding the role of bingeing in BN and suggested the need for interventions focused on developing alternative ways to nurture the self. To date no further research has attempted to replicate this link or explore the relationship any further. The study conducted by Lehman & Rodin (1989) was conducted 20 years ago and reflects a view of bingeing as a source of comfort. Developments in the understanding and treatment of BN have moved towards a broader physiological and psychological perspective on the nature of bingeing (Cooper, 2005; Cooper, Wells & Todd, 2004; Fairburn et al., 1993). It is possible that research such as that conducted by Lehman & Rodin (1989) has been overlooked to some extent in the current climate. The study has a number of methodological problems relating to sample size and data collection that may reflect the lack of further research interest.

The preliminary study conducted by Lehman & Rodin (1989) suggests that individuals with BN may be less able to nurture the self. Although theoretically similar, it is unclear whether self nurturance is related to the capacity to be self-compassionate. The question of the relationship between eating disorder psychopathology and self-compassion remains unanswered.

A search of the literature suggests that to date the relationship between eating disorder psychopathology and self-compassion has not been explored. Current theory and research shaping the treatment of eating disorders overlaps with the self-compassion literature with both highlighting the relevance of self-criticism. The need

to address the proposed link will be explored below and a rationale for the current study presented.

1.10 Context and rationale for the current study

There is clear agreement that eating disorders have a significant impact on the well being of sufferers (Berkman et al., 2007; Klump et al., 2009).To date, treatment approaches have reported modest recovery rates that highlight the need for further understanding (Berkman et al., 2007; Bulik et al., 2009). Recent attempts to increase the efficacy of the most commonly recommended therapeutic intervention, CBT, have pointed to the value of addressing additional maintaining factors (Fairburn et al., 2003; Fairburn et al., 2009).

Central to eating disorder psychopathology is the dysfunctional system for evaluating self worth, which relies almost exclusively on the ability to control intake to achieve a desired weight and shape (Cooper & Shafran, 2008). Cognitive models of both AN and BN reflect the importance placed on the strict adherence to self prescribed rules regarding dietary intake (Fairburn et al., 1993; Fairburn et al., 1999). Maintaining this control allows fragile self worth to be protected, whilst an intense fear of losing control simultaneously acts as a powerful negative reinforcer for adherence (Fairburn et al., 1993; Fairburn et al., 1999). The value of control over weight and shape is so central that minor rule breaks or infringements are perceived as significant failures (Fairburn et al., 1993). These perceived failures represent a potent challenge to self worth and are met with harsh self-criticism and berating (Fairburn et al., 1993; Fairburn et al., 2003). Authors suggest that the commonality of self-criticism in eating disorders is best understood in relation to this over reliance on control as a source of self worth (Steiger et al., 1990). In the face of perceived failure to maintain control, the individual engages in harsh self-criticism, which reinforces negative self beliefs and the strict rules governing intake (Fairburn et al., 2003). Perfectionism is a common

feature of eating disorders (Bulik et al., 2003; Fairburn et al., 2008) and is thought to be reinforced through a similar mechanism (Fairburn et al., 2003). In perfectionism, value is placed on the strict adherence to any self imposed rules, regardless of the negative consequences for the self (Shafran et al., 2002). For perfectionists, rule breaks are similarly associated with self-criticism and attacking (Dunkley et al., 2003; Dunkley et al., 2006a; Frost et al., 1990). It has been indicated that this self-critical reaction to perceived failure, forms the pathological component of perfectionism (Alden et al., 2002). Self-criticism following failure to adhere to self prescribed rules, reinforces negative self beliefs and stricter adherence to avoid the associated negative affect (Fairburn et al., 2003). In the case of eating disorders, this directly reinforces the value of control related to dietary intake (Fairburn et al., 2003). Research supports this, suggesting that that the self-critical component of perfectionism is a unique predictor for the over evaluation of weight and shape, and that as such, it may be important in understanding the relationship between them (Dunkley & Grilo, 2007; Dunkley et al., 2006a). The transdiagnostic theory proposed by Fairburn et al. (2003) highlights the potential maintaining role of self-criticism in reinforcing the core psychopathology of eating disorders and perfectionism, but there has been a lack of research exploring this in depth.

Recent attempts to understand the potency of self-criticism and its influence as a maintaining factor across psychopathology, have high lighted a lack of self-compassion as an additional relevant factor (Gilbert, 2005; Gilbert & Proctor, 2006; Gilbert & Irons, 2004). Preliminary research has suggested that self-critical individuals may be less able to direct feelings of warmth towards the self (Gilbert et al., 2006). In relation to the capacity for self-compassion, evidence identifying a negative relationship with self-criticism has been consistent (Neff, 2003b; Neff et al., 2007; Neff et al., 2005). Research specifically exploring the capacity to direct feelings of kindness and warmth towards the self, suggests that those with low self-compassion tend to

engage in self-criticism following perceived failure (Leary et al., 2007; Neff et al., 2005). The research shows that this was consistently associated with negative affect and maladaptive styles of coping, such as avoidance (Leary et al., 2007; Neff et al., 2007b; Neff et al., 2005; Thompson & Waltz, 2008). Those able to respond to the self compassionately were better able to cope with the initial disappointment and reported higher positive affect (Leary et al., 2007; Neff et al., 2005). The research suggests that following failure, those with high levels of self-compassion cope with associated negative affect differently, which appears to have a positive transformative effect (Leary et al., 2007; Neff et al., 2007b; Neff et al., 2005). Recent attempts to build self-compassion in self-critical participants have demonstrated similar findings (Gilbert & Irons, Gilbert & Proctor, 2006; Mayhew & Gilbert, 2008); In particular, reductions in the affective power of self-critical voices and consistent improvements in mood and anxiety (Gilbert & Proctor, 2006; Mayhew & Gilbert, 2008).

It is possible that a lack of self-compassion may offer an additional way to understand the proposed relevance of self-criticism in eating disorders (Fairburn et al., 2003). Self-criticism is understood as serving a maintenance role by both positively and negatively reinforcing the need for strict adherence to strict dietary control following perceived rules breaks or failure (Fairburn et al., 2003). Alternatively, responding to the self with compassion may promote more adaptive ways of coping that transform negative affect and challenge negative beliefs (Leary et al., 2007; Neff et al., 2005). As has been observed in other samples, the failure to respond to rule breaks with self-compassion may reflect an inability to generate kindness for the self, which may help to understand the potency of self-criticism (Gilbert et al., 2006; Mills et al., 2007).

The wider literature points to potential associations between eating disorder psychopathology, perfectionism and self-compassion, which to date have not been

investigated. In light of the limited recovery rates for eating disorders research exploring potential avenues to increase understanding are particularly valid (Berkman et al., 2007; Bulik et al., 2009). Given the lack of previous research the current study is exploratory in nature. The study will investigate whether eating disorder psychopathology is associated with lower levels of self-compassion in a non clinical sample. Continuum models suggest that eating disordered thoughts and behaviours have linear relationships with dieting and weight or shape concerns observed in the general population (Gleaves et al., 2004; Gleaves et al., 2000). Initial exploration of the proposed associations in a non clinical sample is likely to valuably inform current understanding. Investigation of the relationships between self-compassion, self-criticism, clinical perfectionism and eating disorder psychopathology will allow identification of associations between the constructs. The use of multiple regression analysis will improve clarity by providing details of the relative contribution of each component to eating disorder psychopathology. Hypotheses will be tested to determine the potential contribution of self-compassion and self-criticism to the current understanding of eating disorder psychopathology and clinical perfectionism.

1.11 Research questions

In the following section research questions and corresponding hypothesis will be proposed to explore the gaps identified in the current literature.

1.11.1 Research question 1

What relationships exist between eating disorder psychopathology, clinical perfectionism, self-criticism and an individual's capacity to be self-compassionate?

1.11.1.1 Hypothesis 1

Rates of eating disorder psychopathology will be positively associated with levels of self-criticism and negatively associated with reported rates of self-compassion.

1.11.1.2 Hypothesis 2

A positive relationship between the measured level of clinical perfectionism, rates of eating disorder psychopathology and self-criticism is predicted. Conversely a negative relationship between clinical perfectionism and degree of self-compassion will be established.

1.11.2 Research question 2

Do the identified relationships remain after related variables are controlled for?

1.11.2.1 Hypothesis 3

It is hypothesised that a negative relationship between self-compassion and eating disorder psychopathology will remain after controlling for mood. It is anticipated that when clinical perfectionism is held constant the relationship between self-compassion and eating disorder psychopathology will be significant.

1.11.2.2. Hypothesis 4

It is predicted that the negative relationship between self-compassion and clinical perfectionism will remain when the effect of self-criticism is controlled for.

1.11.3 Research question 3

To what extent do measures of self-criticism, self-compassion and clinical perfectionism predict eating disorder psychopathology?

Chapter Two

Method

2.1 Design

The study adopted a quantitative, non experimental, within subjects design. Data were collected through anonymous self-report questionnaires completed at one time point. Potential participants were invited to take part in the research via email. Participants accessed and completed the battery of measures through a secure online hosting website. This method allowed a large number of potential participants to be directly invited to take part in the research and the web-based approach to data collection offered participants a relatively quick and simple way to participate. Relationships between variables were explored using correlational and regression analysis.

2.2 Participants

2.2.1 Nature of the sample

The aim of the study was to explore the potential relationship between eating disorder psychopathology and self-compassion. To the author's knowledge there has been no previous attempt to explore the relationship between these factors. In the current study a non clinical population was employed. This was appropriate given the lack of current research in this area and the need for preliminary investigation of the proposed relationships. Participants invited to take part in the study were staff and students at the University of East Anglia.

2.2.2 Inclusion Criteria

Eligible participants were all adults over the age of 18. A minimum age for participation was desirable as some of the measures addressed sensitive issues and the method of data collection would not allow the researcher to contact individuals if

concerns were raised. The information sheets were written in English requiring that the participants taking part in the research had a reasonable understanding of the English language. This was appropriate given that the majority of the questionnaires had only been validated in the English language. Potential participants were approached via an invitation email (Appendix A). The final sample was therefore self-selected. As the proposed relationship between eating disorder psychopathology and self-compassion had not previously been investigated there was no evidence to justify further exclusion criteria.

2.2.3 Power analysis and sample size

The sample size was determined using Cohen's (1992) recommendations to achieve .08 power. To detect a medium effect size, with four predictor variables, at a significance level of .05, a minimum sample size of 118 was required (Cohen, 1992).

2.2.4 Recruited sample

The final recruited sample was 176. This was larger than the number necessary to achieve adequate power for the planned analysis.

2.3 Measures

The measures used in the investigation were chosen based on their suitability to explore required variables within practical limitations and evidence of adequate psychometric properties. Where not freely available, permission to reproduce the measures was sought directly from authors. In addition to the questionnaires participants were asked to provide demographic information in the form of age and gender only. Basic demographic information was collected to allow comment on the generalisation of findings and to determine any gender effect. As there is a large discrepancy in the reported rates of eating disorders in males and females (Hoek &

Hoeken, 2003), it was of potential value to investigate any gender difference in research variables. Refer to appendix B for the battery of the measures reproduced for the study.

2.3.1 Measure of eating disorder psychopathology

It was necessary to determine the degree of eating disorder psychopathology to allow the investigation of relationships with other variables. The Eating Disorder Examination – Questionnaire Version (EDE-Q; Fairburn & Beglin, 1994) was selected to do this. The EDE-Q is the self-report version of the Eating Disorder Examination (EDE; Cooper & Fairburn, 1987). The EDE is consistently described as the 'gold standard' method of assessment for eating disorder psychopathology (Luce, Crowther & Pole, 2008; Wilson, 1993; Mond, Hay, Rodgers, Owen & Beumont, 2004). Employing the self-report version has financial and time advantages, but also allows total anonymity which may promote openness (Fairburn & Beglin, 1994; Mond et al., 2004). The scale has been well validated and widely used within similar populations. See appendix B for a copy of the EDE-Q (Fairburn & Beglin, 1994; Mond et al., 2004).

2.3.1.1 Eating Disorder Examination- Questionnaire form (EDE-Q; Fairburn & Beglin, 1994)

The EDE-Q is a 36-item measure. It provides subscale scores for restraint, eating concern, shape concern and weight concern, all of which aim to measure central attitudinal features (Fairburn & Beglin, 1994). Further scales are available to determine the frequency of specific eating disorder and compensatory behaviours such as bingeing and vomiting (Fairburn & Beglin, 1994). Both attitudes and behaviours are assessed for their presence over the past 28 days. An overall or 'global' score can be determined by calculating the sum of subscale scores divided by the number of subscales. Global scores above 4 are considered to indicate clinically significant symptomology (Carter, Stewart & Fairburn, 2001; Luce et al.,

2008; Mond et al., 2006). Respondents are asked to record the degree to which a statement applies to them or the extent to which they have engaged in a given behaviour using a 7 point Likert scale.

2.3.1.2 Psychometric properties

Studies comparing the EDE and EDE-Q in community samples have shown moderate to high convergent validity between the four central subscales (Fairburn & Beglin, 1994). Exploration with a community adult sample has demonstrated good internal consistency across all four subscales (alpha levels between α= .78 and α= .94; Luce, Crowther & Pole, 2008). Further evidence from the same sample indicated good test re-test reliability (correlation coefficients between r= .81, p<.05 and r=.94, p<.05; Luce, Crowther & Pole, 2008).

2.3.2 Measure of Self-compassion

In order to explore the hypothesised relationships between self-compassion and other variables it was necessary to quantify the construct. The Self-Compassion Scale ([SCS] Neff, 2003b) was selected to determine capacity to direct feelings of warmth and kindness towards the self. The SCS is the only scale that aims to provide an overall measure for self-compassion. The composition reflects the three central aspects of self-compassion described by Neff (2003a) giving it a significant practical and time advantage. The scale has been used consistently with adult samples and has been well validated. A copy of the SCS is available in appendix B

2.3.2.1 Self-Compassion Scale ([SCS] Neff, 2003b)

The SCS is a 26-item scale that measures the tendency to direct self compassion towards the self (Neff, 2003b). The scale measures the component constructs of self-kindness, common humanity and mindfulness. Alongside these are

three factors that aim to measure self directed coldness by tapping self-judgement, isolation and over identification. Respondents are asked to rate the extent to which they respond to themselves in given ways on a five point Likert scale that ranges from almost never to almost always. Responses are totalled to provide an overall score with higher scores indicating a greater capacity for self-compassion (Neff, 2003b).

2.3.2.2 Psychometric properties

The SCS was developed by Neff (2003b) using an adult population. Its validation and repeated use have been undertaken with similar samples indicating the appropriateness of its use with the study sample (Leary et al., 2007; Neff, 2003b; Neff et al., 2005: Neff et al., 2007; Neff et al., 2007). Exploration of construct validity between the SCS and theoretically related constructs was calculated using Pearson's correlation coefficients (Neff, 2003b). The SCS was found to have a significant positive relationship with social connectedness ($r = .41$, $p < .01$) and elements of emotional intelligence (attention $r = .11$, $p < .05$; clarity $r = .43$, $p < .01$; repair $r = .55$, $p < .01$; Neff, 2003b). A significant negative correlation with self-criticism was also established ($r = -.65$, $p < .01$; Neff, 2003b). The scale has been shown to have good internal consistency, with alpha scores ranging between $\alpha = .75$ and $\alpha = .81$ demonstrated by Neff (2003b), and later alpha scores of $\alpha = .94$ established by Neff et al. (2005). Good test-retest correlations have been demonstrated over three weeks (correlation coefficients between $r = .80$, $p < .01$ and $r = .88$, $p < .01$; Neff, 2003b).

2.3.3 Measure of Perfectionism

It was necessary to assess levels of perfectionism within the sample in order to explore its contribution to hypothesised relationships. The Multidimensional Perfectionism Scale ([MPS] Frost et al., 1990) was selected as a suitable scale to provide an overall measure of perfectionism in the sample. The MPS has been well

validated and used in adult samples. It also possessed the practical advantage of being relatively brief. An example of the MPS is included in appendix B

2.3.3.1 The Multidimensional Perfectionism Scale ([MPS] Frost, Marten, Lahart & Rosenblate, 1990)

The MPS measures 6 dimensions of perfectionism defined by Frost et al. (1990) as personal standards, concern over mistakes, doubts about actions, parental expectations, parental criticism and organisation. These scales can be isolated for analysis or totalled to provide an overall measure of perfectionism. Higher global scores denote higher perfectionistic tendencies, whilst sub scale scores relate to specific features (Frost et al., 1990). The MPS is a 35 item scale made up of statements about the self. Respondents are required to rate the extent to which they agree or disagree with each item on a 5 point Likert scale.

2.3.3.2 Psychometric properties

The MPS was originally developed using a female sample (Frost et al., 1990), however subsequent psychometric evaluation has been undertaken in an adult sample with no gender effects established (Parker, Kittler & Adkins, 1995). The exploration of the MPS in a wider population replicated the original 6 factor structure (Frost et al., 1990) to confirm the validity of the construct (Parker et al., 1995). Initial exploration of the scale indicated good internal consistency across the subscales with an overall alpha score of α= .90 (Frost et al., 1990). This was replicated by Parker et al. (1995) who confirmed good overall internal reliability with a further alpha score of α= .88. The original authors consistently demonstrated positive correlations between MPS subscales and other established measures of perfectionism (Frost et al., 1990). The measure has been used in studies exploring the relation to eating disorder psychopathology in general and clinical populations (Hewitt, Flett & Ediger, 1995;

Minark & Aherns, 1996; Stuandar-Pinnock, Woodside, Carter, Olmsted & Kaplan, 2003).

2.3.4 Measure of Self-Criticism

To explore the proposed hypotheses it was necessary to determine the levels of self-criticism experienced by participants within the sample. The Depressive Experience Questionnaire ([DEQ]; Blatt, D'Afflitti & Quinlin, 1976) was selected as it includes a scale of self-criticism that has been well validated and widely used within adult samples and in research exploring related populations (e.g. Dunkley et al., 2006a; Dunkley et al., 2006b). The DEQ provides a measure of the overall tendency for self-criticism which met the requirements for the study. An example of the DEQ is provided in appendix B

2.3.4.1 The Depressive Experience Questionnaire ([DEQ]; Blatt, et al. 1976)

The DEQ (Blatt, et al. 1976) was developed to measure depressive experiences that did not necessarily reflect the clinical symptoms of depression. The measure includes three subscales; self-criticism, dependency and efficacy, each of which can be scored independently. The self-criticism scale is most pertinent to the current study and includes items addressing concern over perceived failure, which is theoretically relevant to the self-compassion construct (Neff, 2003). The self report scale is made up of 65 statement items that reflect personal characteristics and experiences. Respondents are required to rate the extent to which they agree or disagree with them on a 7 point scale. The subscale score is isolated to provide an overall measure of the tendency to be self-critical. Higher overall scores relate to a greater tendency to respond to the self critically (Blatt, et al., 1979; Zuroff, Quinlan & Blatt, 1990).

2.3.4.2. Psychometric properties

The DEQ was developed for use with adults (Blatt, et al. 1976) and has been used consistently to assess self-criticism (eg. Cox Rector, Bagby, Swinson, Levitt & Joffe, 2000; Dunkley et al., 2006a; Neff, 2003b; Priel & Besser, 2000; Rector, Bagby, Segal, Joffe & Levitt, 2000; Zuroff, Igreja & Mongrain, 1990). Psychometric investigation has suggested good internal consistency across the scale with alpha scores between α= .73 and α= .81 (Zuroff, et al., 1990). With regards to the self-criticism scale, good internal consistency has been confirmed (α= .80; Blatt, Quinlan, Chevron, McDonald, & Zuroff, 1982; Zuroff, et al, 1990) and adequate test-retest reliability established (r = .75, p<.05; Zuroff, Moskowitz, Wielgus, Powers & Franko, 1983).

2.3.5 Measure of Mood

The current study aimed to explore the associations between research variables to allow comment on any relationships identified. Previous research exploring self-compassion (e.g. Neff, 2003b; Neff et al., 2008), self-criticism (e.g. Gilbert et al., 2006; Irons et al., 2006) and eating disorder psychopathology (Berman et al., 2007; Klump et al., 2009) has identified associations with depression. As mood has been consistently associated with key research variables under investigation it was deemed necessary to determine its potential influence in any relationships observed. To enable exploration of the proposed research questions it was necessary to control for the effect of mood within the sample, a standardised measure of mood was required to achieve this. The Centre for Epidemiological Studies Depression Scale was deemed suitable as it was developed to measure depressive symptomology in a non clinical population ([CES-D] Radloff, 1977). The scale had the practical advantage of brevity and has been used extensively in previous research exploring related areas and questions (e.g. Gilbert et al., 2004; Gilbert et al., 2006;

Irons et al., 2006). Refer to appendix B for a copy of the CES-D used in the current study.

2.3.5.1 Centre for Epidemiological Studies Depression Scale (CES-D; Radloff, 1977)

The CES-D is a 20 item self report scale that measures affective and somatic features of depression alongside related interpersonal difficulties. Respondents are required to rate the extent to which they have experienced the stated feeling or behaviour over the past week. Statements are rated between 1, experienced on less than one of the days to 4, experienced on between 5 and 7 of the days.
In community samples, researchers suggest that total scores above 27 should be recognized as being of clinical significance (Geisser & Roth, 1994; Zich, Attkisson & Greenfield, 1990). This suggests that individuals scoring above this cut off are likely to report symptoms indicative of clinical depression (Geisser & Roth, 1994; Zich, Attkisson & Greenfield, 1990).

2.3.5.2 *Psychometric properties*

CES-D was developed in an adult population (Radloff, 1977) During its development the CES-D was shown to have good internal consistency (α= .84; Radloff, 1977). The four factor structure originally identified by Radloff (1977) has been replicated in studies across the lifespan to confirm construct validity (Hertzog, Van Alstine, Usala, Hultsch, & Dixon, 1990; Orme, Reis & Herz, 2006 ; Knight, Williams, McGee & Olaman, 1997; Roberts, Andrews, Lewinsohn, & Hops, 1990). The CES-D has been shown to correlate highly with established measures of depression (Beck Depression Inventory) indicating adequate construct validity (Geisser & Roth, 1997; Wilcox, Field, Prodromidis & Scafidi, 1998; Zich, et al., 1990). More recent validation studies have indicated its validity for identifying various levels of symptom

severity in non clinical samples (Clark, Mahoney, Clark & Eriksen, 2002 Husaini, Neff, Harrington Hughes & Stone, 2006).

2.4 Procedure

2.4.1 Recruitment

Participants were staff and students at the University of East Anglia. Permission to contact potential participants was sought via email from the individual heads of schools and the Dean of Students, who subsequently circulated the invitation email (see Appendix A). In total over 2400 affiliates from schools across the university were approached (figure estimate based on rates reported by heads of schools). The invitation email offered a brief over view of the research and the nature of involvement. It also included information regarding the incentive for participation. Of those who received the invitation email, 257 visited the website and 176 participated in the study. The overall response rate was around 7%.

2.4.2 Access to the web study

The invitation email included a link which directed interested individuals to the study information sheet (Appendix C). This was held on the 'Survey galaxy' website, which is a secure hosting site that supports the collection of questionnaire data online. The participant information sheet advised readers on the nature of their involvement and offered contact details for the researcher to answer any concerns (Appendix C). Potential participants were advised that participation would offer the opportunity to enter a prize draw to win an 'i-pod nano'. Respondents who opted to participate in the study were required to complete the online consent form (Appendix D). Completion of the consent form was necessary to access the battery of measures.

Participants initially viewed a page requesting demographic information before viewing each questionnaire in turn (Appendix E). Measures were reproduced as

originally composed by the authors (Appendix B). Participants were required to navigate the site by following on screen directions and answering questions in a written or check box format. They were only able to move through the questionnaires after all previous questions were answered. This made it compulsory to provide a response to every question. Once completed participants viewed a debrief page thanking them for their involvement (Appendix F). The debrief information contained details of agencies available to support participants with any concerns following completion of the questionnaires. Participants were then offered the opportunity to enter into the prize draw for the 'i-pod nano'. To do this they were asked to access an optional page to enter an email address.

Participant involvement in the study was then complete. The winner of the prize draw was selected in May 2010 and informed via the email address provided. The data was held securely by the 'Survey galaxy' website before analysis and interpretation.

2.5 Ethical consideration

2.5.1 Approval

Ethical approval was sought and granted by the Faculty of Health Ethics Committee at the University of East Anglia (Appendix G).

2.5.2 Consent and coercion

Consent was obtained from all those who chose to participate in the study. Prior to participation interested individuals viewed the information sheet (Appendix C). This provided an outline of the aims, rationale and participant requirements for the study, before advising readers that participation was for adults over the age of 18

(Appendix C). Details were provided on issues of confidentiality and the management of data. Participants were advised that they were able to withdraw from the study at any time and that their data would subsequently not be included in the research. The consent form was presented with a check box format (Appendix D). It confirmed participants were over 18, aware of the information sheet and conscious that they were free to leave the study at any time. It was necessary to answer each question to access the battery of questionnaires.

The debrief page viewed following the completion of the measures thanked them for their involvement. It was possible to be completely clear and open about the purpose and aims of the study in the debrief sheet.

2.5.3 Confidentiality

No personally identifiable information was collected from participants. Anonymity was assured by providing each participant with a numerical identifier only. Demographic information and questionnaire data were associated with this number. Participants were provided with the opportunity to contact the researcher with questions pertaining to the study or their involvement. It was made clear in all written information that in such a case anonymity would have been broken. Those who chose to participate in the prize draw were required to provide an email address. This information was held separately to questionnaire data to ensure anonymity. It was made clear that only the winner would be contacted and that other email addresses would be destroyed. Data were collected via the secure online survey hosting site 'Survey galaxy'. The site transferred participant data to a password protected excel file which was only accessible to the researcher. Data were managed in accordance with the Data Protection Act 1998.

2.5.4 The inclusion of an incentive

The study required participants to complete the self report questionnaires in their personal time and the prize draw was proposed as an incentive for doing so. As such the wish to participate in the prize draw was not assumed. Participants were required to opt in by providing an email address held separately from data.

2.5.5 Possible distress and risk issues

The questionnaires included in the study specifically highlighted symptoms associated with eating disorders and depression. There was the possibility of such issues raising concerns for those participating in the study. It was essential to maintain the confidentiality of participants to encourage participation and openness in responses, therefore identifying potentially at risk individuals was not possible. To address this, following the completion of questionnaires the participants viewed a debrief page thanking them for their involvement. This included contact details of agencies specializing in support for sufferers of eating disorders. The NICE (2004) guidelines indicate primary care as an initial port of call for help and as such, any concerned parties were advised to contact their GP. To support this strategy participants' were given contact details for the researcher to discuss related issues or worries in greater depth. As discussed above it was made clear that the decision to do this would involve breaking anonymity (Appendix F). No participants contacted the researcher following participation in the research.

2.5.6 Feedback

Participants were advised that following completion of the study in July 2010, they could contact the researcher for a synopsis of the results.

2.6 Statistical analysis

2.6.1 Management of data

Participants responded to all questionnaires online. Responses were transferred securely via the 'Survey galaxy' website to a password protected excel file. Data was then analysed using the Statistical Package for Social Science (SPSS) computer program on a password protected computer.

Chapter Three

Results

3.1 Overview

The following chapter will provide an overview of the data including demographic information on the sample and descriptive information about the research variables. In the later section results will be presented in relation to the proposed research hypotheses.

3.2 Exploration of assumptions

Data were explored using visual and statistical methods to ensure it was suitable for further analysis. Tests were applied to determine the distribution of the data, to ensure the data set was complete and to identify any outliers. The final sample used for analysis was 176

3.2.1 Missing data

Of the 257 individuals who expressed an interest in the study by visiting the site hosting the questionnaires, 176 (68%) completed the full battery of measures. Data from those who did not complete all of the questionnaires was excluded from analysis. The decision to exclude this data was based on the agreed nature of participation stated in the information sheet and approved by the ethics committee, which advised interested parties that they were free to leave the study at any time and that their data would consequently not form part of the research (Appendix C information sheet). As a consequence any individual who did not complete the full battery of questionnaires was assumed to have left the study and their data was excluded from analysis.

Of the 81 individuals who visited the host site, but did not take participate, 61% chose to exit the study after reading the information sheet whilst the rest failed to complete the measures to varying degrees. Due to the lack of participant contact built in to the design to ensure anonymity, possible reasons for non completion of the full battery are purely speculative. Reviews of the literature using the internet to collect questionnaire data suggest that factors such as the length of measures and the level of sensitivity regarding the questionnaire content may influence drop out (Knapp & Heidingsfelder, 2001). In the current study it is possible that the sensitivity of the area of research and the time required to complete the battery of questionnaires may have dissuaded some individuals from taking part. Participants were recruited from a university population and as such it is possible that academic pressure may have influenced drop out and participation rates. The time available to collect data was restricted by the short timeframe for completion of the study, which limited flexibility in the time available for recruitment. Invitations to participate were sent between October and March to limit the influence of academic work pressures however this may have been an additional factor in the decision to participate.

3.2.2 Outliers

Box-plots were used to screen the variables for outliers and extreme values (Appendix H). Outliers were identified on measures for self-compassion, depression and clinical perfectionism. Graphical representation of the data for self-criticism and eating disorder psychopathology suggested that there were no anomalous results present.

3.2.3 Distribution of the sample

The distribution of the sample was initially explored using histograms (Appendix I) with further statistical analysis applied to determine the skewness and kurtosis of the data. Linear relationships were identified. Statistics were converted to z-scores to allow

comparison (see Table 1 below). Preliminary analysis suggested that variables for self-compassion, eating disorder psychopathology and depression were positively skewed indicating a higher proportion of low scores.

Table 1

Converted z-scores for skewness and kurtosis across variables

z-scores for	SCS total	EDE global	CESDscore	MPS global	DEQ SC
Skewness	2.87*	3.78*	5.06*	0.89	0.68
Kurtosis	0.18	1.34	0.82	1.84	1.09

z scores marked with * are larger than the 2.58 cut off and are significant at a level of <.001.
SCS total= self-compassion; EDE global= eating disorder psychopathology; CESD score= mood; MPS global= clinical perfectionism; DEQ SC= self-criticism

The Kolmogorov-Smirnov test was applied to the data to confirm whether the variables were normally distributed (see Table 2 below). The variables for self-compassion, $D(176) = .09$, $p < .001$, eating disorder psychopathology, $D(176) = .12$, $p < .001$, and depression, $D(176) = .12$, $p < .001$ were significantly non normal. Analysis of the data for self-criticism and clinical perfectionism suggested that they were normally distributed.

Table 2

Kolmogorov-Smirnov statistics to evaluate normality of distribution

	SCS total	EDE global	CESDscore	MPS global	DEQ SC
K-S	.09	.12	.12	.04	.04
Sig.	.001	.001	.001	.200*	.200*

Sig marked with * are for normally distributed variables
SCS total= self-compassion; EDE global= eating disorder psychopathology; CESD score= mood; MPS global= clinical perfectionism; DEQ SC= self-criticism

Field (2009) suggests that the K-S statistical analysis may be biased in large samples. Q-Q plots were executed for the non-normally distributed data to visually confirm the statistics (Appendix J). These confirmed that the data were not normally distributed.

3.2.4 Correcting the distribution

Screening of the data identified that the variables of self-compassion, eating disorder psychopathology and depression were not normally distributed, and that variables for self-compassion, clinical perfectionism and depression contained outliers. In an attempt to correct the distribution the data was transformed in line with recommendations by Field (2009) and Tabachnick and Fidel (2001). Data was successfully transformed using square root transformation, which was applied to all variables. It was deemed appropriate to attempt to correct the distribution to enable more extensive analysis. Statistical transformation did not bias the results as the research questions required interpretation of relationships only (Field, 2009). The Kolmogorov-Smirnov test and box-plots were repeated to determine the influence of square root transformation (see Table 3 and Appendix K). None of the statistics remained significant indicating the transformed variables were normally distributed.

Table 3

Kolmogorov-Smirnov test of normality on transformed variables

	SCS total (Sqr)	EDE global (Sqr)	CESD score (Sqr)	MPS global (Sqr)	DEQ SC (Sqr)
K-S	.08	.06	.06	.08	.06
Sig.	.075*	.200*	.200*	.172*	.200*

Sig marked with * are for normally distributed variables

SCS total= self-compassion; EDE global= eating disorder psychopathology; CESD score= mood; MPS global= clinical perfectionism; DEQ SC= self-criticism

Box-plots suggested that the outliers influencing the distribution of data had been largely corrected (Appendix K). Outliers remained in the MPS global and the DEQ SC data. These outliers were converted due to their potential to bias the statistical model. Conversion of the 2 outliers was based on agreed recommendations presented by Field's (2009) and Tabachnick and Fidell (2001) who suggest that it is appropriate to alter the score to within one unit of the next most extreme case. Repeated box plots following this procedure confirmed that the cases no longer represented outliers (Appendix L).

3.3 Descriptive statistics

In total over 2400 individuals affiliated to the University of East Anglia received emails inviting them to participate in the study (Appendix A). The email introducing the study was sent to those working and studying across the range of schools within the university. The sample was taken from an institution based in East Anglia with a varied population of British and international affiliates studying and working at various educational levels. Of these, 257 expressed an interest in the study by visiting the hosting website and 176 completed the full battery of questionnaires. The overall participation rate for the study 7%.

3.3.1 Description of age and gender representation in the sample

The age of participants ranged between 18 and 62 with an average of 26 (see Table 4). Around 47% of participants were aged 21. This would suggest that the majority of the sample were undergraduate students. Of the 176 participants 81% were female. As recruitment involved invitations being sent across schools within the University of East Anglia, it is unlikely that this difference reflects a gender bias in those offered an opportunity to participate.

Table 4

Descriptive information on age and gender

N= 176	Mean	Median	Mode	Min – Max	Range
Age	26	22	21 (47%)	18 – 62	44
Gender	Female	Male			
	142 (81%)	34 (19%)			

3.3.1.1Gender effects

Given the over representation of females within the sample it was necessary to explore any gender effects. Means across variables were grouped by gender and compared using independent t-tests. The assumptions of homogeneity were met throughout.

On average female participants in the sample reported a slightly higher rate of eating disorder psychopathology (M= 1.4, SD= .3) than males (M= 1.2, SD= .3). This difference was significant, $t(174)= 2.379$, $p<.02$; however it represented less than a small effect, or no effect ($r =.03$, $p<.02$). This suggested that although there was a difference between rates of eating disorder psychopathology by gender (i.e., that females rates were consistently higher), the quantitative difference in the level of symptoms reported was very low. On average there was no significant gender effect for self-compassion, $t(174)= -.96$, $p>.33$, self- criticism, $t(174)= .18$, $p>.86$, clinical perfectionism, $t(174)= .81$, $p>.42$, or depression, $t(174)= 1.12$, $p>.24$.

3.3.2 Descriptive information for research variables

Table 5 provides descriptive statistics for the rates of self-compassion, eating disorder psychopathology, clinical perfectionism, depression and self-criticism across the sample.

Table 5

Descriptive statistics for research variables

N= 176	SCS total	EDEQ global	CESDscore	MPS global	DEQ SC
Mean	73.4	2.1	18.9	107.6	0.1
Median	71.0	1.8	16.0	106.0	0.2
Mode	70.0	1.3	9.0	92.0	-2.8
Std Deviation	18.9	0.9	12.6	21.6	1.1
Minimum	36.0	0.6	0	39.0	-2.8
Maximum	130.0	4.5	55.0	161.0	2.9
Range	94.0	3.9	55.0	122.0	5.7

SCS total= self-compassion; EDE global= eating disorder psychopathology; CESD score= mood; MPS global= clinical perfectionism; DEQ SC= self-criticism

Self-compassion scores within the sample suggest that on average the participants had a high level of self compassion (M= 73.4) and a low level of self-criticism (M= 0.1). There was a broad range of scores reported on both scales. In the case of self-criticism this may have been influential as the average score was not reflective of the mode, which was considerably lower. This would suggest that it was common for participants to report much lower rates of self-criticism than the mean would indicate.

Across the sample a proportion of participants (39) scored above 27 on the CES-D. In community samples scores above this cut off have been reported to be indicative of depressive symptoms (Geisser & Roth, 1994; Zich, et al., 1990). This would suggest that within the current sample around 22% may have been experiencing depressive symptomology at a clinically relevant level.

On average levels of clinical perfectionism in the sample were high. Across the sample subscale scores suggested that concerns over mistakes, high personal

standards and level of organisation made the greatest contribution to overall perfectionism scores. Lower scores for scales related to parental expectations and parental criticism were reported. This would suggest that clinical perfectionism observed in the sample was characterised more by participant standards and a fear of failing to meet these, than by perceived external or parental pressures. Table 6 provides a break down of subscale scores for the MPS.

Table 6

Descriptive information on subscale scores of the MPS

N=176	Concern over mistakes	Personal standards	Parental expectations	Parental criticism	Doubt about actions	Organisation
Mean	26.6	24.3	13.0	10.0	12.1	21.4
Median	27.0	25.0	12.0	9.0	12.0	22.0
Mode	27	28	12	8.0	10	22.0
Std Dev	8.3	5.7	4.8	2.9	3.8	5.4

Average rates of eating disorder psychopathology in the sample were slightly higher than community norms reported in adult female samples of undergraduates in the US (M= 1.74; Luce, Crowther & Pole, 2008) and adults in Australia (M= 1.59; Mond, Hay, Rogers & Owne, 2006). The modal rate however is closer to expected norm suggesting the potential influence of more extreme scores across the sample. Findings for the individual subscales reflect the patterns observed in previous community samples, with higher average scores for weight concern (M= 2.7) and shape concern (M= 2.8; Luce, et al, 2008; Mond, et al, 2006) compared to eating concern and restraint subscales that may be more likely to tap behavioural aspects of eating disorder psychopathology. This is in line with recent continuum models suggesting that comparable rates of psychological features of eating disorder

psychopathology are present in the normal population (Miller et al., 2009) Table 7 below provides a break down of subscale scores.

Based on researchers agreement on the clinical significance of scores greater than 4 (Carter et al., 2001; Luce et al., 2008; Mond et al., 2006), 5% (N= 9) of the sample had psychopathology of a clinically relevant level. This suggests that in relation to the global or total rate of eating disorder psychopathology, 5% reported symptoms that would be considered clinically significant. This figure is in line with reported norms for community samples (Luce et al., 2008).

Table 7

Descriptive information on subscale scores of the EDE

N=176	Restric-tion	Eating concern	Shape concern	Weight concern
Mean	1.6	1.2	2.8	2.7
Median	1.1	0.6	2.6	2.6
Mode	0.0	0.0	1.0	2.8
Std Dev	1.6	1.4	1.8	0.8

The sub sample of individuals scoring within the clinical range for eating disorder psychopathology was too small (9) to allow comparative analysis with the wider sample. In light of this restriction the average scores across research variables were examined. Table 8 provides a summary of the scores for the participants who reported clinically relevant eating disorder psychopathology. It is clear that although scores on the EDE-Q are much higher than the mean reported for the whole sample (M= 2.1), they are only just above the clinical cut off of 4. This would suggest that although reporting some symptomology, the sample does not appear to include anyone with a significant eating disorder. Compared to the sample as a whole (see Table 5), average rates of self-compassion are lower, whilst rates of clinical perfectionism and self-criticism are considerably higher. The majority of individuals in this clinically

significant sub sample also meet the criteria for depression. The sub sample characterised in Table 8 is restricted to only 9 participants who reported rates of eating disorder psychopathology above the clinical cut off. It is clear that individuals in this group reported higher levels of psychopathology, including increased rates of clinical perfectionism, self-criticism and depression compared to the wider non clinical sample.

Table 8

Total scores per variable for the sub sample scoring within the clinically significant range for eating disorder psychopathology

N=9	EDE global	SCS total	CESD score	MPS global	DEQ SC
Mean	4.2	52.3	26.0	137.1	1.56
Mode	4.2	51.0	25.0	135.0	1.84
Min- Max	4.0- 4.5	36.0 – 60.0	17.0- 43.0	123.0- 152.0	0.97- 2.22

SCS total= self-compassion; EDE global= eating disorder psychopathology; CESD score= mood; MPS global= clinical perfectionism; DEQ SC= self-criticism

3.3.3 Summary of descriptive information

The final sample for the current study was 176. Of the sample recruited across schools at the University of East Anglia 47% were aged 21. There was a female gender bias (81%) in the sample however, when examined differences based on gender were minimal. Across those sampled the average rates of self-compassion were high, whilst reported levels of self-criticism were low. A proportion of participants (22%) reported symptoms of depression and the average rates of perfectionism were high. A small number of participants (5%) were above the clinical cut offs for eating disorder psychopathology. These nine participants reported higher rates of psychopathology on other variable measures compared to the sample means. In line with recommendations the data were transformed to satisfy the assumptions of

parametric tests. In the following section the results of the analysis will be presented in relation to the proposed research questions.

3.4 Findings in relation to research questions

3.4.1 Research question 1:

What relationships exist between eating disorder psychopathology, clinical perfectionism, self-criticism and an individual's capacity to be self-compassionate?

The relationships between research variables were investigated using Pearson's correlation coefficients to enable commentary on the direction and strength of any associations identified. Table 9 provides a summary of the correlation coefficients. All statistics were performed using the transformed data, which satisfied the assumptions of parametric tests.

Table 9

Pearson's correlation coefficients for the research variables

N= 176	SCS total	EDE global	CESD score	MPS global
SCS total				
EDE global	-.35*			
CESDscore	-.72*	.44*		
MPS global	-.60*	.40*	.49*	
DEQ SC	-.81*	.41*	.49*	.66*

* denotes correlation is significant at <.001 (1 tailed)

SCS total= self-compassion; EDE global= eating disorder psychopathology; CESD score= mood; MPS global= clinical perfectionism; DEQ SC= self-criticism

To answer the research questions it was necessary to perform multiple correlations, this approach carries the risk of increasing type I error. To minimise the risk that the proposed hypotheses were wrongly accepted a Bonferroni correction was

performed (Curtin & Shulz, 1998; Field, 2009). The corrected level of significance for the reported correlation coefficients was .005.

3.4.1.1 Hypothesis 1

It was hypothesised that rates of eating disorder psychopathology would be positively associated with levels of self-criticism and negatively associated with reported rates of self-compassion.

A negative relationship between eating disorder psychopathology and self-compassion was identified ($r = -.35$, $p<.001$). In support of the hypothesis this suggested that those with higher rates of eating disorder psychopathology were likely to report lower levels of self-directed compassion. The magnitude of the association between the variables was moderate and suggested that self-compassion may account for 12.3% of the variance in eating disorder psychopathology. The prediction of a negative relationship between self-criticism and eating disorder psychopathology was also evidenced. A positive relationship was identified ($r = .41$, $p<.001$) indicating a moderate association. This suggests that as rates of self-criticism rose so did levels of eating disorder psychopathology. In the current sample 16.8% of the variance in eating disorder psychopathology was explained by self-criticism. This would suggest that self-criticism may account for slightly more of the variance in eating disorder psychopathology compared to self-compassion. The unique contribution of each however, was unclear.

3.4.1.2 Hypothesis 2

A positive relationship between the measured level of clinical perfectionism, rates of eating disorder psychopathology and self-criticism was predicted. Conversely it was hypothesises that there would be a negative relationship between clinical perfectionism and degree of self-compassion.

Correlational analysis supported the second set of hypotheses. Those with higher rates of clinical perfectionism reported higher levels of eating disorder psychopathology ($r = .40$, $p<.001$) and self-criticism ($r= .66$, $p<.001$), with positive relationships identified in both cases. The association between clinical perfectionism and eating disorder psychopathology was moderate. The relationship with self-criticism was of a greater magnitude and reflected a large association between the variables. In this case 43.5% of the variance in clinical perfectionism was explained by self-criticism. Conversely a large negative relationship was established between clinical perfectionism and self-compassion ($r = -.60$, $p<.001$), which suggested that self-compassion accounted for 36% of the variance in clinical perfectionism. Within the sample those with high levels of self-compassion reported lower rates of clinical perfectionism. Self-criticism and self-compassion explained a large proportion of the variance in clinical perfectionism. This would suggest that self-compassion and self-criticism are stronger predictors of rates of clinical perfectionism than levels of eating disorder psychopathology in the sample.

Scores for depression in the sample were positively associated with all other clinically relevant variables, with moderate associations identified with eating disorder psychopathology ($r = .44$, $p<.001$), self-criticism ($r = .49$, $p<.001$) and clinical perfectionism ($r = .49$, $p<.001$). The inverse relationship was established with self-compassion ($r = -.72$, $p<.001$). The magnitude of the association between mood and self-compassion was large and suggested that 51.8% of the variance in depression scores was explained by self-compassion. The analysis also highlighted a large negative relationship between reported rates of self-compassion and the level self-criticism ($r = -.81$, $p<.001$). In the present sample the degree of shared variance between self-compassion and self-criticism was 65.6%, this would suggest that self-compassion explained over half of the variation in self-criticism.

3.4.1.3 Gender effect

As preliminary exploration of the data suggested a small but significant gender effect for the sample, the correlation coefficients were replicated with data from female participants (see Table 10 for a summary of the correlation coefficients). As the only significant gender difference identified was for rates of eating disorder psychopathology, repeated analysis for female participants was restricted to this variable.

The relationships between eating disorder psychopathology and other variables were not substantially different to those observed across the sample (self compassion, r= -.33, p<.001; clinical perfectionism, r= .40, p<.001; self- criticism, r= .39, p<.001). The size of the relationship between eating disorder psychopathology and depression was smaller than that observed in the wider sample (r= .39, p<.001). In standardised terms, the magnitude of the associations remained moderate. The additional analysis would suggest gender had little influence on the research findings.

Table 10

Pearson's correlation coefficients for data from female participants only

N= 176	EDE global
SCS total	-.33*
CESDscore	.38*
MPS global	.40*
DEQ SC	.39*

* denotes correlation is significant at <.001 (1 tailed)

SCS total= self-compassion; EDE global= eating disorder psychopathology; CESD score= mood; MPS global= clinical perfectionism; DEQ SC= self-criticism

3.4.2 Research question 2:

Do the identified relationships remain after related variables are controlled for?

Initial analysis identified significant relationships between all research variables. Further analysis was undertaken to explore these associations in more depth. To determine whether additional variables better accounted for the observed relationships partial correlation analysis was used. The effect of research variables was controlled for based on previous research indicating their potential influence in relationships. Partial correlations were used to allow the shared variance with the additional variable to be removed. Analyses were performed with the transformed data, which satisfied the assumptions of parametric tests.

3.4.2.1 Hypothesis 3

It was hypothesised that the negative relationship between self-compassion and eating disorders would remain after controlling for mood. It was similarly anticipated that when clinical perfectionism was held constant a relationship between self-compassion and eating disorder psychopathology would remain.

After controlling for depression there was no relationship between self-compassion and eating disorder psychopathology ($r = -.06$, $p > .22$). The partial correlation suggested that when the shared variance with mood was removed, there was no association between self-compassion and eating disorder psychopathology. The partial correlations suggest that mood accounts for the association observed. This may indicate that mood represents an interacting factor between self-compassion and eating disorder psychopathology (Healey & Prus, 2009). Mood may be central to the observed association, indicating that a relationship may only be important in the presence of mood. These findings failed to support the proposed hypothesis and suggested that mood may explain the relationship between self-compassion and

eating disorder psychopathology. As an interacting factor the partial correlation may indicate that self-compassion may be relevant to eating disorder psychopathology when mood is present.

The negative relationship between self-compassion and eating disorders was smaller, but remained significant when the effect of clinical perfectionism was controlled ($r= -.15$, $p<.02$). The magnitude of the relationship reduced from a moderate to a small association. The proposed hypothesis was supported, but the reduced size of the relationship would indicate that clinical perfectionism is influential and explains a proportion of the shared variance. The reduction in the association identified would suggest that clinical perfectionism may be an important interacting factor helping to explain the relevance of self-compassion in eating disorder psychopathology.

In the current sample the relationship between self- compassion and eating disorders is not direct and may be explained by other factors. The nature of this influence cannot be explained by the coefficients. It is possible that both mood and clinical perfectionism represent intervening factors linking the observed relationships between self-compassion and eating disorder psychopathology (Healey & Prus, 2009).

Results of the partial correlation analysis employed to explore the second research question, suggested that mood explained the observed relationship between self-compassion and eating disorder psychopathology. This would indicate that in the current sample the association between eating disorder psychopathology and self-compassion was not direct. This finding supports previous research highlighting the relationship between mood and self-compassion (Neff, 2003b; Gilbert et al., 2006; Irons et al., 2006). In light of the present findings and associations identified in the

wider literature, it was valid to conduct further analysis to determine the influence of mood on the observed relationships between self-compassion and the other research variables. Besley et al. (2004) suggest that where there is a substantial relationship with the control variable, a reduced association would be expected. Although this was likely to be the case given the strength of the relationships between mood and other research variables, it remained prudent to determine whether the observed associations were better explained by mood.

Further partial correlation analysis was performed using the transformed data that satisfied the assumptions for parametric tests. The relationships between self-compassion and study variables were examined with the effect of mood held constant. See Table 11 for a summary of the exploratory partial correlations.

Table 11

Partial correlation analysis of the relationship between self-compassion and study variables after the influence of mood on both variables is controlled for.

N= 176	SCS total
SCS total	
EDE global	-.06
MPS global	-.41*
DEQ SC	-.43*

* denotes correlation is significant at <.001 (1 tailed)

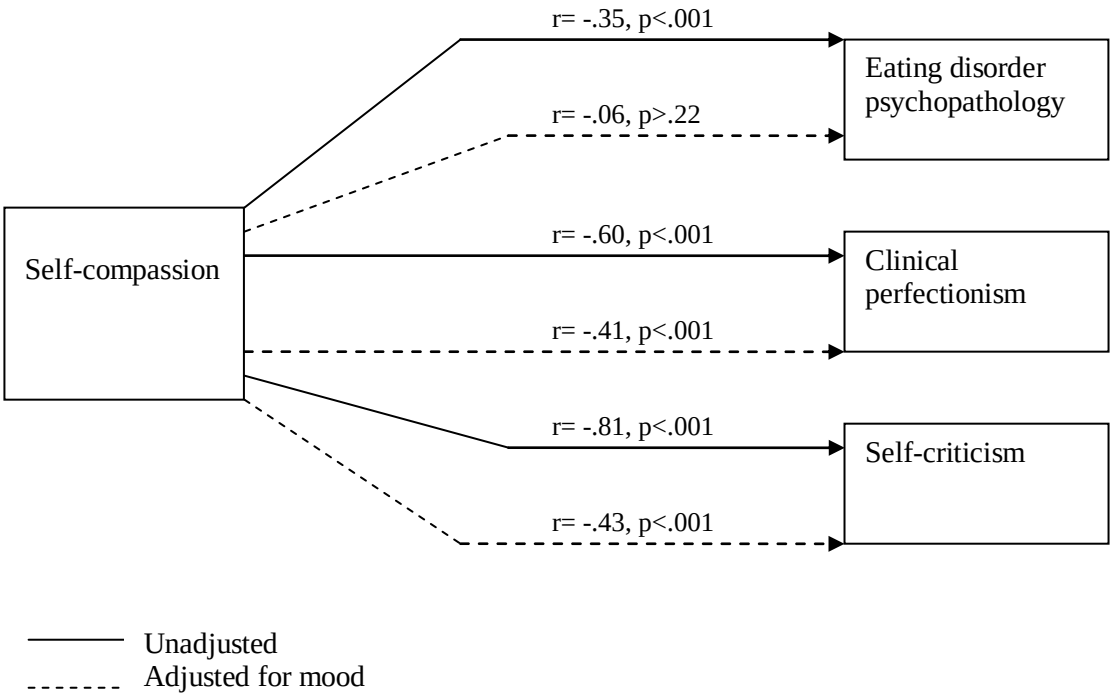
SCS total= self-compassion; EDE global= eating disorder psychopathology; CESD score= mood; MPS global= clinical perfectionism; DEQ SC= self-criticism

Results of the exploratory analysis suggested that the relationship between self-compassion and clinical perfectionism (r= -.41, p<.001) remained significant when the influence of mood was removed. The strength of association between the

variables was reduced suggesting that mood accounted for a proportion of the shared variance. In the case of self-criticism, the relationship with self-compassion also remained when the effect of mood was held constant ($r = -.43$, $p < .001$). The reduction in the size of the association would suggest that mood is influential and may explain part of the observed relationship between self-compassion and self-criticism. See Figure 3 below for a diagrammatic representation of the partial correlation analysis. In both cases mood appears to account for a proportion of shared variance; however the moderate associations remaining would suggest that the relationship with self-compassion remains relevant. In the case of both clinical perfectionism and self-criticism, the observed associations with self-compassion are not fully explained by mood. The degree of association that remained when the effect of mood was held constant would indicate that self-compassion accounts for unique variance in self-criticism and clinical perfectionism.

Figure 3

Diagrammatic representation of partial correlation analysis demonstrating the influence of mood in identified relationships: Continuous lines denote correlations between variables and dashed lines describe the associations after the effect of mood was held constant



3.4.2.2 Hypothesis 4

It was predicted that the negative relationship between self-compassion and clinical perfectionism would remain significant when the effect of self-criticism was held constant.

The negative relationship between self-compassion and clinical perfectionism remained significant, but was greatly reduced after controlling for self-criticism, r= -.17, p<.04. The size of the relationship reduced from a moderate to a small

association. These findings are in support of the hypothesis, but suggest that self-criticism may influence the relationship between self-compassion and clinical perfectionism. The reduced relationship would suggest that self-criticism explains a proportion of the shared variance in the observed relationship. The findings of the partial correlation indicate that rates of both self-compassion and self-criticism explain variation in clinical perfectionism and represent predictors in the sample. This may indicate the importance of acknowledging them as factors most relevant when both are present.

3.4.3 Research question 3:

To what extent do measures of self-criticism, self-compassion and perfectionism predict eating disorder psychopathology?

Multiple regression analysis was undertaken with eating disorder psychopathology as the dependent variable. The additional variables of self-compassion, self-criticism, depression and clinical perfectionism were entered as predictor variables. It was hypothesised that these independent variables would contribute to a statistical model that could be used to predict eating disorder psychopathology. Previous research exploring self-compassion has consistently identified relationships with mood and self-criticism (Gilbert et al., 2006; Irons et al., 2006; Neff, 2003b). Authors suggest that where there are relationships between independent variables, there is a risk of multicollinearity and a biased regression model (Cohen, 2003; Tabachnick & Fidell, 2001). In the case of the current study it was appropriate to include these variables in the model due to the exploratory nature of the research. Given the lack of previous research investigating the relationship between the research variables, it was necessary to employ regression analysis in an attempt to comment on the potential contribution of each variable to the prediction of eating disorder psychopathology. A standard method was employed as there was no

theoretical model available to inform the entering of predictors (Tabachnick & Fidell, 2001). The dependent variables were entered simultaneously and rejected based on their unique contribution to the model.

The regression analysis violated the assumption of multicollinearity. The average VIF score was greater than the suggested 1, which indicated that the regression was biased (Field, 2009). Collinearity diagnostics confirmed that the variance was not equally distributed across dimensions and that multicollinearity existed in the data (variance proportions were loaded unevenly across the eigenvalues). This reflected the high degree of correlation between independent variables in the model.

As the model violated the assumption of multicollinearity it cannot be generalised or used to make predictions about other populations. Never the less it remains potentially useful in considering the sample under investigation. A significant regression model was identified ($F= 13.852$, $p<.001$), in which the dependent variables accounted for 24.5% of the variance within the independent variable, $R^2 = .245$. The F value was significant and greater than 1 suggesting that the model was better at predicting eating disorder psychopathology than the mean alone. The model suggested that self-compassion and self-criticism did not make significant contributions to its predictive value. When all other variables were held constant, clinical perfectionism and mood made small contributions to the model (see Table 11 for a summary of the model).

Table 11

Contribution by variable to the regression model in which eating disorder psychopathology is the independent variable

	B	Std error	T	Sig
CESD score	.07	.02	3.31	.00*
MPS global	.08	.03	2.55	.01*
SCS total	.04	.04	1.13	.26
DEQ SC	.26	.24	1.11	.27

B= b-value, individual contribution to the model; t= t-test whether contribution is significant. SCS total= self-compassion; EDE global= eating disorder psychopathology; CESD score= mood; MPS global= clinical perfectionism; DEQ SC= self-criticism

The statistical rejection of self-compassion and self-criticism from the model suggests that they do not make a unique contribution. However, this may be explained by the high correlation between those variables (Besley, Kuh & Welsch, 2004; Cohen, 2003; Tabachnick & Fidel, 2001). Correlation coefficients above .70 are present in the data. Tabachnick & Fidel (2001) suggest that associations of this magnitude may weaken the analysis. Caution is necessary as the degree of association not shared by other predictor variables is insufficient to confidently comment on the actual contribution of each variable (Besley et al., 2004). It is possible that self-criticism and self-compassion appear redundant in the present model despite their potential contribution. Authors suggest that in such cases the resulting model may be less precise and so misleading (Besley et al., 2004; Tabachnick & Fidel, 2001). In particular the contribution of each predictor is likely to be unreliable, which makes it difficult to draw firm conclusions about the model (Cohen, 2003). Muliticollinearity is a particular issue for the present study as the intention was to determine the relative contribution of self-compassion, self-criticism and clinical perfectionism to eating disorder psychopathology. The ability to confidently answer this question is compromised by the multicollinearity present in the data (Cohen, 2003). It is possible that the value of self-compassion and self-criticism were masked.

The regression model suggested that clinical perfectionism and mood are predictors of eating disorder psychopathology in the sample. Self-compassion and self-criticism were not found to make unique contributions to the model. The small amount of variance explained by the model and the modest contributions of significant variables would suggest that there are further contributing factors accounting for the variation in eating disorder psychopathology. The multicollinearity in the model makes it difficult to draw clear conclusions. The high correlation between the predictors would suggest that they may not measure suitably distinct features of the dependent variable making some appear redundant in a regression model (Tabachnick & Fidel, 2001). It is possible that the contribution of self-compassion and self-criticism were masked statistically. The lack of previous research to direct interpretation would indicate the need for particular caution in assuming the accuracy of the presented regression model (Besley et al., 2004). This would suggest that the relative importance of self-criticism and self-compassion cannot confidently be commented upon.

3.4.4 Exploratory analysis

The strength of the relationships between variables might suggest that the concepts they measure overlap to some extent. This is likely to be related to the complexity of the constructs being measured. It is possible that the close correlations between research variables may mask interesting information relating to the detail of the associations. Given the paucity of previous research the current investigation was particularly interested in the contribution of self-compassion. In an attempt to better understand its relevance to the observed relationships further analysis was undertaken using the subscale components of the SCS. Table 12 offers a summary of the relationships identified.

Authors caution that conducting repeated correlational analysis with the same data increases the risk that a relationship will be wrongly identified. It is suggested

that further analysis should be justified (Curtin & Schulz, 1998). In line with this the exploratory analysis was restricted to the subscales of the SCS that reflect Neff's (2003a) definition of the construct. A further Bonferroni correction was performed to minimise the risk of making a type I error (Curtin & Schulz, 1998; Field, 2009). The corrected significance level was .004.

Table 12

Pearson's correlation coefficients for the components of self-compassion

N=176	SCS SK	SCS CH	SCS M
SCS SK			
SCS CH	.61*		
SCS M	.69*	-.26*	
EDE global	-.34*	-.40	-.63*
MPS global	-.42*	-.58*	-.39*
DEQ SC	-.67*	-.58*	-.63

* denotes correlation is significant at <.001 (1 tailed)
SCS= self-compassion; SCS SK= self- kindness; SCS CH= common humanity; SCS M= mindful acceptance; EDE global= eating disorder psychopathology; MPS global= clinical perfectionism; DEQ SC= self-criticism

The results of the correlational analysis replicated the trend of relationships observed previously (see Table 12). In the case of eating disorder psychopathology significant negative relationships with self-kindness ($r= -.34$, $p<.001$), common humanity ($r= -.26$, $p<.001$) and mindful acceptance ($r= -.30$, $p<.001$) were observed. Although the magnitude of the relationships reduced, the degree of association between the components of self-compassion and eating disorder psychopathology remained moderate. The size of the relationship with self-kindness was the largest and closely replicates the observed relationship between eating disorder psychopathology and overall self-compassion ($r= -.35$, $p<.001$). Compared to the

further components self-kindness accounts for the largest amount of variance in eating disorder psychopathology. It is important to note that the analysis does not allow comment on the unique contribution of each component in comparison, and the degree to which they explain the same variance in eating disorder psychopathology is not clear.

Significant negative relationships were observed between clinical perfectionism and all components of self-compassion (self-kindness, r= -.42, p<.001; common humanity, r= -.40, p<.001; mindful acceptance, r= -. 39, p<.001). The relationships were smaller than those observed between clinical perfectionism and total self-compassion (r= -.60, p<.001). For each component of self-compassion the magnitude of the relationship with clinical perfectionism was moderate. This is compared to a large association with the total self-compassion score. It appears that of the components of self-compassion, the largest relationship is with the capacity for self-kindness. It is unclear to what extent self-kindness may make a unique contribution to explaining clinical perfectionism, but the results suggest that it may be of particular importance.

Significant negative relationships between self-criticism and the components of self-compassion were observed. When compared to the association between total self-compassion and self-criticism (r= -.81, p<.001), the magnitude of the relationship with components was reduced in each case (self-kindness, r= -.67, p<.001; common humanity, r= -.58, p<.001; mindful acceptance, r= -.63, p<.001). Standardised comparison indicates that the degree of association between the components of self-compassion and self-criticism remained large. The relationship between self-kindness and self-criticism (r= -.67, p<.001) was greater than with the other components (common humanity, r= -.58, p<.001; mindful acceptance, -.63, p<.001). Overall self-kindness explained the largest proportion of variance in self-criticism. This does not

however, allow comment on the unique contribution of this component of self-compassion.

3.5. Summary of findings

A negative relationship was identified between eating disorder psychopathology and self-compassion. When the effects of mood and clinical perfectionism were controlled for it became clear that the relationship was not direct and was influenced by additional factors. Further partial correlational analysis suggestes that, although mood explained a proportion of the shared variance between self-compassion and the additional research variables, it did not account for it fully. This indicated that self-compassion explained unique variance in self-criticism and clinical perfectionism. A negative association between self-compassion and clinical perfectionism was established. The relationship was smaller, but remained significant when self-criticism was controlled for. This indicated the potential importance of both constructs in predicting clinical perfectionism. The regression analysis suggested that only mood and clinical perfectionism represented predictors of eating disorder psychopathology. It is possible that the multicollinearity across the variables masked the potential influence of self-criticism and self-compassion. Given the degree of association between these two constructs and their relationships with further research variables, their unique contribution remains unclear. In light of the magnitude of the associations identified, additional analysis was undertaken to observe the individual importance of the three components of self-compassion. Across research variables self-kindness consistently accounted for the largest proportion of variance.

Chapter Four

Discussion

4.1 Overview

In the following section the findings of the current study will be discussed in relation to previous research. Potential theoretical developments will be proposed and the implications for clinical practice tentatively considered. From this perspective the direction of further research will be discussed. Initially the study design will be critically reviewed to establish the limitations within which the findings must be considered.

4.2 Evaluation of study design

The current study intended to provide a preliminary investigation of the relationship between eating disorder psychopathology and self-compassion. The observational correlational design answered related research questions to provide direction for future research.

Findings should be understood in light of certain limitations to the study design. In the following section the parameters for interpretation of the results will be outlined.

4.2.1 Design

An important limitation of the study design was its reliance on correlational analysis. The identification of relationships provides no indication of causation so conclusions about cause and effect cannot be drawn (Field, 2009; Tabachnick & Fidel, 2001). Although significant relationships between self-compassion and other variables were identified, assumptions about the influence of self-compassion in these

relationships cannot be made. The current study relied on data collected at one time point. It should not be assumed from this cross-sectional design that relationships would remain stable over time. This similarly limits the ability to draw conclusions regarding causality in the relationships observed. Given the lack of research exploring the variables under investigation, it was appropriate to first determine whether such relationships existed. The presented findings offer justification for more research to explore the observed relationships in greater depth. It is likely that further experimental research will provide clearer conclusions about causality by employing greater manipulation and controls.

4.2.2 Sample

Consideration of the sample recruited and the possible implications for the interpretation of results will be considered in the following sections.

4.2.2.1Gender

The findings of the current study are representative of the sample, but generalisation to the wider population cannot be assumed. The distribution of gender in the sample was not proportionately representative, with a much higher percentage of female participants being recruited to the study (81%). The higher rate of female participation was not reflective of bias in recruitment as no population within the university was specifically targeted. As the sample was self-selected, this may suggest that women were more attracted to the nature of the study than men. Evidence would suggest that there are few differences between males and females presenting with eating disorders (Woodside et al., 2001), but that females remain the most affected (Hoek & Hoeken, 2003). In the current sample analysis indicated a small but significant effect for gender on eating disorder psychopathology. There was no gender effect for reported rates of self-compassion, clinical perfectionism or self-criticism. In the present sample average rates of eating disorder psychopathology

were higher in females than males (Female M= 1.4; Male M= 1.2). Further correlational analysis restricted to data of female participants indicated minimal differences compared to the relationships observed in the whole sample. This would suggest that findings were not substantially affected by the unequal gender split. In light of research suggesting little gender effect on the clinical presentation of eating disorders (Woodside et al., 2001), the current sample is likely to remain valid when drawing tentative theoretical conclusions. In further research however the recruitment of males may need to be a specific focus to allow more generalisable findings to be established.

4.2.2.2 Ethnic diversity

The university population from which the sample was recruited is likely to be relatively diverse in terms of ethnic background. Official statistics for students attending the University of East Anglia suggest that 16% are from outside the UK (HESA, 2010). Although this may be to some extent reflective of the wider diversity in the population, data on ethnicity were not collected and so the ethnic mix of the sample cannot be confidently commented upon. Neff et al. (2008) have reported that individuals from eastern cultural backgrounds may be exposed to self-compassionate concepts as an ideal. In light of this, such individuals may be more likely than those from western backgrounds to value the capacity and report higher levels. Given the preliminary nature of this study, the research questions were exploratory and such controls were not included. In further studies it may be of value to control for ethnic background to consider any difference in rates of variables measured and the potential influence over results.

4.2.2.3 Age

The sample included adults with a range of ages, but there was a substantial concentration of younger adults aged 21 (47%). Although recruitment was not limited

to the student body, it is likely that this reflects a high degree of undergraduate students participating. In their review of morbidity research, Hoek and Hoeken (2003) suggest that the highest reported rates of eating disorders were in females aged 18-24. This suggests that the self-selected sample may have reflected a relatively representative group in terms of clinical populations, but one which may have also been more at risk of eating disorders than the wider population. In the current study however, reported rates of clinically significant symptoms were comparable to those observed in the general population (Luce et al., 2008; Mond et al., 2006). This would suggest that the results are unlikely to have been significantly influenced by the age of participants. It remains important to recognise that the spread of ages within the sample was not representative of the wider population, which limits the generalisation of findings.

4.2.2.4 Educational ability

Recruitment was restricted to adults affiliated with the university and as such the level of education may not be reflective of what would be expected in the general population. All measures included in the study were selected based on their validation in adult populations. This would suggest that they should not have proved a practical challenge regardless of educational ability. To date studies exploring the concept of self-compassion have been concentrated in student populations, however replication across more representative samples have indicated no significant differences in rates of self-compassion (Neff, 2003b). Similarly investigations of rates of eating disorder psychopathology in non clinical populations suggest minimal differences between reports in undergraduate and wider samples (Luce et al., 2008; Mond et al., 2006). Conclusions from these studies would suggest that recruitment restricted to a student sample may not result in misleading findings based on the variables under investigation. As the possible influence of educational ability was not controlled however, generalisability should not be assumed.

4.2.2.5 Non clinical population

The decision to recruit from the general population was based on the paucity of previous research, which meant that the proposed relationships were restricted to theoretical supposition. The study was restricted by a short time frame, which demanded a realistic timetable for data collection be balanced with the need for a large sample to answer the proposed research questions. Within this time limit it was unlikely that a similarly large clinical sample could have been recruited. The present findings are based on data collected from a non clinical sample and it should not be assumed that findings reflect the experience of individuals with a clinically diagnosed eating disorder. Interpretation of the findings cannot therefore be directly extended to the clinical population.

Attempts to explore eating disorder psychopathology in normal compared to clinical populations suggest that elements of the disorder may be best understood as existing on a continuum (Dancyger & Garfinkle, 1995; Gleaves et al., 2004; Gleaves et al., 2000; Lowe et al., 1996; Miller et al., 2009). This perspective suggests that features of eating disorders may reflect a linear relationship between non clinical thoughts and behaviours, and clinically severe symptoms (Gleaves et al., 2004; Gleaves et al., 2000; Lowe et al., 1996). Consistent support for some form of continuum model for eating disorders would suggest that symptoms observed in the normal population may relate to clinical samples. This provides some justification for tentatively extending the implications from the current study to inform wider eating disorder theory.

In the present sample 5% (N= 9) reported rates of eating disorder psychopathology considered clinically relevant; a proportion that reflects findings in other community samples (Luce et al, 2008; Mond et al, 2006). The small number of

individuals reporting symptoms in the clinical range prevented comparable analysis with the wider sample; however observation of average scores was achieved. There were large differences in totals across research variables compared to those observed in the wider sample. On average individuals who reported clinically significant eating disorder symptoms reported much lower levels of self-compassion and much higher levels of clinical perfectionism and self-criticism compared to the means of the wider sample. These observations appear to follow the patterns observed across the sample, which suggest that higher rates of eating disorder psychopathology were associated with lower rates of self-compassion and higher rates of self-criticism and clinical perfectionism. The range of reported scores was smaller suggesting closer trends in the rates of self-compassion, self-criticism and clinical perfectionism reported by the clinically relevant eating disorder group. This may suggest some level of consistency in the characteristics of the clinical sub sample despite the small number of individuals. Observation of the scores reported by individuals who exceeded the clinical cut offs for the EDE, appear to suggest differences between this group and the wider sample. It seems that the associations evidenced in the results are replicated in this sub sample. This is restricted to a small number of only 9 participants however, the observations offer some very tentative indication that the findings might translate to clinically relevant populations.

The current study employed a tool for assessing eating disorder psychopathology that is widely used for the identification of clinical cases and is considered to represent the 'gold standard' for assessing eating disorders (Luce et al., 2008; Wilson, 1993; Mond et al., 2004). The use of a robust and well validated measure of eating disorder psychopathology provides further justification for tentative comment about the value of findings in clinical samples.

4.2.2.6 Response rate

Overall the response rate of 7% for the current study was low. However, in comparison to internet based studies that adopted a similar approach to contacting potential participants, this rate can be considered comparable (Fricker & Schonlau, 2002; Hewson, Yule, Laurent &Vogel, 2003). In a review of internet research it is clear that higher response rates are associated with targeted sampling in which individuals are specifically selected based on their potential interest in the study content (Fricker & Schonlau, 2002). In the current study the exploratory aims provided no justification for targeting a specific population. It is possible that the choice of online recruitment was a factor associated with low response rates. It has been suggested that online recruitment may lead to coverage error and sampling bias due to the reliance on technology that may not be accessible for all (Fricker & Schonlau; Hewson et al., 2003). This issue is likely to have been overcome in the present study as recruitment through the University ensured that all participants would have had access to the resources needed to complete the study. Authors advising researchers working with this method of data collection suggest that questionnaire length and the sensitivity of content have an impact on participation and drop out rates (Knapp & Heidingsfelder, 2001). It is possible that the content relating to eating psychopathology and the length of questionnaires (45 minutes) may have been influential in the present study. It is possible that this may have been the case regardless of the way in which questionnaires were accessed. It has also been argued however that individuals may have the capacity to be more open and honest due to the lack of contact with researchers (Hewson et al., 2003).

An internet based study was appropriate as it allowed complete anonymity when exploring potentially sensitive issues with minimal inconvenience to the participant in terms of time and ease of completion. Access through the internet

provided a broad population equal opportunity to take part in the study allowing the researcher to access a large sample with relatively low financial implications. It is possible however that despite the benefits, this approach may have contributed to low response rates.

4.2.2.7 Missing data

The nature of the data collection makes it impossible to comment on those individuals who showed an interest in the study, but chose not to participate. In line with the information sheet and described nature of participation, any individual who did not complete the full battery of measures was assumed to have chosen to leave the study, and as such their data were excluded from the analysis. In line with ethical requirements this procedure was necessary to establish a clear route through which the individuals' right to leave the study could be maintained. Of those who visited the site and showed an interest in the study, 81 people chose not to complete the battery of measures. Given the lack of participant contact it is difficult to draw conclusions about those who chose not to participate.

As understood in the conventional sense, there were no missing data from the current study. This reflects the nature of participation described above, but also the collection of data online. Participants were required to provide an answer to all questions to allow them to progress through the battery of questionnaires. This meant that those who chose to participate in the study returned full data sets. This is a clear advantage of online data collection, which ensured that meaningful results were obtained for every participant.

4.2.3 Measures

The data used in the current study relied on self-report measures which have inherent limitations that should be recognised when interpreting findings (Dodorico McDonald, 2008; Paulhus & Vazire, 2007). The completion of such scales assumes that participants complete them as intended (Paulhus & Vazire, 2007). The internet based approach employed in the present study limited the opportunity for participants to ask specific questions. Although clear instructions were provided for the completion of each measure, this represents a possible source of bias. The web based approach was appropriate given its ease of use for participants and its ability to ensure complete anonymity, both of which were of central importance when exploring a potentially sensitive issue.

4.2.3.1 Response bias

The measures rely on completion at one time point which leaves them open to response bias. The issue of social desirability is one example of potential bias, in which individuals may be inclined to minimise undesirable qualities and over report positive ones (Paulhus & Vazire, 2007; Van de Mortel, 2008). The current study collected data through a secure internet site which allowed complete anonymity. Such an approach is likely to minimise bias caused by social desirability as there is no contact between the participant and researcher. Similarly this method of data collection is likely to reduce the chance of participants responding in a way that is desirable for the researcher (Paulhus & Vazire, 2007). In the present study there was likely to be little motivation to respond in a socially desirable way.

4.2.3.2 Richness of data collected

A reliance on self-report measures restricts the richness of data collected as it depends on likert scale ratings of experiences with limited flexibility (Dodorico McDonald, 2008; Paulhus & Vazire, 2007). To date there are limited tools available to

measure central constructs under investigation in the current study (e.g. self-compassion). The collection of qualitative data alongside this method could have provided more indepth information, which may have been useful in understanding the nature of the complex relationships identified (Dodorico McDonald, 2008). The use of semi-structured interviews represents one possible methodological solution to this issue. The current study had restricted resources and such an approach would have had a significant impact on the time required for data collection. When this is considered in light of the increased demand on participants, this type of approach is likely to have limited the size of the recruited sample. Given that the aim of the current research was to conduct a preliminary investigation of theorised relationships, reliance on quantitative data was appropriate within the practical limitations. Further research including a mixed method approach may provide additional information of particular value given the complexity of the variables under investigation (Dodorico McDonald, 2008).

4.2.4 evaluation of self-report measures

The measures included in the research were identified based on their previous use with similar populations, their commonality of use in the wider literature, their individual construct validity and internal consistency. A brief review of the strengths and limitations of each measure will be discussed in turn.

4.2.4.1 Eating Disorder Examination Questionnaire Form (Fairburn & Beglin, 1994)

The EDE-Q was chosen as the most appropriate measure of eating disorder psychopathology as it is based on the EDE diagnostic interview, which is considered to be the 'gold standard' for the assessment of eating disorders (Luce et al, 2008; Wilson, 1993). As it was initially developed to identify clinical cases (Fairburn &

Beglin, 1994), it is possible that a measure of this type may be less sensitive to differences in the non clinical population. However, the scale has been used successfully with non clinical samples indicating the appropriateness of its use (Luce et al., 2008; Mond et al., 2004).

4.2.4.2 Self-compassion scale (SCS; Neff, 2003b)

To date the SCS remains the only scale that attempts to provide an overall measure of self-compassion. It has been used extensively in previous research to measure the concept of self-compassion defined by Neff (Neff, 2003b; Neff et al., 2005; Neff et al., 2007a; Neff et al., 2007b; Neff et al., 2008; Neff & Vonk, 2009). Work exploring the concept is largely restricted to a small number of authors and research groups, further studies will be of value to confirm the validity of the scale and concept. The measure developed by Neff (2003b) is based on a definition of self-compassion taken from the Buddhist tradition and does not reflect a defined psychological model. Work by Gilbert (2005; 2009) has proposed a more clinically based understanding of self directed compassion. This perspective may be of particular interest to the current area of study due to the understanding it proposes with regards to the maintenance of mental health problems. To date alternative attempts to measure self directed compassion have relied on more qualitative reports (Gilbert & Irons, 2004; Gilbert & Proctor, 2006; Mayhew & Gilbert, 2008). A scale reflecting individual's reaction towards the self has been proposed, which seeks to measure self-reassurance as a component (Gilbert et al., 2004). This is more in line with Gilbert's (2005) theoretical model of self directed compassion, but generation of the scale was based in clinical experience limiting its possible validity. Preliminary investigation established some psychometric data with a female sample, which to date has not been replicated (Gilbert et al., 2004). To date there have been a limited number of studies using the scale with clinical and general populations (Gilbert & Proctor, 2006; Irons et al., 2006; Mayhew & Gilbert, 2008). Further work to establish the psychometric properties of the

measure will be of particular value. The self-kindness subscale within the SCS measures a concept akin to Gilbert's (2009) definition and as such, use of the SCS is likely to provide some useful insights. With these restrictions in mind, the SCS remains an appropriate measure given its value in establishing a global score for the capacity to be compassionate towards the self and the exploratory aims of the study.

4.2.4.3 Depressive Experiences Questionnaire ([DEQ]; Blatt et al., 1976)

The DEQ was used to measure rates of self-criticism by isolating a specific subscale of the questionnaire. The DEQ is widely used as a valid and reliable measure of self-criticism (eg. Cox et al., 2000; Neff, 2003b; Priel & Besser, 2000; Rector et al, 2000; Zuroff et al., 1990). The long form has been identified as the more robust measure and was therefore chosen for inclusion over the shortened version (Priel & Besser, 2000). The DEQ provides a measure of the individual's tendency for self-criticism. This approach to measurement represents one perspective on the nature of self-criticism. It has been argued that self-criticism represents a more complex construct (Gilbert et al., 2004; Irons et al., 2006; Thompson & Zuroff, 2004). It has been suggested that self-criticism may take different forms (Thompson & Zuroff, 2004) Gilbert and colleagues have gone on to argue that self-criticism is better understood in terms of forms (self hatred and a focus on inadequacies) and functions (to improve or punish the self; Gilbert et al., 2004). Given the relationships identified with self-criticism in the present study, measurement that allows more complex understanding of the components of the construct may be valuable in further research. This would allow additional conclusions to be drawn regarding the nature of the associations identified. Further analysis regarding the key components in the relationship with eating disorder psychopathology may be of particular value in exploring the potential role of self-criticism in maintaining the disorder. To date empirical use of the scale developed by Gilbert et al. (2004) remains limited and further research is needed to establish its psychometric properties. The findings of the

present study provide justification for further exploration given the identification of relationships.

4.2.4.4 The Centre for Epidemiological Studies Depression Scale (CES-D; Radloff, 1977)

The CES-D was used as a measure of mood in the current study. The scale was chosen as it was developed for use in a non clinical population (Radloff, 1977). It has been used extensively across the literature (eg. Clark, et al 2002; Husaini et al., 2006 Orme et al., 2006), including studies exploring related constructs such as self-criticism (Gilbert et al., 2004; Irons et al., 2006). For the current study it was necessary to select a measure that could be reproduced and accessed online. The CES-D represents one of the most commonly used and well validated scales that can be freely reproduced. Evidence suggests that the scale correlates highly with more commonly used measures including the BDI, indicating the validity of its use (Geisser & Roth, 1997; Wilcox et al., 1998; Zich, et al., 1990).

The aim of the current study was to explore the relationship between self-compassion, eating disorder psychopathology and related variables. To the author's knowledge the research represents the first attempt to investigate these relationships and as such the nature of the study was exploratory. In light of the study design, there are a number of limitations that should be considered when interpreting findings. The considerations outlined provide a context for discussion of the results and their contribution to the wider literature.

4.3 Overview of results in relation to the proposed research questions and previous research findings

In the following section the findings of the current study will be discussed in relation to the research questions posed. The results will be outlined and the relationship to previous studies considered. In particular the extent to which the findings support or contradict conclusions drawn from previous research will be addressed.

4.3.1 Research question 1

What relationships exist between eating disorder psychopathology, clinical perfectionism, self-criticism and an individual's capacity to be self-compassionate?

4.3.1.1 Eating disorder psychopathology

The correlational analysis identified significant positive relationships between eating disorder psychopathology, clinical perfectionism and self-criticism. The inverse was observed with self-compassion, with which a significant negative relationship was observed with eating disorder psychopathology.

The observed relationship between eating disorder psychopathology and clinical perfectionism ($r = .40$, $p < .001$) supports the wider trend evidenced in the literature (Bulik et al., 2003; Fairburn et al., 2008; Fairburn et al., 1999; Shafran et al., 2002). This finding has been well established in clinical populations, in which it is thought to form a central part of the psychopathology for a proportion of sufferers (Bulik et al., 2003; Fairburn et al., 2008). Replication of this association adds to the evidence indicating a positive relationship between the constructs and the importance of clinical perfectionism in eating disorder psychopathology.

The association between self-criticism and eating disorder psychopathology ($r = .41$, $p < .001$) replicates previous findings indicating a positive relationship between the constructs (Dunkley & Grilo, 2007; Dunkley et al., 2006 Fairburn et al., 2003). In the current study eating disorder psychopathology was associated with higher rates of self-criticism. The significant association identified was moderate indicating its relevance as a predictor of eating disorder psychopathology in the present sample. The finding points to the potential value in understanding the nature of its role in eating disorder psychopathology. Previous studies have demonstrated similar relationships (e.g. Dunkley et al., 2006a; Dunkley et al., 2006b) however; the lack of consistency in samples studied limits direct comparison. To date authors have proposed that self-criticism may have a maintenance role for the core psychopathology of eating disorders, although little direct research has been conducted (Fairburn et al., 2003). Current findings cannot draw conclusions about causation, but the degree of association identified confirms the potential importance of the construct and adds support to the need for greater attention to the role of self-criticism in eating disorder psychopathology.

The results showed a significant negative relationship between eating disorder psychopathology and self-compassion ($r = -.35$, $p < .001$). To date previous research has not explored this association. Self-compassion has been found to be negatively associated with other psychopathology including depression (Neff, 2003b), anxiety (Neff, 2003b; Neff et al., 2005) and post traumatic stress disorder (Thompson & Waltz, 2008). The relationships with depression and anxiety found with non clinical samples indicate comparable associations. The current findings add support to the limited evidence indicating a negative relationship between self-compassion and reported rates of psychological disorders. Authors theorise that this observed relationship may be reflective of the improved coping and positive psychological well being observed in

relation to self-compassion, and indicate its value as a protective factor (Neff et al., 2005; Neff et al., 2007a; Neff et al., 2007b). It has been suggested that self-compassionate individuals are less likely to engage in maladaptive patterns of coping such as avoidance, rumination and self-criticism, all of which increase negative affect (Neff, 2003b; Neff et al., 2005; Neff & Vonk, 2009). 2007). This has led authors to conclude that regardless of the situation, meeting difficulties with self-compassion may foster positive affect (Neff et al., 2007a). Researchers suggest that the value of self-compassion as an overarching cognitive factor may be reflected in the inherent avoidance of maladaptive coping strategies such as self-criticism (Neff et al., 2005; Neff et al., 2007a). Findings in the present study add support to this position, with evidence of a particularly large negative relationship between self-compassion and self-criticism ($r = -.81$, $p < .001$). This would suggest that, as identified in previous studies, individuals high in self-compassion are less likely to engage in self-criticism which is suggested to foster negative affect and increase vulnerability to mental health problems (Gilbert 2005; Irons et al., 2006).

In the present sample, lower levels of self-compassion predicted higher rates of eating disorder psychopathology. It cannot be assumed that this finding can be directly generalised to the clinical population, however it provides valuable evidence for the potential importance of self-compassion in eating disorder psychopathology. Authors suggest that such relationships indicate the potential protective value of self-compassion against the development of mental health problems (Neff, 2003b; Neff et al., 2005; Neff et al., 2007a). Whilst evidence is restricted to the identification of relationships, conclusions about the protective role of self-compassion remain limited and largely theoretical. The findings in the current study are the first to identify a relationship between the capacity to be compassionate towards the self and eating disorder psychopathology. The relationship identified suggested a negative association that has not to date been recognised in this area. Given the paucity of

research exploring the link between self-compassion and eating disorder psychopathology, the present findings are of value. The significant association identified was moderate (r= -.35, p<.001) indicating the importance of recognising the value of self-compassion as a predictor of rates of eating disorder psychopathology in the current sample. The findings appear to support previous studies conducted with non clinical samples that have suggested that the capacity to direct feelings of care towards the self predicts psychopathology (Gilbert et al., 2006; Irons et al., 2006). In particular authors with an interest in mental health have highlighted the potential of low self-compassion to increase vulnerability (Gilbert, 2010; Gilbert & Irons 2004; Irons et al., 2006; Mills et al., 2007). Models based on this evidence also describe the inability to be self-compassionate as a continuing maintaining factor reinforcing psychopathology (Gilbert, 2005; 2010). Given the degree of association identified, there is value in further research to consider the potential role of self-compassion in understanding eating disorder psychopathology. Additional investigation, particularly considering the role of low self-compassion as a vulnerability factor, may be of value in highlighting its relevance in the disorder.

4.3.2 Clinical perfectionism

The significant positive relationship identified between self-criticism and clinical perfectionism confirms previous research indicating its importance in understanding perfectionism (Dunkley et al., 2006a; Frost et al., 1990; Shafran et al., 2003). Theoretical understanding of clinical perfectionism suggests that it is self-criticism itself which makes perfectionism potentially 'toxic' and clinically relevant (Alden et al., 2002; Dunkley et al., 2003; Dunkley et al., 2006b). The strength and direction of the relationship observed (r= .66, p<.001) would support this, suggesting that clinical perfectionism did predict higher rates of self-criticism in the present sample.

A similarly large, but inverse relationship was established between self-compassion and clinical perfectionism. This relationship has received limited attention in the self-compassion literature and the current research represents only the second to identify such an association. In development of the SCS, Neff (2003b) identified a negative association between self-compassion and clinical perfectionism. This association was examined along with other concepts to confirm the validity of the SCS. There was no direct interpretation of the broader value of the relationship with clinical perfectionism, and this did not form part of Neff's (2003b) aims. The large association identified in the present study ($r = -.60$, $p < .001$) would suggest that self-compassion may offer an important contribution to current understanding of clinical perfectionism.

Theoretically this relationship has received little attention, but given the relevance of self-criticism in the maintenance of clinical perfectionism (Dunkley et al., 2006a; Dunkley et al., 2006b), it is possible that an opposing construct such as self-compassion would adopt the inverse position and may possibly represent a protective rather than maintaining role. This argument is offered some support by further findings in the current study which demonstrated a particularly large negative relationship between self-compassion and self-criticism ($r = -.81$, $p < .001$). Identification of this association reflects the findings of previous research (Neff, 2003b). In the current study self-compassion accounted for over 65% of the variance in self-criticism. The size of this negative association would suggest that they may measure opposing constructs, which in the light of the proposed detrimental impact of self-criticism (Alden et al., 2002; Dunkley et al., 2003), offers tentative support to the potential relevance of self-compassion. For clinical perfectionists, the tendency to respond towards the self with harsh self-criticism following a perceived rule break is thought to reinforce the need to adhere to such rules (Dunkley et al., 2006a). The kinder caring response to the self observed in relation to self-compassion however, is thought to be

valuable in coping with perceived failure and reducing negative affect (Leary et al., 2007; Neff et al., 2005). The current findings suggest the potential significance of exploring the role of self-compassion in clinical perfectionism. In particular, the negative relationship between the constructs may indicate the potential importance of investigating the impact of a lack of self-compassion in clinical perfectionism. To date research is limited, but the strong predictive nature of the relationship with clinical perfectionism may highlight self-compassion as a protective factor. The current study is limited by the design and questions regarding this can be posed, but not answered.

The associations between eating disorder psychopathology, self-criticism and clinical perfectionism add to the findings of previous studies. The present research represents one of the first attempts to explore the relationship between self-compassion, eating disorder psychopathology and clinical perfectionism. In the present sample individuals with high levels of self-compassion were likely to report lower levels of eating disorder psychopathology and clinical perfectionism. Similarly such individuals were less self-critical and high levels of self-criticism have been related to poorer mental health (Coyne & Whiffen, 1995; Gilbert & Irons, 2004; Gilbert et al., 2006; Irons et al., 2006). The relationships identified demonstrate the potential importance of self-compassion in eating disorder psychopathology and related constructs.

4.3.2 Research question 2

Do the identified relationships remain after related variables are controlled for?

4.3.2.1 Eating disorder psychopathology

It was predicted that the observed relationships between self-compassion and eating disorder psychopathology ($r = -.35$, $p < .001$) would remain when the effect of

mood was held constant. Partial correlational analysis failed to confirm this hypothesis ($r = -.06$, $p > .22$) with results indicating that mood provided a better explanation of the relationship observed between the variables. Previous self-compassion research has demonstrated a significant negative relationship with mood (Neff, 2003b). Studies looking at related aspects such as self-reassurance, have also identified a negative association with depression (Gilbert et al., 2006; Irons et al., 2006). The present results support these previous findings suggesting the importance of self-compassion in predicting low mood. Further partial correlational analysis was conducted to determine whether mood better explained the observed relationships between self-compassion and other research variables. Findings suggested that mood made a contribution to the relationships between self-compassion and clinical perfectionism, and the association between self-compassion and self-criticism. The findings add further support the wider literature indicating the strength of association between mood and the capacity to direct compassion towards the self (Gilbert et al., 2006; Irons et al., 2006; Neff, 2003b). The results would suggest however that although relevant, mood does not fully explain the observed relationships. This indicates that self-compassion explains unique variance in self-criticism and clinical perfectionism. It is possible that the relevance of low self-compassion in relation to eating disorder psychopathology may only be influential when low mood is present. Co-morbid mental health problems are common in eating disorders, with depression highlighted as a particular issue (Berkman et al., 2007; Klump et al., 2009). The findings of the current study may suggest that self-compassion may be important when depression is a concurrent problem. It appears that whilst the relationships between self-compassion, clinical perfectionism and self-criticism may be influenced by mood, the potential importance of self-compassion in understanding the variables remains relevant.

It would appear that the relationship between self-compassion and eating disorder psychopathology is not direct, but is influenced by additional factors. Partial

correlation analysis suggests that clinical perfectionism and mood may be influential in the relationship between self-compassion and eating disorders. Results suggest that the observed association is only relevant when mood is present as an interacting factor. Clinical perfectionism also appears to represent an influential factor that explains a proportion of the relationship between eating disorder psychopathology and self-compassion. Both clinical perfectionism (Bardone-Cone, et al., 2007) and mood (Berkman, et al., 2007) have been identified as co-morbid difficulties associated with clinical eating disorders. It is possible that the relevance of self-compassion may be important to recognise when eating disorder psychopathology is associated with low mood or clinical perfectionism.

4.3.2.2 Clinical perfectionism

The inverse relationship between self-compassion and clinical perfectionism was found to be substantial ($r = -.60$, $p < .001$). When the influence of self-criticism was held constant the relationship was substantially reduced, but remained significant ($r = -.17$, $p < .001$). The reduction in the size of the association would be expected given the strength of the relationship between self-criticism and self-compassion ($r = -.81$, $p < .001$; Besley et al., 2004). This would suggest that self-criticism is likely to account for a proportion of the shared variance, but that self-compassion remains a significant predictor for clinical perfectionism. This provides support for the importance of self-criticism in clinical perfectionism determined previously (Alden et al., 2002; Dunkley et al., 2006a; Frost et al., 1990). Above this, it appears that the relationship between clinical perfectionism and self-compassion cannot be explained by self-criticism alone. This finding is particularly pertinent given the large association between self-compassion and self-criticism. Despite the relationship between the two variables, it would appear that self-compassion accounts for unique variance and should be recognised as a potentially important factor in understanding clinical perfectionism. The finding that self-compassion explains additional variance alongside that

accounted for by self-criticism is valuable. It may suggest that there are two pathways to be explored when considering the maintenance role of self-criticism in clinical perfectionism. The findings would suggest that a lack of self-compassion and the tendency to be self-critical have combined importance: A finding that echoes the conclusions of similar investigations with other populations (Irons et al., 2006; Mills et al., 2007). It is possible that as has been proposed by Gilbert (2005; 2009), it is the lack of self-compassion as well as the tendency to be self-critical that is influential in the maintenance of psychopathology. Research into self-compassion suggests that self-compassionate individuals cope with perceived failure in ways that minimise associated negative affect, whilst those who lack self-compassion may engage in maladaptive coping such as self-criticism (Leary et al., 2007; Neff et al., 2005). This is of particular interest in light of research in clinical perfectionism highlighting self-criticism as the central pathological issue (Dunkley & Grilo, 2007; Dunkley et al., 2006a; Dunkley et al., 2006b). Given the value placed on achieving adherence to strict rules observed in clinical perfectionism (Shafran et al., 2002), it is possible that an inability to respond to the self compassionately contributed to its continued maintenance. Evidence from the current study represents the first attempt to explore the relationship between clinical perfectionism, self-criticism and self-compassion in any depth. Although they remain exploratory, the findings of the partial correlation analysis would suggest that both self-criticism and self-compassion make unique contributions to clinical perfectionism. This suggestion of a dual pathway to perfectionism remains hypothetical, but may be of particular interest to eating disorders given the role of clinical perfectionism as a maintaining factor (Fairburn et al., 2003; Shafran et al., 2002), and a feature associated with poorer treatment outcomes (Bardone-Cone et al., 2007; Fairburn et al., 2009). There is evidence to suggest the potential importance of recognising the relevance of both self-criticism and low self-compassion to current understanding of clinical perfectionism.

The findings from the partial correlation analyses suggest that the relationship between eating disorder psychopathology and self-compassion is not direct, but that interacting factors may be influential. Further evidence looking at clinical perfectionism appears to indicate the importance of self-compassion as a unique predictive factor. It is possible that this relationship is similarly influenced by the tendency to be self critical. Current findings may suggest the need to consider lack of self-compassion as an additional factor maintaining clinical perfectionism. Clinical perfectionism is thought to be a common feature of eating disorders (Bulik et al., 2007). Investigating the role of self-compassion may be of particular importance in relevant cases.

4.3.3 Research question 3

The inclusion of variables to develop a predictive model for eating disorder psychopathology

A regression analysis was applied in an attempt to explain the relative contribution of each construct to eating disorder psychopathology. All additional variables were included as possible predictors of eating disorder psychopathology. The significant regression model identified violated the assumptions of multcollinearity. This reflects the large correlations between the predictor variables (Tabachnick & Fidel, 2001). It suggests that the group of predictors were not sufficiently independent and likely to account for a shared proportion of the variance in rates of eating disorder psychopathology. The resulting model was biased and cannot be generalised to predict eating disorder psychopathology in any wider populations (Field, 2009).

The model accounted for 24.5% of the variance within eating disorder psychopathology and holds some predictive value within the sample. It is prudent to recognise that the large correlations between the predictor variables make the

contribution of each less clear, and demand caution in interpretation (Besley et al., 2004; Cohen, 2003; Tabachnick & Fidel, 2001). When the influence of other predictors was held constant, both clinical perfectionism and mood made small but significant contributions. The model suggested that self-compassion and self-criticism did not make significant contributions to the predictive power of the model. Previous researchers have applied a similar modeling approach establishing the importance of self-criticism and the ability to reassure the self as unique predictors of psychopathology (Irons et al., 2006; Mills et al., 2007). The current analysis did not replicate these findings with regards to eating disorders. It would appear that neither self-compassion nor self-criticism explain any unique variance and do not represent meaningful predictors for eating disorder psychopathology. However, it is possible that their relative contribution in the model was masked by the strength of relationships with other predictor variables (Besley et al., 2004; Cohen, 2003).

A standard method of multiple regression was applied to the data. Authors recommend that where there is no existing theoretical model, a standard method is most appropriate (Field, 2009; Tabachnick & Fidell, 2001). Similarly it is suggested that a standard approach is useful when there is limited research to directly inform the entry of all possible predictors (Tabachnick & Fidel, 2001). This method retains predictors based on their unique contribution after overlap with other variables is removed. In the current model both self-compassion and self-criticism had substantial correlations with mood and clinical perfectionism. In such cases it is suggested that the statistical contribution of predictors is likely to appear greatly reduced or redundant (Tabachnick & Fidell, 2001). The relationships identified in the current study suggest that the high degree of association may be indicative of the measures tapping overlapping constructs (Tabachnick & Fidel, 2001). When viewed in light of the strength of individual correlations between research variables, it seems likely that within a regression model the contribution of self-compassion and self-criticism would

not appear unique (Healey et al., 2004). It is possible that this is because they represent strong predictors of the other variables and of each other.

Authors have suggested that correlations between predictors above .7 should be excluded from regression models due to the likelihood of skewing the apparent contribution of each (Tachnick & Fidell, 2001). In the current model this would have included self-criticism, self-compassion and mood. Given the lack of previous research it was difficult to justify the exclusion of any variable from the model. The lack of existing theory and exploratory nature of the study necessitated the investigation of all variables. Regression models are thought to be most useful when all predictors are related to the outcome variable, but not to each other (Zou, Tuncali & Silverman, 2003). Due to the complexity of constructs associated with mental health problems such as eating disorder psychopathology, this is likely to be more difficult to achieve. In such cases overlap between variables of interest may be largely inevitable.

The regression analysis represented an attempt to shed light on the nature of the relationships between self-compassion, self-criticism, clinical perfectionism and mood, based on their unique contribution to prediction of eating disorder psychopathology. The strength of the relationships between the predictor variables made the resulting model difficult to interpret. In particular it suggested that self-compassion and self-criticism did not contribute to the model. This was at odds with previous research indicating the importance of these constructs in predicting psychopathology (Irons et al., 2006; Mills et al., 2007) However, in the present study it is likely that the overlap in relationships with other variables may have masked their actual contribution. Self-compassion and self-criticism have been identified as constructs involved in self-evaluation and coping with experiences (Neff et al., 2005; Neff et al., 2007a; Dunkley et al., 2003). It is thought that self-compassion may reflect

a cognitive factor that colours the way in which individuals make sense of experiences and respond to the self (Neff, 2003a; Neff 2003b). Similarly self-criticism is understood as a cognitive reaction towards the self (Blatt, 2004; Gilbert, 2005; Gilbert & Irons, 2005). Overarching constructs such as these are likely to influence broad aspects of experience. Previous research suggests that self-compassion relates closely to multiple constructs of psychological well being (Neff et al., 2007a) and positive mental health (Neff, 2003b), whilst self-criticism has been identified as influential in maintaining mental health problems (Alden et al., 2002; Cooper, 2005; Gilbert & Irons, 2004). The SCS and DEQ employed in the current study attempt to tap the individuals' overall tendency for self-compassion and self-criticism. It is possible that measurement of constructs that reflect responses to the self may account for similar variance in rates of mental health psychopathology. It is possible that self-compassion and self-criticism reflect similar constructs to mood and clinical perfectionism within eating disorder psychopathology, and may account for similar variance because of this. It is possible that the contribution becomes masked by the overlap with related variables.

4.3.4 Further exploratory analysis

The degree of association between the variables under investigation suggested that the constructs being measured may have some shared elements. The substantial relationships between research variables had the potential to mask interesting information relating to the detail of the associations. Given the paucity of previous research, the current investigation was particularly interested in the contribution of self-compassion. In an attempt to better understand the relevance of self-compassion to the observed relationships further analysis was undertaken using the subscale components. The intention was to provide a clearer sense of the contribution of aspects of self-compassion in the observed relationships. Repeated

correlational analysis carried the risk of accumulative error, which can affect the reliability of results. In an attempt to avoid this, further analysis was kept to a minimum and restricted to examination of the subscales based on Neff's (2003b) three factor definition.

As expected, relationships identified between the three components of self-compassion and other variables followed the negative relational trends observed in the previous analysis. Of the three components, the degree of relationship with self-kindness was consistently largest (eating disorder psychopathology, r= -.34, p<.001; clinical perfectionism, r= -.42, p<.001; self-criticism, r= -.67, p<.001). This pattern of inverse associations was reproduced for the common humanity sub-scale, but to a lesser degree (eating disorder psychopathology, r= -.26, p<.001; clinical perfectionism, r= -.40, p<.001; self-criticism, r= -.58, p<.001). Similarly negative relationships were identified between mindful acceptance and all aspects of psychopathology, however the degree of association was consistently smaller than those observed with self-kindness (eating disorder psychopathology, r= -.30, p<.001; clinical perfectionism, r= -.39, p<.001; self-criticism, r= -.63, p<.001). Although the differences between the relationships are small, the consistency of self-kindness accounting for the largest variance in research variables is worthy of attention. This finding fits with the view of self-directed compassion extolled by Gilbert and colleagues who suggest that it is an individuals capacity to meet their experience with warmth and kindness that is central to it transformative power (Gilbert, 2005; Gilbert & Irons, 2004; Gilbert & Proctor, 2006). Gilbert et al. (2004) have measured the concept in a different way, but current findings appear to echo the importance of self directed kindness. They suggest that a lack of self-kindness may reflect a deeper inability to project feelings of warmth towards the self and that this leaves individuals vulnerable to mental health problems. Gilbert et al. (2004) found that the ability to reassure the self was negatively related to depression. The results of the current study similarly

indicate that individuals with lower levels of self-kindness had higher rates of depression and eating disorder psychopathology offering some support to Gilbert's hypothesis (2005). The present study would suggest that all aspects of self-compassion are predictors of measured constructs of psychopathology in the sample, but that the capacity to direct kindness towards the self may be of particular importance. It is possible that self-kindness may represent an important protective factor. Neff (2003b) has discussed the value of self-compassion in the face of negative affect and its protective function in the development of mental health problems. The current study may offer support to Gilbert's (2005; 2009) proposition that it is the ability to direct kindness and warmth towards the self that is of particular value in this process. From the present study further conclusions about causation cannot be offered and it remains unclear to what extent each factor makes a unique contribution to the observed relationships. It appears that a lack of self-kindness may be an important factor in understanding both eating disorder psychopathology and clinical perfection.

Additional analysis was undertaken after the complexity of the identified relationships became clear. The relationships identified between the components of self-compassion, eating disorder psychopathology, clinical perfectionism and self-criticism were all significant and negative. Across the correlations the degree of the association between the three research variables and self-kindness was the largest. This may indicate that individuals lower in self-kindness in particular may be more vulnerable to mental health problems. This finding adds support to previous research indicating the potential value of self directed warmth and kindness in the face of mental health problems (Gilbert & Irons, 2004; Gilbert et al., 2004; Gilbert et al., 2006; Gilbert & Proctor, 2006).

.

4.4 Theoretical implications

The findings of the current study suggest strong negative relationships between self-compassion and variables related to eating disorder psychopathology. The positive association between eating disorder psychopathology, self-criticism and clinical perfectionism add to the current literature identifying the importance of a self critical approach and perfectionistic traits in the eating disorders (Dunkley et al., 2003; Dunkley et al., 2006a; Shafran et al., 2002). These exploratory findings also provide support for broader research that has led authors to speculate about the protective value of self-compassion in the face of mental health problems (Neff, 2003b; Neff et al., 2005; Thompson & Waltz, 2009). The strength of associations between the variables measured suggests that the constructs overlap to create considerable complexity when viewed collectively. This made it difficult to draw conclusions about the unique contribution of self-compassion and self-criticism as predictors of eating disorder psychopathology. The results of the analysis suggest that the relationship between self-compassion and eating disorder psychopathology is not direct, but is influenced by mood and clinical perfectionism. It would appear however, that both self-compassion and self-criticism may be important in understanding clinical perfectionism. Interpretation of the findings is restricted to comment on relationships and further conclusions about causation cannot be drawn. The current research represents a preliminary exploration of constructs conducted with a non clinical sample; assumptions about generalisability to clinical samples are therefore restricted. However, continuum models for eating disorders (Gleaves et al., 2004; Gleaves et al., 2000; Lowe et al., 1996; Miller et al., 2009) offer some justification for speculation about the relevance of findings to clinical eating disorders. In the context of these limitations, the following section will draw on the findings to propose possible indications for existing theory.

4.4.1 The maintenance of eating disorder psychopathology

In the present study those with higher levels of eating disorder psychopathology were also likely to report higher levels of both self-criticism and clinical perfectionism. Clinical perfectionism represented an interacting factor in the observed relationship between self-compassion and eating disorder psychopathology. When present, clinical perfectionism is understood as a maintaining factor in eating disorders (Shafran et al., 2002) and is thought to directly reinforce the central psychopathology (Fairburn, et al., 2003). Self-criticism is noted as a further potential maintaining factor, but to date does not form a central component of maintenance models of eating disorder psychopathology (Fairburn, et al., 2003). In research exploring clinical perfectionism, self-criticism is understood as serving a central role in reinforcing the value of adhering to strict rules (Alden et al., 2002; Dunkley et al., 2003; Dunkley et al., 2006a; Shafran et al., 2002). Dietary control is highly valued by eating disorder sufferers, for whom this forms the central source of self evaluation (Cooper & Shafran, 2008; Fairburn et al., 2003). Authors believe that self attacking following any dietary rule break directly reinforces the need for strict control and central shape and weight concerns (Fairburn et al., 2003). The current study adds some support to this position having identified positive relationships between self-criticism, clinical perfectionism and eating disorder psychopathology. In addition it was found that those with a greater capacity for self-compassion were less critical of the self and reported lower rates of eating disorder psychopathology and clinical perfectionism. It appears that the relationship between self-compassion and eating disorder psychopathology may be influenced by the presence of clinical perfectionism. A proposed model considering the potential role of these relationships in maintaining clinical perfectionism within eating disorder psychopathology is presented in Figure 3. The proposed links are based on broader theory concerning the nature of perfectionism and eating disorder psychopathology with the addition of present

findings. The hypothesized roles of self-compassion and self-criticism in Figure 3 are proposed in relation to a diagrammatic summary of the transdiagnostic model (Fairburn et al., 2003) and the wider theoretical understanding of self-compassion proposed by Gilbert (2010).

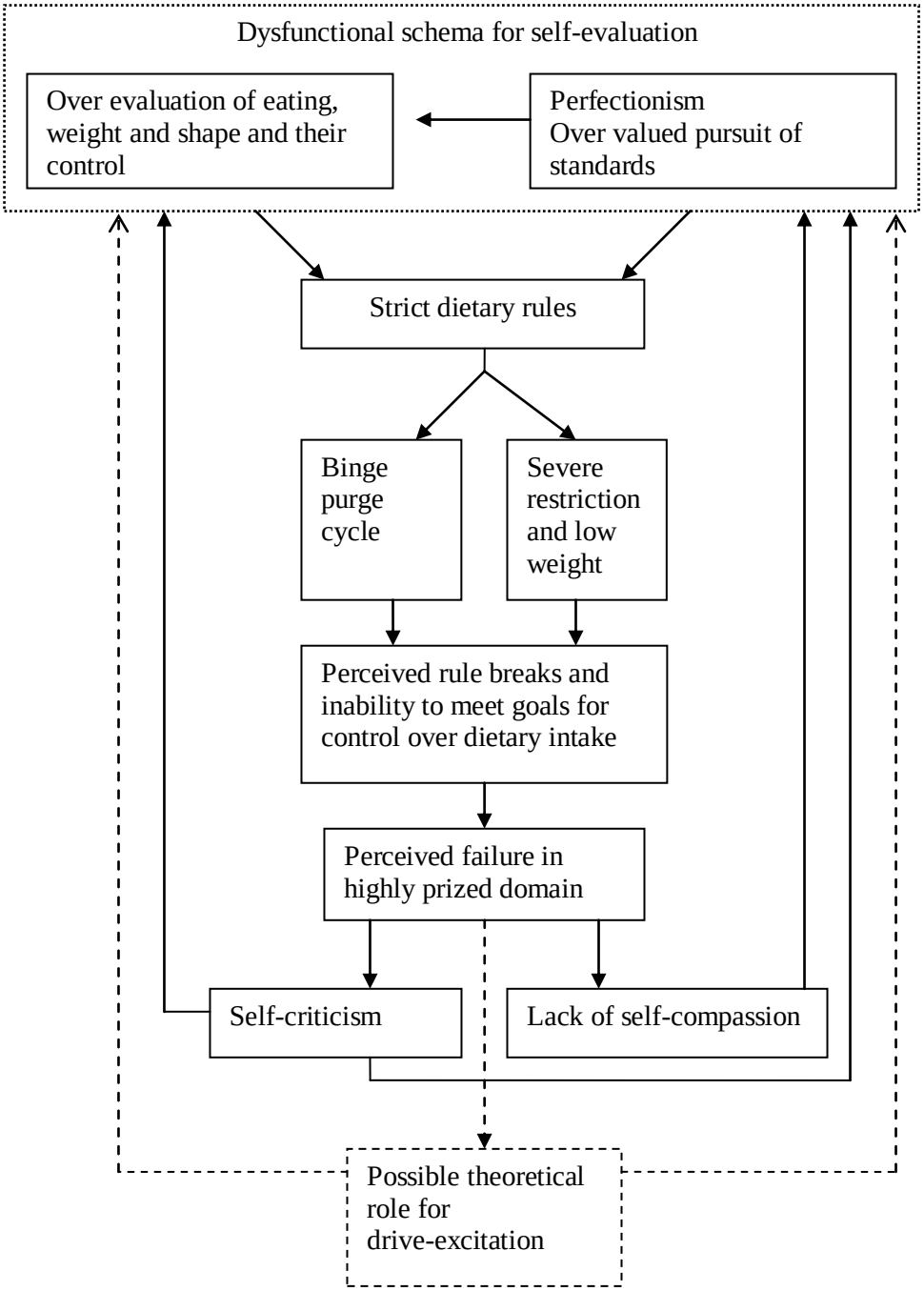


Figure 3. Proposed model for the maintaining role of self-criticism and low self-compassion in clinical perfectionism and wider eating disorders. Model based on current findings, wider theoretical understanding of compassion (Gilbert 2010) and the existing transdiagnostic model of eating disorders (Fairburn et al., 2003).

Results from the present study suggest that low self-compassion and self-criticism predict clinical perfectionism. Self-compassion was found to explain unique variance in clinical perfectionism when the effect of self-criticism was controlled for. Evidence from the current study suggests that whilst there is a particularly strong association between self-criticism and the capacity to be self-compassionate, this relationship is partially explained by other variables indicating that they represent independent constructs (Tabachnick & Fidell, 2001). In light of these tentative findings there is evidence to suggest that both may represent independent predictors of clinical perfectionism. It is possible that self-compassion and self-criticism may both represent factors important in the maintenance of clinical perfectionism. Fairburn et al. (2003) suggest that when present, perfectionism directly maintains core eating disorder psychopathology by reinforcing the value of control over weight and shape. Perfectionism is understood as a further source of self worth defined by the ability to adhere to strict self imposed rules (Fairburn et al., 2003; Shafran et al., 2002). Failure to meet these high standards and strict rules results in the harsh self-criticism thought to represent the damaging element of perfectionism (Alden et al., 2002; Dunkley, et al., 2003). Gilbert (2010) has suggested that when an individual responds to adversity with self-criticism they remain in a threat mode related to anxiety and self-protection. Whilst in this state the individual is motivated to escape the negative emotions and achieve safety (Gilbert, 2010). In the case of perfectionism, the self-attacking or critical response reinforces the need for adherence to the self imposed rules to reduce anxiety and maintain self worth. The current study would suggest that alongside the role of self-criticism in maintaining perfectionism, a lack of self-compassion may represent an additional role. Research indicates that a lack of self-compassion may reflect an inability to direct kind and warm feelings towards the self (Gilbert et al., 2006). It is theorised that this lack of capacity to direct compassion towards the self in the face of adversity may represent reduced development in the physiological systems that promote soothing and feelings of safety (Gilbert, 2009; Gilbert, 2010;

Gilbert & Irons, 2004). Gilbert (2010) suggests that the soothing system is valuable in directly regulating the threat mode by effectively switching it off. It is thought that the lack of capacity to be compassionate towards the self may act as a second pathway reinforcing the psychopathology. In the case of clinical perfectionism, it is possible that where low self-compassion is present, individuals lack the capacity to respond to the self kindly and fail to support the self following a perceived rule break. The individual does not achieve feelings of safety and contentment and the threat system remains active. This reinforces the need for adherence to strict rules to maintain their highly dependent self worth. When broadened to consider how this may translate to perfectionism in an individual with an eating disorder, negative affect and negative feelings towards the self following a rule break are likely to reinforce the over-evaluation of shape and weight and their control due to their value in determining self worth. Adherence to the strict rules for weight and shape may represent the only way to maintain fragile self worth and avoid negative affect. Individuals that are able to use self-compassionate responses to the self are likely to activate an alternative system following perceived failure. Rather than a system associated with threat and attack, directing feelings of warmth and kindness towards the self is thought to activate a system linked to care and soothing (Gilbert, 2010; Longe et al., 2009; Wang, 2005). The result being that this system fosters feelings of safety to transform the negative affect; in sum the individual holds the ability to self-soothe (Gilbert, 2005; Wang, 2005). It has been suggested that such a response fails to reinforce negative underlying beliefs, either directly through the confirmation of negative thoughts, or indirectly through the desire to avoid uncomfortable affect (Gilbert & Irons, 2004).

Gilbert's (2009; 2010) model suggests that the third component involved in the regulation of emotion relates more closely to positive emotions and a sense of achievement in the pursuit of goals. Theoretically it is possible that the drive-excitation system is of relevance to the reinforcement of perfectionism given the

characteristic determined pursuit of self defined goals regardless of consequence (Shafran et al., 2002). The current study did not directly explore this proposition; however it is possible to comment on the potential role of the excitation system in light of the present findings and wider theory proposed by Gilbert (2009; 2010). Evidence from the current study would indicate that perfectionism is associated with low self-compassion and a tendency to engage in self-criticism. Gilbert (2010) suggests that a balance is required between the three regulatory systems and that where one is underactive others may achieve a retrieval advantage. In the case of clinical perfectionists with a limited capacity for self-compassion, the current study would suggest that they may be more likely to engage in self-critical responses to the self. In the context of Gilbert's theory (2009; 2010) this is understood as the over activation of the threat system, but may also potentially involve the drive- excitation system. As this was not directly investigated in the current study its potential role can only be tentatively proposed.

The drive- excitation system is understood as relating to the attainment of goals and associated feelings of happiness that provide an important positive reinforcer for behaviour (Gilbert, 2010). Where the capacity to soothe is underdeveloped, it is possible that attainment of goals provides the only pathway to the emotion regulating system associated with positive feelings. What Gilbert (2010) makes clear is that this system is conditional on achievement which, in the case of perfectionists, may positively reinforce strict adherence to rules. Similarly it may act as a negative reinforcer by allowing avoidance of uncomfortable emotions like anxiety associated with failure and activation of the threat system. The potential role of the drive- excitation system is proposed as a tentative addition to the model presented in Figure 3. When expressed in the context of an eating disorder, it is possible that the excitation system may also be active in providing a positive reinforcement for the control of weight and shape. Where the capacity to soothe and care for the self is

limited the excitation system may provide an important and over relied upon source of positive emotion.

Evidence from the current study suggests that self-criticism and self-compassion may be predictive of clinical perfectionism. Based on this and wider research the proposed theory suggests that self-criticism should be recognised as playing a maintenance role in perfectionism, but that another important factor may relate to a failure in the development of systems that allow kindness and compassion towards the self. From this position a dual pathway for the maintenance of perfectionism, and subsequently eating disorder psychopathology, is hypothesised. The negative associations between self-compassion and perfectionism cannot assume causation, but would suggest that those with higher levels of self-compassion were less likely to report psychopathology. When these findings are viewed within the context of Gilbert's theoretical position, it is possible that in eating disorders a lack of self-compassion may serve a reinforcing role by maintaining perfectionism. Further to this, it may be possible to tentatively suggest that the determined pursuit of rules could be understood in the context of a consequential over reliance on the drive-excitation system as a source of positive emotion. (See Figure 3 for a proposed model including the potential maintaining role for low self-compassion).

It is possible that such an approach may be of value in seeking to better understand perfectionism and its wider influence in eating disorders. To date authors suggest that when present, perfectionism represents a barrier to the treatment of eating disorders (Bardon-Cone et al., 2007; Dunkley et al., 2006a; Fairburn et al., 2003). It has been argued that direct attention to self-criticism may be important in treatment (Dunkley et al., 2006a). The proposed model would suggest that additional attention to low self-compassion may also be prudent. Further research will be needed to investigate this hypothesis.

4.5 Clinical implications

Across the spectrum of mental health problems, eating disorders are associated with some of the longest hospital admissions and the highest mortality rates of all psychiatric disorders (Klump et al., 2009). Research suggests that eating disorders have broad implications for the individual affecting social, psychological and physical functioning (Bulik et al., 2009; Klump et al., 2009). Despite the multifaceted difficulties faced by sufferers, evidence based treatments at best report modest recovery rates (Berkman et al., 2007). In light of this, attempts to increase the effectiveness of interventions have been a priority for those researching treatment approaches (Fairburn et al., 2003; Fairburn et al., 2009). Within this context potential avenues of new interest are of particular value. From the findings of the current study and the proposed theoretical implications, it is possible that self-compassion may represent an area of potential importance. As the present study was conducted with a non clinical population, direct translation of these results to eating disordered populations cannot be assumed. Continuum models for eating disorder psychopathology argue that symptoms are on a trajectory with the normal population (Gleaves et al., 2004; Lowe et al., 1996; Miller et al., 2009), which suggests that tentative proposals about the application of findings can be made. Given the exploratory nature of the study, the clinical relevance of the findings will be discussed within the framework of current and more established approaches.

4.5.1 Potential developments in the treatment of eating disorders

Results of the current study have evidenced a link between eating disorder psychopathology and self-compassion. Although it is clear that this relationship may not be direct and is likely to be influenced by additional factors, the relationship

between self-compassion and clinical perfectionism appears clearer. This relationship remained robust after the effect of the associated construct self-criticism was removed. Both clinical perfectionism (Fairburn et al., 2003) and depression (Berkman et al., 2007) have been associated with poorer treatment outcomes for individuals with eating disorders. In light of the current findings, it has been proposed that low or a lack of self-compassion may represent a maintaining factor reinforcing the value of adherence to strict rules observed in perfectionism; a construct that has been identified as serving a maintenance role in eating disorders (Fairburn et al., 2003).

In their transdiagnostic model of eating disorders, Fairburn et al. (2003) broaden the recommended CBT approach in an attempt to increase the effectiveness of treatment. The transdiagnostic model proposed additional factors serving maintenance roles that, unless directly addressed, would be likely to represent barriers to the treatment of those who were experiencing them (Bardone-Cone et al., 2007; Fairburn et al., 2003). Where present, perfectionism was identified as playing a central maintenance role directly reinforcing the central psychopathology of eating disorders. It was argued that within this context direct treatment of the perfectionistic tendency was needed to increase the effectiveness of any planned intervention. To date research examining the impact of the developed form of CBT, known as CBT-E, is limited to one RCT (Fairburn et al., 2009). Findings are positive with outcomes suggesting some improvement.

Fairburn et al. (2009) suggest that more complex cases with additional maintenance factors, including perfectionism, are likely to do less well in treatment that does not directly address these features of their presentation. Within the treatment approach described by Fairburn and colleagues (2003; 2009), interventions to address the perfectionism component focus largely on cognitive restructuring that aims to challenge beliefs and enable the identification of alternatives. Findings from

the current study suggest that individuals high in clinical perfectionism are likely to be low in self-compassion and high in self-criticism. Authors have pointed to self-criticism as the pathological components of perfectionism (Adlen et al., 2003; Dunkley et al., 2006a). In the perfectionism literature it has been identified as a maintaining factor and it is argued that where perfectionism represents a barrier to treatment effectiveness, self-criticism should be directly addressed (Dunkley et al., 2003; Dunkley et al., 2006a). Findings of the current study suggest that in such cases attention to low self-compassion may also be of value. To date this has not been directly addressed in treatment. It is possible that alongside the importance of self-criticism is the lack of self-compassion expressed by such individuals. The findings of the present study suggest that both may contribute to clinical perfectionism and as seen in the proposed model (see Figure 3), may serve maintenance roles. In light of this, the value of addressing a lack of self-compassion and a tendency for self-criticism may potentially represent an important addition to improve treatment outcomes.

Interventions developed to build the capacity to care for, reassure and soothe the self stem from Gilbert's (2005) work, which assumes that such a system has been under developed in some individuals. In the treatment, developed as an adjunct to CBT, the aim is to develop an alternative relationship with the self that moves away from criticism and towards compassion and care (Gilbert, 2009). Compassionate mind training (CMT) was developed for use with self-critical individuals and focuses on the use of imagery techniques to foster the development of the underused soothing system (Gilbert & Irons, 2004). The hope is that strengthening a way of responding to the self imbued with feelings of care and kindness will allow perceived failure to be dealt with in this way that transforms negative affect (Gilbert, 2010). Early findings for this approach have been positive, demonstrating both an increase in compassion towards the self and an associated decrease in the potency of self-criticism (Gilbert &

Irons, 2004; Gilbert & Proctor, 2006; Mayhew & Gilbert, 2008). To date this intervention has been the subject of largely exploratory research with few controls and CMT remains in its development. However, results indicate experiential changes in participant's relationship with the self, which has been associated with positive outcomes for mental health (Gilbert & Proctor, 2006; Mayhew & Gilbert, 2008).

The outcomes of CMT, although tentative, do offer a potential for the development of treatment in eating disorders. Developments that build on the techniques of CMT may be of adjunctive benefit to those individuals with eating disorders identified as perfectionistic. It is possible that a CMT approach may help to foster underdeveloped soothing systems and allow the development of an alternative way of relating to the self. From this perspective the pathways through which perfectionism is maintained may be broken. Given that perfectionism has been identified as a factor directly reinforcing the core psychopathology of eating disorders, such an approach may have a potential impact on the effectiveness of treatment.

4.6 Proposal for the development of further research

To the author's knowledge, the current study represents the first attempt to explore the link between eating disorder psychopathology, clinical perfectionism, self-criticism and self-compassion. In light of this, the study was intended to provide an exploratory account of the associations between the variables. Results suggest that individuals with higher rates of eating disorder psychopathology were more likely to be self-critical and perfectionistic. Conversely those high in reported levels of self-compassion were less likely to report eating disorder psychopathology, clinical perfectionism or self-criticism. In the case of clinical perfectionism, this negative association remained after the effect of self-criticism was eliminated. The aim to gain some preliminary understanding of the relationships between variables was met

however, the nature of the research brings with it limitations that restrict wider interpretation of the findings. In the following section the findings will be considered as a basis for further research and the potential value of developing this literature discussed.

4.6.1 Replication of the present study

The present study involved the exploration of the relationships between variables with a non clinical student population. The decision to recruit a non clinical sample was based on the lack of previous evidence identifying links between eating disorder psychopathology and self-compassion, continuum models suggesting that traits could be valuably measured in the general population, and the restrictions of time and resources upon the project. Observation of the results from the sub-sample of participants who scored within the clinical range for eating disorders fit the trends observed in the wider sample, tentatively pointing to the possibility of relationships in the clinical population. Given the degree of associations identified between the research variables and the apparent complexity of the relationships between them, it would seem useful to replicate the study with a clinical sample. Such research would be of particular value in exploring the nature of observed associations and justifying further research of their potential value in treatment.

Findings from the present study suggest that there is a strong positive association between self-criticism, eating disorder psychopathology and clinical perfectionism. In the present study a well established measure that provided a single overall self-criticism score was chosen. In future research it may be prudent to include a measure that provides more detail about the nature of self-criticism given its potential value as a maintaining factor in eating disorders. Gilbert and colleagues have developed a scale that measures the forms and functions of self-criticism (Gilbert et al., 2004). It is possible that this will help to make sense of whether the self-

criticism mirrors that in other clinical samples, in which it is thought to be driven by self-hatred (Gilbert & Proctor, 2006; Mayhew & Gilbert, 2008). To date this measure has not been widely used. It may be valuable to use it as an additional measure to provide clarity about the nature of self-criticism in eating disorder psychopathology. In a similar vein, it may be prudent to include further measures related to self-compassion. The present study identified negative relationships with eating disorder psychopathology, clinical perfectionism and self-criticism. When broken down into its subscales self-kindness was found to have the strongest relationships with research variables. This finding is of relevance given that wider research seeking to build the individual's capacity for compassion has an emphasis on directing warmth and kindness towards the self (e.g. Gilbert & Irons, 2004). The self-compassion scale used in the current project was chosen as the only scale available that measured the overarching construct (Neff, 2003b). In a future investigation further measures may be of value to provide further insight on the apparent value of self-kindness. A self-reassurance scale has been developed by Gilbert and colleagues (2004) that may offer an alternative way to assess this construct. More recently, preliminary development of a scale measuring elements of positive affect has been shown to measure a three factor structure including affect associated with contentment and safety (Gilbert et al., 2009). This is thought to be related to the capacity to soothe and direct compassion towards the self (Gilbert et al., 2009). These measures remain in development and their psychometric properties have not been replicated (Gilbert et al., 2004; Gilbert et al., 2009). Inclusion of these measures may offer important additional information about related processes to help clarify the nature of self-compassion. The findings of the current study suggested that mindful acceptance and common humanity still had significant relationships with the clinical variables studied. As these are not assessed by other scales it would still be of value to include the SCS.

4.6.2 Exploring the proposed maintenance roles of self-compassion and self-criticism

Guided by previous research, findings from the current study were used as a tentative basis to suggest the maintenance role of a lack of self-compassion and self-criticism in perfectionism and wider eating disorder symptoms. It would be prudent to investigate this directly in order to evaluate the proposed relationships and increase understanding. Initially it is likely that it would be of value to evaluate the capacity of individuals with a clinically diagnosed eating disorder to generate feelings of kindness and warmth towards the self. In other populations self-critical individuals were found to be less able to generate this state following perceived failure or personal adversity (Gilbert et al., 2006; Leary et al., 2007). This question could be answered using non invasive observational methods largely conducive with treatment interventions. Gilbert and colleagues have used modified thought records commonly employed in CBT, to assess the position adopted when responding to perceived failures, in this case rule breaks (Gilbert & Proctor, 2006; Mayhew & Gilbert, 2008). It is likely that this would be adjunctive to normal treatment in which, individuals would record such experiences, rate associated affect and document corresponding thoughts. This would allow comment on the style of self to self relating and the impact on thoughts and feelings. Behavioural experiments, that similarly form an integral part of CBT interventions, could allow the investigation of the ability and ease of generating alternative warm responses to the self. Such an approach would provide qualitative data about the nature of responses as well as some information about capacity to generate alternatives. With the addition of self-report measures, such research would allow investigation of the theory that a lack of self-compassion may be reinforcing underlying psychopathology. An alternative experimental methodology would allow further controls to be applied. It is likely that such an approach might use a more generic task, which would provide a clearer and more comparable understanding of an individual's ability to generate self-critical and compassionate responses. This

approach is likely to provide more robust findings, but may be more invasive and would be less likely to involve any direct gains for the participants.

Research to determine the capacity of individuals with eating disorders to direct feelings of care and warmth toward the self, and the impact this has on affect, may be valuable. This would enable exploration of the theoretical proposal that it is a lack in this capacity that serves to reinforce the core psychopathology. Findings from the current study suggest that low self-compassion has a more direct relationship with clinical perfectionism compared to eating disorder psychopathology. It would be of interest to explore eating disordered participants for whom perfectionism was and was not an additional difficulty to observe any group differences.

4.6.3 Interventions to increase the capacity for self-compassion

If further research is found to confirm the importance of self-criticism and low self-compassion as maintenance factors in eating disorders, it would be useful to investigate the value of CMT in treatment. To date CMT has largely been employed as a group treatment intended as an adjunctive intervention to compliment CBT (Gilbert & Irons, 2004; Gilbert & Proctor, 2006). The intervention was developed with self-critical individuals with the aim of altering their relationship with themselves (Gilbert & Irons, 2004; Gilbert 2009). In light of the evidence from the present study and past research indicating a link with self-criticism, it is likely that piloting CMT with participants with an eating disorder would be appropriate. The findings from this very preliminary investigation would suggest that individuals with perfectionistic traits might particularly benefit form such an intervention. It would be of particular value to consider the impact of the intervention not only on self-criticism and compassion towards the self, but also on the need to adhere to strict rules, which is indicative of perfectionism. Research allowing clear comparisons between generic CBT for eating

disorders and CBT with the addition of a CMT group would be particularly important. Given the findings of Fairburn et al. (2009) who suggest that complex individuals respond less well to interventions that do not address the additional maintaining factors, such as perfectionism, it would be important to include clear measures that allowed the nature of participants presentations to be considered in outcome data.

The present study evidenced potentially valuable links between self-compassion, self-criticism, clinical perfectionism and eating disorders. Further research is needed to build on these preliminary findings and determine their relevance in clinical samples. Research investigating other forms of psychopathology has indicated the maintaining roles and potential value in treatment that both self-compassion and self-criticism represent. It will be valuable to determine whether individuals with a clinical eating disorder are comparable. The current study forms a basis from which research into the potential value of CMT for eating disorders can be considered.

4.7 Conclusions

The aim of the present study was to undertake an exploratory investigation of the hypothesized relationship between eating disorder psychopathology and self-compassion. The identified relationships provide further support evidencing a link between low self-compassion and poor mental health (Neff, 2003b; Gilbert et al., 2006; Irons et al., 2006). Previous associations between the related constructs of self-criticism and clinical perfectionism were replicated in relation to eating disorder psychopathology. A moderate relationship with self-compassion was established however, the nature of this relationship remains unclear. Conclusions about the unique importance of self-compassion and self-criticism in the prediction of eating disorder psychopathology were complicated by the interrelated complexity of the

associations observed. The nature of self-compassion and self-criticism as overarching cognitive factors that influence coping and affect may have resulted in considerable overlap between the constructs measured, which masked their apparent importance. Results suggest that the association between self-compassion and eating disorder psychopathology may not be direct and is likely to be influenced by additional factors. Clinical perfectionism represented an intervening factor of particular relevance given its strong association with core eating disorder psychopathology (Bardone-Cone et al., 2007; Bulik et al., 2003; Fairburn et al., 1999). The relationship observed between self-compassion and clinical perfectionism informed the proposal that, along with self-criticism, it may represent a maintaining factor. With reference to previous research, it is tentatively proposed that the association between low self-compassion and clinical perfectionism may reflect the relevance of an inability to be kind to the self as an additional pathway reinforcing the over reliance on adherence to strict rules observed in clinical perfectionism. This proposition may be of particular relevance in eating disorders, in which the presence of clinical perfectionism is thought to serve as a maintaining factor that interferes with the effectiveness of treatment (Bardone-Cone et al., 2007; Fairburn et al., 2009). These preliminary findings are of interest when viewed in light of research indicating the value of increasing self-compassion to treat mental health problems (Gilbert & Proctor, 2006; Laithwaite et al., 2009; Mayhew & Gilbert, 2008). Findings from the current study suggest that further research to investigate the hypothesized importance of self-compassion may be valuable in informing clinical practice in the future. The associations identified with self-compassion were exploratory and pose questions about the nature of its interaction with clinical perfectionism and eating disorders that justify further investigation.

References

Adams, C. E., Leary, M. R. (2007). Promoting self-compassionate attitudes toward eating among restrictive and guilty eaters. *Journal of Social and Clinical Psychology, 26, 1120- 1144*

Alden, L. E., Ryder, A. G. & Mellings, T. M. B. (2002) *Perfectionism in the context of social fears: Toward a two-component model*. p 373- 391 In Flett, G. L. & Hewitt. P. L. eds (2002). *Perfectionism: Theory, research, and treatment.* Washington; American Psychological Association.

American Psychiatric Association. (1994). *Diagnostic and statistical manual of mental disorders (4th edition).* USA; American Psychiatric Association

Bardone-Cone, A. M., Wonderlich, S. M., 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, 384-405*

Baumeister, R. F., Campbell, J. D., Krueger, J. I. & Vohs, K. D. (2003). Does high self-esteem cause better performance, interpersonal success, happiness or healthier lifestyle? *Psychological Science in the Public Interest, 4, 1- 44*

Berkman, N., Lohr, K. & Bulik, C. (2007). Outcomes of eating disorders: A systematic review of the literature. *International Journal of Eating Disorders, 40, 293- 309.*

Besley, D. A., Kuh, E. & Welsch, R. E. (2004). *Regression diagnostics: Identifying influential data and sources of collinearity.* New Jersey: John Wiley & Sons.

Blatt, S. J. (2004). *Experiences of depression: Theoretical, clinical and research perspectives.* Washington: American Psychological Association

Blatt, S. J., D'Afflitti, J. & Quinlan, D. (1967). Experiences of depression in young adults. *Journal of Abnormal Psychology. 65, 383- 389.*

Blatt, S. J., Quinlan, D. M., Pilkonis, P.A. & Shea, M. T. (1995). Impact of perfectionism and the need for approval on the brief treatment of depression: The National Institute of Mental Health treatment of depression collaborative research group revisited. *Journal of Consulting and Clinical Psychology. 63, 125- 132*

Bowlby, J. (1969). *Attachment and loss, vol 1: Attachment*. New York: Basic Books

Bulik, C.M., Tozzi, F., Anderson, C. Mazzeo, S.E., Aggen, S.H. & Sullivan, P.F. (2003).The relation between eating disorders and components of perfectionism. *American Journal of Psychiatry, 160, 366 – 368.*

Carter, J. C., Stewart, D. A. & Fairburn, C. G. (2001) Eating Disorder Examination Questionnaire: Norms for young adolescent girls. *Behaviour Research and Therapy, 39, 625- 632*

Clark, C. H., Mahoney, J. S., Clark, D. J. & Eriksen, L. R. (2002). Screening for depression in a hepatitis C population: The reliability and validity of the Centre for Epidemiologic Studies Depression Scale (CES-D). *Journal of Advanced Nursing, 40, 361- 369*

Cohen, J. (1992). A power primer. *Psychological Bulletin, 112, 155- 159*

Cohen, J. (2003). *Applied multiple regression/ correlation analysis for the behavioural sciences*. New Jersey: Lawrence Erlbaum Associates.

Cooper, M. J. (2005). Cognitive theory in anorexia nervosa and bulimia nervosa: Progress, developments and future directions. *Clinical Psychology Review, 25, 511- 531*

Cooper, Z. & Fairburn, C. (1987). The eating disorder examination: A semi structured interview for the assessment of the specific psychopathology of eating disorders. *International Journal of Eating Disorders. 6, 1- 8.*

Cooper, Z. & Shafran, R. (2008). Cognitive behaviour therapy for eating disorders. *Behavioural and Cognitive Psychotherapy, 36, 317- 722.*

Cooper, M. J., Wells, A. & Todd, G. (2004). A cognitive model of bulimia nervosa. *British Journal of Clinical Psychology, 43, 1- 16*

Coyne, J. C. & Whiffen, V. E. (1995). Issues in personality as diathesis for depression: The case of sociotrophy/dependency and autonomy/self criticism. *Psychological Bulletin, 118, 358- 378*

Cox, B. J., Rector, N. A., Bagby, M., Swinson, R. P., Levitt, A. J. & Joffe, R. T. (2000). Is self-criticism unique for depression? A comparison with social phobia. *Journal of Affective Disorders, 57, 223- 228*

Crow, S. J., Peterson, C. B., Swanson, S. A., Raymond, N. C., Specker, S. Eckert, E. D. & Mitchell, J. E. (2009). Increased mortality in bulimia nervosa and other eating disorders. *American Journal of Psychiatry, 166, 1342- 1346*

Curtin, F. & Schulz, P. (1998). Multiple correlations and Bonferroni's correction. *Biological Psychiatry, 44, 775- 777*

Dancyger, I. F. & Garfinkel, P. E. (1995). The relationship of partial syndrome eating disorders to anorexia nervosa and bulimia nervosa. *Psychological Medicine, 25, 1019- 1025*

Dodorico McDonald, J. (2008) Measuring personality constructs: the advantages and disadvantages of self reports, informant reports and behavioural assessment. *Enquire,* 1, 1- 19

Dunkley, D. M., Blankstein, K. R., Masheb, R. M. & Grilo, C. M. (2006a). Personal standards and evaluative concerns dimensions of 'clinical perfectionism': A reply to Shafran et al. (2002, 2003) and Hewitt et al. (2003). *Behaviour Research and therapy, 44, 63- 84*

Dunkley, D. M. & Grilo, C. M. (2007). Self-criticism, low self-esteem, depressive symptoms and over evaluation of shape and weight in binge eating disorder patients. *Behaviour Research and Therapy, 45, 139- 149*

Dunkley, D. M., Zuroff, D. C. & Blankstein, K. R. (2003). Self-critical perfectionism and daily affect: Dispositional and situational influences on stress and coping. *Journal of Personality and Social Psychology, 84, 234- 252*

Dunkley, D. M., Zuroff, D. C. & Blankstein, K. R. (2006b). Specific perfectionism components versus self-criticism in predicting maladjustment. *Personality and Individual Differences, 40, 665- 676.*

Fairburn, C. G. (2008). *Cognitive behaviour therapy and eating disorders*. London: Guilford Press

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

Fairburn, C. G., Cooper, Z., Doll, H. A., O'Connor, M. E., Bohn, K., Hawker, D. M., Wales, J. A. & Palmer, R. L. (2009) Transdiagnostic cognitive behavioural therapy for patients with eating disorders: A two-site trial with a 60 week follow-up. *American Journal of Psychiatry, 166, 311- 319.*

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

Fairburn, C. G., Cooper, Z., Shafran, R., Bohn, K. & Hawker, D. M. (2008). Clinical perfectionism, core low self-esteem and interpersonal problems. In Fairburn, C. G. (Ed). *Cognitive behaviour therapy and eating disorders*. (pp197- 220) London: Guilford Press

Fairburn, C. G., Doll, H. A., Welch, S. L., Davies, B. A. & O'Connor, M. E. (1998). Risk factors for binge eating disorder. *Archives of General Psychiatry, 55, 425- 432*

Fairburn, C. G., Marcus, M. D. & Wilson, G. T. (1993). Cognitive behavioural therapy for binge eating and bulimia nervosa: A comprehensive treatment manual. In Fairburn, C, G., & Wilson, G, T. (Eds.) *Binge eating; nature assessment and treatment.* New York; Guilford Press

Fairburn, C. G., Shafran, R. & Cooper, Z. (1999). A cognitive behavioural theory of anorexia nervosa. *Behaviour Research and Therapy, 37, 1-13*

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

Fichter, M. M., Quadflieg, N. & Hedlund, S. (2006). Twelve-year course and outcome predictors of anorexia nervosa. *International Journal of Eating Disorders, 39, 87-100*

Field, A. (2009). *Discovering statistics using SPSS: Third edition*. London: Sage

Fricker, R. & Schonlau, M. (2002). Advantages and disadvantages of internet research surveys: Evidence from the literature. *Field Methods, 14, 247- 367*

Garner, D. M., Olmsted, M. P., Bohr, Y. & Garfinkel, P. E. (1982). The Eating Attitudes Test: Psychometric features and clinical correlates. *Psychological Medicine, 12, 871- 87*

Geisser, M. & Roth, D. (1997). Assessing depression among persons with chronic pain using the Center for Epidemiological Studies-Depression Scale and the Beck Depression Inventory: a comparative analysis. *Clinical Journal of Pain 13, 163-70.*

Gilbert, P. (2005). Compassion and cruelty: A biopsychosocial approach. In Gilbert, P. (Ed). *Compassion; Conceptualisations, research and use in psychotherapy. (pp9- 75)* London; Routledge

Gilbert, P. (2009). *The compassionate mind*. London: Constable

Gilbert, P. (2010). *Compassion focused therapy*. East Sussex: Routledge

Gilbert, P. Baldwin, M. W., Irons, C., Baccus, J. & Palmer, M. (2006). Self-criticism and self-warmth: An imagery study exploring their relation to depression. *Journal of Cognitive Psychotherapy: An International Quarterly. 20, 183- 200*

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

Gilbert, P. & Irons, C. (2004). A pilot exploration of the use of compassionate images in a group of self-critical people. *Memory. 12, 507- 516*

Gilbert, P. & Irons, C. (2005) Focused therapies and compassionate mind training for shame and self attacking. In Gilbert, P. (Ed). *Compassion: Conceptualisations, research and use in psychotherapy (pp263- 325).* London; Routledge

Gilbert, P., McEwan, K., Mitra, L., Franks, A., Richter, H. & Rockliff, H. (2009). Feeling safe and content: A specific affect regulation system? Relationship to depression, anxiety, stress, and self-criticism. *The Journal of Positive Psychology, 3, 182- 191*

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

Gillath, O., Shaver, P. & Mikulincer, M. (2005) An attachment-theoretical approach to compassion and altruism. Gilbert, P. (Ed). *Compassion; Conceptualisations, research and use in psychotherapy*. (pp121- 148) London; Routledge

Gleaves, D. H., Brown, J. D. & Warren, C. S. (2004). The continuity/discontinuity models of eating disorders: A review of the literature and implications for assessment treatment and prevention. *Behaviour Modification, 28, 739- 762*

Gleaves, D. H., Lowe, M. R., Green, B. A., Cororve, M. B. & Williams, T. L. (2000). Do anorexia and bulimia nervosa occur on a continuum? A taxometric analysis. *Behaviour Therapy, 31, 195- 219*

Greenberg, L. S. (1983). Towards a task analysis of conflict resolution in Gestalt therapy. Psychotherapy: *Theory, Research and Practice, 20,190- 201*

Hay, P. P. J., Bacaltchuk, J., Stefano, S. & Kashyap, P. (2009). Psychological treatments for bulimia nervosa and bingeing (Review). *Cochrane Library, 4*

Healey, J. F. & Prus, S, G. (2009). *Statistics: A tool for social research*. Canada: Nelson Education Ltd

Hertzog, C., Van Alstine, J., Usala, P. D., Hultsch, D. F., & Dixon, R. (1990). Measurement properties of the Center for Epidemiologic Studies Depression Scale (CES-D) in older populations. *Psychological Assessment, 2, 64-72.*

Hewitt, P., Flett, G. L. & Ediger, E. (1995). Perfectionism traits and perfectionistic self -presentation in eating disorder attitudes, characteristics and symptoms. *International Journal of Eating Disorders*, 18, 317- 326

Hewson, C. M., Yule, P., Laurent, D. & Vogel, C. (2003). *Internet research methods a practical guide for the social and behavioural sciences.* London: Sage

Higher Education Statistics Agency. (2010). *All students by institution, mode of study, level of study and domicile.* Retrieved from, http://www.hesa.ac.uk/index.php/component/option,com_datatables/Itemid,121/task,show_category/catdex,3/#institution

Hoek, H. W. (2006). Incidents, prevalence and mortality in anorexia nervosa and other eating disorders. *Current Opinion in Psychiatry, 19, 389- 394*

Hoek, H. W. & Hoeken, D. (2003). Review of the incidence and prevalence of eating disorders. *International Journal of Eating Disorders, 34, 383- 396*

Hudson, J. I., Hiripi, E., Harrison, G., Pope, Jr. & Kessler, R. (2007). The prevalence and correlates of eating disorders in the national co morbidity survey replication. *Biological Psychiatry, 61, 348- 358*

Husaini, B. A., Neff, J. A., Harrington, J. B., Hughes, M. D. & Stone, R. H. (2006). Depression in rural communities: Validating the CES-D scale. *Journal of Community Psychology, 8, 20- 27*

Knapp, F., & Heidingsfelder, M. (2001) Drop-out analysis; Effects of the survey design. In: Reips, U., & Bosnjak, M. (Eds) *Dimensions of internet science*. Lengerich: Pabst Science Publishers

Knight, R. G., Williams, S., McGee, R. & Olaman, S. (1997). Psychometric properties of the centre for epidemiologic studies depression scale (CES-D) in a sample of women in middle life. *Behaviour Research and Therapy, 35, 373- 380*

Klump, K. L., Bulik, C. M., Kaye, W. H., Treasure, J. & Tyson, E. (2009). Academy for eating disorders position paper: Eating disorders are serious mental illness. *International Journal of Eating Disorders, 42, 97- 103*

Keel, P. K., Dorer, D. J., Franko, D. L., Jackson, S. C. & Herzog, D. B. (2005). Postremission predictors of relapse in women with eating disorders. *American Journal of Psychiatry, 162, 2263- 2268*

Kohut, H. (1977). *The restoration of the self*. New York: International Universities Press

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

Leary, M. R., Tate, E. B., Adams, C. E., Allen, A. B. & Hancock, J. (2007). Self compassion and reactions to unpleasant self-relevant events: The implications of treating oneself kindly. *Journal of Personality and Social Psychology, 92, 887- 904*

Lehman, A. K. & Rodin, J. (1989). Styles of self-nurturance and disordered eating. *Journal of Consulting and Clinical Psychology, 57, 117- 122*

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, 1849- 1856*

Lowe, M. R., Gleaves, D. H., DiSimone-Weis, R. T., Furgueson, C., Gayda, C. A., Kolsky, P. A. & McKinney, S. (1996). Restraint, dieting and the continuum model of bulimia nervosa. *Journal of Abnormal Psychology, 105, 508- 517*

Luce, K., Crowther, J. & Pole, M. (2008) Eating disorder examination questionnaire (EDE-Q): Norms for undergraduate women. *International Journal of Eating Disorders. 41, 273- 276.*

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

Miller, J. L., Vaillancourt, T. & Hanna, S. E. (2009). The measurement of 'eating -disorder-thoughts' and 'eating-disorder-behaviours': Implications for assessment and detection of eating disorders in epidemiological studies. *Eating Behaviours, 10, 89- 96*

Mills, A., Gilbert, P., Bellew, R., McEwan, K. & Gale, C. (2007). Paranoid beliefs and self-criticism in students. *Clinical Psychology and Psychotherapy, 14, 358- 364*

Milos, G., Spindler, A., Schnyder, U. & Fairburn, C. G. (2005). Instability of eating disorder diagnosis: Prospective study. *British Journal of Psychiatry, 187, 573- 578*

Minark, M. L. & Aherns, A. H. (1996). Relations of eating disorder behaviour and symptoms of depression and anxiety to the dimensions of perfectionism among undergraduate women. Cognitive Therapy and Research, 20, 155-169

Mond, J. M., Hay, P. J., Rodgers, B., Owen, C. & Beumont, P. J. V. (2004). Validity of the eating disorder examination questionnaire (EDE-Q) in screening for eating disorders in community samples. *Behaviour Research and Therapy, 42, 551- 567*

National Institute for Health and Clinical Excellence. (2004). *Eating disorders: core interventions in the treatment and management of anorexia nervosa, bulimia nervosa and related eating disorders.* London; National Institute for Health and Clinical Excellence.

Neff, K. D. (2003a). Self-compassion: An alternative conceptualization of a healthy attitude toward oneself. *Self and Identity, 2, 85-102.*

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

Neff, K. D. (2004). Self-compassion and psychological well-being. *Constructivism in the Human Sciences. 6, 27- 37*

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

Neff, K. D., Hsieh, Y. & Dejitterat, K. (2005). Self-compassion, achievement goals, and coping with academic failure. *Self and Identity. 4, 263- 287*

Neff, K. D., Pisitsungkagarn, K.. & Hsieh, Y. (2008) Self-compassion and self construal in the United States, Thailand and Taiwan. *Journal of Cross Cultural Psychology. 39, 267- 285*

Neff, K. D, Rude, S. S. & Kirkpatrick, K. L. (2007a) An examination of self-compassion in relation to positive psychological functioning and personality traits. *Journal of Research in Personality. 41, 908- 916*

Neff, K. D. & Vonk, R. (2009). Self-compassion versus global self-esteem: Two different ways of relating to oneself. *Journal of Personality, 77, 24- 50*

Orme, J. G., Reis, J. & Herz, E. (2006). Factorial and disciminant validity of the Centre for Epidemiological Studes Depression (CES-D) Scale. *Journal of Clinical Psychology, 48, 22- 33*

Parker, W. & Kittler- Adkins, K. (1995) A psychometric examination of the Multidimensional Perfectionism Scale. *Journal of Psychopathology and Behavioural Assessment. 17, 323- 334*

Paulhus, D. L. & Vazire, S. (2007). The self report method. In Robins, R. W., Fraley, R. C. & Krueger, R. F. (Eds) *Handbook of research methods in personality psychology*. (p224- 239) London: The Guilford Press

Priel, B. & Besser, A. (2000) Dependency and self-criticism among first-time mothers: The roles of global and specific support. *Journal of Social and Clinical Psychology, 19, 437- 450*

Radloff, L. (1977). The CES-D Scale: A new self-report depression scale for research in the general population. *Applied Psychological Measurement. 1, 385- 401*

Rector, N. A., Bagby, R. M., Segal, Z. V., Joffe, F. & Levitt, A. (2000). Self criticism and dependency in depressed patients treated with cognitive therapy or pharmacotherapy. *Cognitive Therapy and Research, 24, 569- 582*

Roberts, R. E., Andrews, J. A., Lewinsohn, P. M., & Hops, H. (1990). Assessment of depression in adolescents using the Center for Epidemiologic Studies Depression Scale. *Psychological Assessment, 2. 122-128.*

Steiger, H., Goldstein, C., Mongrain, M. & Van der Feen, J. (1990). Description of eating disordered, psychiatric and normal women along cognitive and psychodynamic dimensions. *International Journal of Eating Disorders, 9, 129–140*

Steiner, H., Kwan, W., Shaffer, T. G., Walker, S., Miller, S., Sagar, A. & Lock, J. (2003). Risk and protective factors for juvenile eating disorders. *European Child and Adolescent Psychiatry, 12, 138- 146*

Steinhausen, H. C. & Weber, S. (2009). The outcome of bulimia nervosa: Findings from one-quarter century of research. *American Journal of Psychiatry, 166, 1331- 1341*

Stuandar-Pinnock, K., Woodside, B. D., Carter, J. C., Olmsetd, M. P. & Kaplan, A. S. (2003). Perfectionism in anorexia nervosa: A 4-24 month follow-up study. *International Journal of Eating Disorders,* 33, 225- 229

Tabachnick, B. G. & Fidell, L. S. (2001). *Using multivariate statistics; fourth edition.* London: Allyn and Bacon

Thompson, B. L., & Waltz, J. (2008). Self-compassion and PTSD symptom severity. *Journal of Traumatic Stress, 21, 556- 558*

Thompson, R. & Zuroff, D.C. (2004). The levels of self-criticism scale: Comparative self-criticism and internalised self-criticism. *Personality and Individual Differences, 36, 419- 430*

Van de Mortel, T. F. (2008). Faking it: Social desirability response bias in self report research. *Australian Journal of Advanced Nursing*, 25, 40- 49

Wade, T. & Lowe, J. (2002) Variables associated with disturbed eating habits and overvalued ideas about personal implications of body shape and weight in a female adolescent population. *International Journal of Eating Disorders, 32, 39- 45*

Wang, S. (2005) A conceptual framework for integrating research related to the physiology of compassion and the wisdom of Buddhist teaching. In Gilbert, P. (Ed). *Compassion; Conceptualisations, research and use in psychotherapy. (pp75- 120)* London; Routledge

Waller, G. (2008). A 'trans-transdiagnostic' model of eating disorders: A new way to open the egg? *European Eating Disorder Review, 16, 165- 172*

Ward, A., Ramsey, R., Turnbell, S., Steele, M., Steele, H. & Treasure, J. (2001) Attachment in anorexia nervosa: A transgenerational perspective. British *Journal of Medical Psychology, 74, 497- 505*

Wilcox, H., Field, T., Prodromidis, M. & Sacfidi, F. (1998). Correlations between the BDI and CES-D in a sample of adolescent mothers. *Adolescence, 33*

Wilson, G. T., Grilo, C. M. & Vitousek, K. M. (2007). Psychological treatment of eating disorders. *American Psychologist, 82, 199- 316*

Whelton, W. Greenberg, L. (2005). Emotion in Self-criticism. *Personality and Individual Differences, 59, 339- 345*

Woodside, D. B., Garfinkel, P. E., Lin, E., Goering, P., Kaplan, A. S., Goldbloom, D. S. & Kennedy, S. H. (2001). Comparison of men with full or partial eating disorders, men without eating disorders and women with eating disorders in the community. *American Journal of Psychiatry, 158, 570- 574*

Zinch, J. M., Attkinsson, C. C. & Greenfield, T. K. (1990). Screening for depression in primary care clinics: The CES-D and the BDI. *International Journal of Psychiatric Medicine, 20, 259- 277*

Zou, K. H., Tuncali, K. & Silverman, S. G. (2003). Correlation and simple linear regression. *Radiology, 227, 617- 628*

Zuroff, D. C., Igreja, I. & Mongrain, M. (1990) Dysfunctional attitudes, dependency and self-criticism as predictors of depressive mood states: A 12-month longitudinal study. *Cognitive Therapy Research, 14, 315- 326*

Zuroff, D. C., Koestner, R. & Powers, T. A. (1994). Self-criticism at age 12: A longitudinal study of adjustment. *Cognitive Therapy Research, 18, 367- 385*

Zuroff, D., Moskowitz, D., Wielgus, M., Powers, T. & Franko, D. (1983). Construct validation of the dependency and self-criticism scales of the Depressive Experiences Questionnaire. *Journal of Research in Personality. 17, 226- 241*

Zuroff, D., Quinlan, D. & Blatt, S. (1990) Psychometric properties of the Depressive Experiences Questionnaire in a college population. *Journal of Personality Assessment. 55, 65- 72*

Appendix A
Invitation email

School of Medicine, Health Policy and Practice
Doctoral Programme in Clinical Psychology

University of East Anglia
Norwich NR4 7TJ England

I would like to invite you to participate in a piece of research to help gain a better understanding of eating related difficulties. Such problems may affect a wide range of people and can have a large impact on their lives. Whether you have any direct experience of this or not, your opinions and experiences are invaluable.

Participation in this research would involve completing 5 questionnaires that will take approximately 45- 55 minutes. The measures are all available through one website, which is secure, and ensures that all information collected is anonymous and cannot be traced to you.

If you choose to participate you have the option to be entered into a free prize draw to win an 'i-pod nano'. Email addresses provided at this time will not be linked to any answers given and will be kept securely and destroyed once draw is completed.

The findings of the study will submitted as my doctorial thesis to The University of East Anglia, Clinical Psychology Course, and may be published in a psychology journal. No personal information will be included.

If you have any queries, questions or comments about the study please do not hesitate to email me.

If you would like to participate in the study please follow the link below which will provide further information and allow you to complete the questionnaires at any time.

LINK www----------

Thank you for taking the time to read and consider this research

Meila Roy

Trainee Clinical Psychologist
School of Medicine

Appendix B
Battery of measures

Depressive Experience Questionnaire (Blatt, D'Afflitti & Quinlin, 1976)

DEQ

Listed below are a number of statements concerning personal characteristics and traits. Read each item and decide whether you agree or disagree and to what extent. If you strongly agree, circle7; if you strongly disagree, circle 1; The midpoint, if you are neutral or undecided, is 4.

	Strongly Disagree						Strongly Agree
1. I set my personal goals and standards as high as possible.	1	2	3	4	5	6	7
2. Without support from others who are close to me, I would be helpless.	1	2	3	4	5	6	7
3. I tend to be satisfied with my current plans and goals, rather than striving for higher goals.	1	2	3	4	5	6	7
4. Sometimes I feel very big, and other times I feel very small.	1	2	3	4	5	6	7
5. When I am closely involved with someone, I never feel jealous.	1	2	3	4	5	6	7
6. I urgently need things that only other people can provide.	1	2	3	4	5	6	7
7. I often find that I don't live up to my own standards or ideals.	1	2	3	4	5	6	7
8. I feel I am always making full use of my potential abilities.	1	2	3	4	5	6	7
9. The lack of permanence in human relationships doesn't bother me.	1	2	3	4	5	6	7
10. If I fail to live up to expectations, I feel unworthy.	1	2	3	4	5	6	7
11. Many times I feel helpless.	1	2	3	4	5	6	7
12. I seldom worry about being criticized for things I have said or done.	1	2	3	4	5	6	7
13. There is a considerable difference between how I am now and how I would like to be.	1	2	3	4	5	6	7
14. I enjoy sharp competition with others.	1	2	3	4	5	6	7
15. I feel I have many responsibilities that I must meet.	1	2	3	4	5	6	7

	Strongly Disagree						Strongly Agree
16. There are times when I feel "empty" inside.	1	2	3	4	5	6	7
17. I tend not to be satisfied with what I have.	1	2	3	4	5	6	7
18. I don't care whether or not I live up to what other people expect of me.	1	2	3	4	5	6	7
19. I become frightened when I feel alone.	1	2	3	4	5	6	7
20. I would feel like I'd be losing an important part of myself if I lost a very close friend.	1	2	3	4	5	6	7
21. People will accept me no matter how many mistakes I have made	1	2	3	4	5	6	7
22. I have difficulty breaking off a relationship that is making me unhappy.	1	2	3	4	5	6	7
23. I often think about the danger of losing someone who is close to me.	1	2	3	4	5	6	7
24. Other people have high expectations of me.	1	2	3	4	5	6	7
25. When I am with others, I tend to devalue or "undersell" myself.	1	2	3	4	5	6	7
26. I am not very concerned with how other people respond to me.	1	2	3	4	5	6	7
27. No matter how close a relationship between, two people is; there is always a large amount of uncertainty and conflict.	1	2	3	4	5	6	7
28. I am very sensitive to others for signs of rejection	1	2	3	4	5	6	7
29. It's important for my family that I succeed.	1	2	3	4	5	6	7
30. Often, I feel I have disappointed others.	1	2	3	4	5	6	7
31. If someone makes me angry, I let him (her) know how I feel.	1	2	3	4	5	6	7
32. I constantly try, and very often go out of my way, to please or help people I am close to.	1	2	3	4	5	6	7
33. I have many inner resources (abilities, strengths).	1	2	3	4	5	6	7
34. I find it very difficult to say "No" to the requests of friends	1	2	3	4	5	6	7
35. I never really feel secure in a close relationship.	1	2	3	4	5	6	7

	Strongly Disagree						**Strongly Agree**
36. The way I feel about myself frequently varies: there are times when I feel extremely good about myself and other times when I see only the bad in me and feel like a total failure	1	2	3	4	5	6	7
37. Often, I feel threatened by change.	1	2	3	4	5	6	7
38. Even if the person who is closest to me were to leave, I could still "go it alone."	1	2	3	4	5	6	7
39. One must continually work to gain love from another person: that is, love has to be earned.	1	2	3	4	5	6	7
40. I am very sensitive to the effects my words or actions have on the feelings of other people.	1	2	3	4	5	6	7
41. I often blame myself for things I have done or said to someone.	1	2	3	4	5	6	7
42. I am a very independent person.	1	2	3	4	5	6	7
43. I often feel guilty.	1	2	3	4	5	6	7
44. I think of myself as a very complex person, one who has "many sides."	1	2	3	4	5	6	7
45. I worry a lot about offending or hurting someone who is close to me.	1	2	3	4	5	6	7
46. Anger frightens me.	1	2	3	4	5	6	7
47. It is not "who you are," but "what you have accomplished" that counts.	1	2	3	4	5	6	7
48. I feel good about myself whether I succeed or fail.	1	2	3	4	5	6	7
49. I can easily put my own feelings and problems aside, and devote my complete attention to the feelings and problems of someone else.	1	2	3	4	5	6	7
50. If someone I cared about became angry with me, I would feel threatened that he (she) might leave me.	1	2	3	4	5	6	7
51. I feel comfortable when I am given important responsibilities.	1	2	3	4	5	6	7
52. After a fight with a friend, I must make amends as soon as possible.	1	2	3	4	5	6	7

	Strongly Disagree						Strongly Agree
53. I have a difficult time accepting weaknesses in myself	1	2	3	4	5	6	7
54. It is more important that I enjoy my work than it is for me to have my work approved.	1	2	3	4	5	6	7
55. After an argument, I feel very lonely.	1	2	3	4	5	6	7
56. In my relationships with others, I am very Concerned about what they can give to me.	1	2	3	4	5	6	7
57. I rarely think about my family.	1	2	3	4	5	6	7
58. Very frequently, my feelings toward someone close to me vary there are times when I feel completely angry and other times when I feel all-loving towards that person	1	2	3	4	5	6	7
59. What I do and say has a very strong impact on those around me.	1	2	3	4	5	6	7
60. I sometimes feel that I am "special."	1	2	3	4	5	6	7
61. I grew up in an extremely close family.	1	2	3	4	5	6	7
62. I am very satisfied with myself and my accomplishments	1	2	3	4	5	6	7
63. I want many things from someone I am close to.	1	2	3	4	5	6	7
64. I tend to be very critical of myself.	1	2	3	4	5	6	7
65. Being alone doesn't bother me at all.	1	2	3	4	5	6	7
66. I very frequently compare myself to standards or goals	1	2	3	4	5	6	7

Appendix B

Self Compassion Scale (Neff, 2003b)

HOW I TYPICALLY ACT TOWARDS MYSELF IN DIFFICULT TIMES

Please read each statement carefully before answering. To the left of each item, indicate how often you behave in the stated manner, using the following scale:

Almost never				Almost always
1	2	3	4	5

_____ 1. I'm disapproving and judgmental about my own flaws and inadequacies.

_____ 2. When I'm feeling down I tend to obsess and fixate on everything that's wrong.

_____ 3. When things are going badly for me, I see the difficulties as part of life that everyone goes through.

_____ 4. When I think about my inadequacies, it tends to make me feel more separate and cut off from the rest of the world.

_____ 5. I try to be loving towards myself when I'm feeling emotional pain.

_____ 6. When I fail at something important to me I become consumed by feelings of inadequacy.

_____ 7. When I'm down and out, I remind myself that there are lots of other people in the world feeling like I am.

_____ 8. When times are really difficult, I tend to be tough on myself.

_____ 9. When something upsets me I try to keep my emotions in balance.

_____ 10. When I feel inadequate in some way, I try to remind myself that feelings of inadequacy are shared by most people.

_____ 11. I'm intolerant and impatient towards those aspects of my personality I don't like.

_____ 12. When I'm going through a very hard time, I give myself the caring and tenderness I need.

_____ 13. When I'm feeling down, I tend to feel like most other people are probably happier than I am.

_____ 14. When something painful happens I try to take a balanced view of the situation.

_____ 15. I try to see my failings as part of the human condition.

_____ 16. When I see aspects of myself that I don't like, I get down on myself.

_____ 17. When I fail at something important to me I try to keep things in perspective.

_____ 18. When I'm really struggling, I tend to feel like other people must be having an easier time of it.

_____ 19. I'm kind to myself when I'm experiencing suffering.

_____ 20. When something upsets me I get carried away with my feelings.

_____ 21. I can be a bit cold-hearted towards myself when I'm experiencing suffering.

_____ 22. When I'm feeling down I try to approach my feelings with curiosity and openness.

_____ 23. I'm tolerant of my own flaws and inadequacies.

_____ 24. When something painful happens I tend to blow the incident out of proportion.

_____ 25. When I fail at something that's important to me, I tend to feel alone in my failure.

_____ 26. I try to be understanding and patient towards those aspects of my personality I don't like.

Appendix B

Eating Disorder Examination- Questionnaire form (Fairburn & Beglin, 1994)

Instructions:

The following questions are concerned with the past four weeks (28 days) only. Please read each question carefully. Please answer all of the questions. Thank you.

Questions 1- 12: Please circle the appropriate number. Remember that the questions only refer to the past four weeks (28 days)

On how many days over 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 you have succeeded or not)?	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 and 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 (for example, 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 (for example, working, following a conversation or reading)?	0	1	2	3	4	5	6
9. Have you ever has a definite fear of losing control of over eating?	0	1	2	3	4	5	6
10. Have you ever 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

Questions 13- 18: Please write the appropriate number in the space provided. Remember that the questions only refer to 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 you were eating)?

15. Over the past 28 days, on how many days have such episodes of over eating occurred (ie., 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 weight or shape?

17. Over the past 28 days, how many times have you taken laxatives as a means of controlling your weight or shape?

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

Questions 19- 21: Please circle the appropriate number. Please note that for these questions the term 'binge eating' means 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 secrete (ie, furtively)? ... Do not count episodes of binge eating	No Days 0	1-5 Days 1	6-12 Days 2	13-15 Days 3	16-22 Days 4	23-27 Days 5	Every Day 6
20. On what proportion of the times that you have eaten have you felt guilty (felt you've done wrong) because of its effect on your shape or weight?	None of the times 0	A few of the times 1	Less than half 2	Half of the times 3	More than half 4	Most of the time 5	Every time 6
21. Over the last 28 days, how concerned have you been about other people seeing you eat?..Do not count episodes of binge eating	Not at all 0	1	Slightly 2	3	Mod-erately 4	5	Markedly 6

Questions 22- 28: Please circle the appropriate number. Remember that the questions only refer to the past four weeks (28 days).

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 influences how you think about (judge) yourself as a person?	0	1	2	3	4	5	6
24. How much would it have upset you if you had been asked to weigh yourself once a week (no more or less) 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 been seeing your body (for example seeing you shape in the mirror or reflected in a shop window, while undressing, or taking a shower or bath)?	0	1	2	3	4	5	6
28. How uncomfortable have you felt about others seeing your shape or figure (for example in communal changing rooms, when swimming, or wearing tight clothes)?	0	1	2	3	4	5	6

Appendix B

Multidimensional Perfectionism Scale (Frost, Marten, Lahart & Rosenblate, 1990)

Please read each statement carefully and decide how much you agree or disagree with it. Show your answer by putting a circle round the number that best describes how you think. There are no wrong answers and everyone's answers will be different.

Disagree strongly	Disagree	Neutral	Agree	Agree strongly
1	2	3	4	5

1. My parents set very high standards for me	1	2	3	4	5
2. Organization is very important to me.	1	2	3	4	5
3. As a child, I was punished for doing things less than perfect	1	2	3	4	5
4. If I do not set the highest standards for myself, I am likely to end up a second rate person	1	2	3	4	5
5. My parents never tried to understand my mistakes	1	2	3	4	5
6. It is important to me that I be thoroughly competent in everything I do	1	2	3	4	5
7. I am a neat person	1	2	3	4	5
8. I try to be an organised person	1	2	3	4	5
9. If I fail at work, I am a failure as a person	1	2	3	4	5
10. I should be upset if I make a mistake	1	2	3	4	5
11. My parents wanted me to be the best at everything	1	2	3	4	5
12. I set higher goals than most people	1	2	3	4	5
13. If someone does a task at work better than I, then I feel like I failed the whole task	1	2	3	4	5
14. If I fail partly, it is as bad as being a complete failure	1	2	3	4	5
15. Only outstanding performance is good enough in my family	1	2	3	4	5
16. I am very good at focusing my efforts on attaining a goal	1	2	3	4	5
17. Even when I do something very carefully, I often feel that it is not quite good enough	1	2	3	4	5
18. I hate being less than the best at things	1	2	3	4	5
19. I have extremely high goals	1	2	3	4	5
20. My parents have expected excellence from me.	1	2	3	4	5
21. People will probably think less of me if I make a mistake	1	2	3	4	5
22. I never felt like I could meet my parents expectations	1	2	3	4	5
23. If I do not do as well as other people, it means I am an inferior human being	1	2	3	4	5
24. Other people seem to accept lower standards from themselves than I do	1	2	3	4	5
25. If I do not do well all the time, people will not respect me	1	2	3	4	5
26. My parents have always had higher expectations for my future than I have	1	2	3	4	5
27. I try to be a neat person	1	2	3	4	5
28. I usually have doubts about the simple day things I do	1	2	3	4	5
29. Neatness is very important to me	1	2	3	4	5
30. I expect higher performance in my daily tasks than most people	1	2	3	4	5
31. I am an organised person	1	2	3	4	5
32. I tend to get behind in my work because I repeat things over and over	1	2	3	4	5
33. It takes me a long time to do something 'right'	1	2	3	4	5
34. The fewer mistakes I make, the more people will like me	1	2	3	4	5
35. I never felt like I could meet my parents standards.	1	2	3	4	5

Appendix B

Centre for Epidemiological Studies Depression Scale (Radloff, 1977)

Below is a list of some of the ways you may have felt or behaved. Please indicate how often you have felt this way during the **past week**: (circle **one** number on each line).

Rarely or none of the time (Less than 1 day) **1**	**Some or a little of the time** (1-2 days) **2**	**Occasionally or a moderate amount of the time** (3-4 days) **3**	**All of the time** (5-7 days) **4**

1.I was bothered by things that usually don't bother me	1	2	3	4
2. I did not feel like eating, my appetite was poor	1	2	3	4
3. I felt that I could not shake off the blues, even with help from my family	1	2	3	4
4. I felt that I was just as good as other people	1	2	3	4
5. I had trouble keeping my mind on what I was doing	1	2	3	4
6. I felt depressed	1	2	3	4
7. I felt that everything I did was an effort	1	2	3	4
8. I felt hopeful about the future	1	2	3	4
9. I thought my life had been a failure	1	2	3	4
10. I felt fearful	1	2	3	4
11. My sleep was restless	1	2	3	4
12. I was happy	1	2	3	4
13. I talked less than usual	1	2	3	4
14. I felt lonely	1	2	3	4
15. People were unfriendly	1	2	3	4
16. I enjoyed life	1	2	3	4
17. I had crying spells	1	2	3	4
18. I felt sad	1	2	3	4
19. I felt that people disliked me	1	2	3	4
20 I could not 'get going'	1	2	3	4

Appendix C
Information sheet

School of Medicine, Health Policy and Practice
Doctoral Programme in Clinical Psychology

University of East Anglia
Norwich NR4 7TJ England

Thank you for visiting this site and considering taking part in the study. Before you decide whether to continue please take a moment to read the following, which provides some details about the research.

What is the study trying to achieve?

The aim of the current research is to help gain a better understanding of eating related difficulties. Such problems may affect a wide range of people and can have a large impact on their lives.

Why have I been asked to take part?

Whether you have any experience of eating difficulties and worries or not, your opinions and experiences are invaluable to increasing our understanding. Only adults over the age of 18 are being invite to participate.

If I decide to take part what will I be asked to do?

Participation in this study is your choice and you can decide to leave the study and remove your data at any time. If you do choose to take part you will be asked to provide your age and gender before being invited to complete four questionnaires. After this you will be asked if you would like to be entered in a free prize draw to win an 'i-pod shuffle'. This will require you giving an email address which will not be connected to your responses in any way. Email addresses will not be passed to any outside parties and will be used to contact you if you win the 'i-pod shuffle' only. The email addresses will be held securely and destroyed following the prize draw.

Will my responses be kept confidential?

All information given will be issued with an identifying number that ensures they cannot be traced to you and remain confidential.

Are there any risks involved in taking part?

There aren't any expected risks to taking part in the study. However, it is possible that some of the questions asked could upset or distress some people. If you find any of the questions upsetting you can choose to stop at any time. If you do feel upset following the research you can contact me to discuss any worries or issues however in such a case anonymity is likely to be broken. If you prefer you could choose to contact any of the specialist services and organisations listed at the end of the study.

What are the benefits of taking part?

If you choose to participate in this study the information you provide will help to improve our understanding of eating difficulties. It is hoped that the outcomes of this research may better inform the treatment and management of eating disorders in the future.

What happened after I have completed the questionnaires?

After completing the questionnaires you will be given the option to take part in the free prize draw. Following this you will view contact details for helpful groups and organisations should you require them.

The data collected from the research will be submitted as my doctorial thesis in Clinical Psychology to the University of East Anglia, and may be published in a psychology journal. You can email me if you would like to receive a summary of the results in June 2010.

What if I change my mind about taking part?

You can remove yourself from the study at any time should you choose to. You are not required to complete the questionnaires, and using your unique identifying number can remove previous questionnaire answers.

Who do I contact if I have any questions?

If you have any comments, questions or queries you can contact me via the email address provided.

This study received approval from the University of East Anglia Ethics Committee and is being supervised by Dr Sian Coker, Chartered Clinical Psychologist.

Meila Roy
Trainee Clinical Psychologist
Doctorate Course in Clinical Psychology
School of Medicine, Health Policy & Practice
University of East Anglia
Tel: 01692 404878
M.Roy@uea.ac.uk

Appendix D
Consent form

School of Medicine, Health Policy and Practice
Doctoral Programme in Clinical Psychology

University of East Anglia
Norwich NR4 7TJ England

If you would like to take part in this study please read the following and tick the boxes you agree to.

I give my consent to participate in the current study	
I have seen and read a copy of the information sheet	
I am an adult over the age of 18	
I understand that any information I give will remain confidential and will only be used for stated purposes	
I am aware that I am free to change my mind and can choose not to complete the questionnaires or remove my data at any time.	

Many thanks for agreeing to take part.

Appendix E
Demographic information requested

Unique identifier: (determined by 'Survey Galaxy')

Age:

Gender:

- Male
- Female

Appendix F
De-brief page

School of Medicine, Health Policy and Practice
Doctoral Programme in Clinical Psychology

University of East Anglia
Norwich NR4 7TJ England

Many thanks for agreeing to participate in this study and complete the questionnaires.

What is this study hoping to achieve?

The aim of the current study was to explore peoples thoughts about food, their weight and shape, and explore how these elements interact with a persons tendency to be kind (self-compassionate) or critical (self-criticism) towards themselves. It is thought that those who have more worries about food and weight are likely to be critical and may lack the ability to direct kindness towards themselves. Gaining a greater understanding of these relationship may better inform our understanding of eating difficulties and offer a new avenue for treatment. If you would like further information about the study or results please do not hesitate to contact me.

Meila Roy
Trainee Clinical Psychologist
Doctorate Course in Clinical Psychology
School of Medicine, Health Policy & Practice
University of East Anglia

Tel: 01692 404878
M.Roy@uea.ac.uk

If you have felt worried or troubled by any of the questions or ideas included in these measures please feel free to contact me. Your GP is a useful person to approach and will be able to discuss and offer guidance regarding these and related issues. Below are a number of agencies who offer both useful information and support.

Other people who may be able to offer help and information:

NHS direct
NHS direct can provide local information and guidance relating to all medical and mental health issues

Telephone: 0845 4647

Student Counselling Service
The student counselling service at the University of East Anglia can provide support to students around a range of issues.

For an appointment contact reception on (01603) 592 651 (or ext. 2651) or email: csr@uea.ac.uk.

NEDA
The Norwich Eating Disorder Association provides information and support to people with eating disorders in Norfolk.

www.norfolkeda.org.uk

B-Eat
Beating eating disorders provides information and a support for people with eating disorders and related worries.

www.b-eat.co.uk
Helpline: 0845 634 1414

Samaritans
The Samaritans offer telephone guidance and support to people with any worries or concerns

www.samaritans.org
Telephone: 08457 90 90 90

Appendix G
Letter of ethical approval

Faculty of Health

Meila Roy
Doctorial Programme in Clinical Psychology
School of Medicine
University of East Anglia
Norwich
NR4 7TJ

Research Office, Room 1.09
Chancellors Drive Annex
University of East Anglia
Norwich NR4 7TJ
United Kingdom

Email:Jane.Carter@uea.ac.uk
Tel: +44 (0) 1603 591023
Fax: +44 (0) 1603 591132

Web:www.uea.ac.uk
Web: http://www.uea.ac.uk

01 September 2009

Dear Meila

Is there a relationship between eating disorder psychopathology, self-criticism and an individual's capacity to be self-compassionate? - 2009032

The amendments to of your above proposal have now been considered by the Chair of the FOH Ethics Committee and we can now confirm that your proposal has been approved.

Please could you ensure that any amendments to either the protocol or documents submitted are notified to us in advance and also that any adverse events which occur during your project are reported to the committee. Please could you also arrange to send us a report once your project is completed.

The committee would like to wish you good luck with your project.

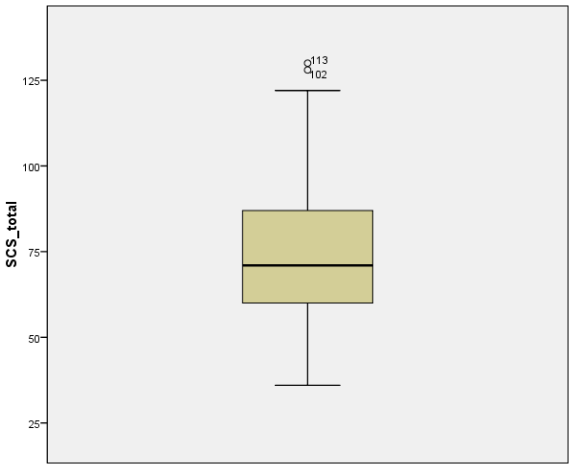
Yours sincerely,

Jane Carter

Appendix H
Box-plots to examine the distribution of the raw data by measure

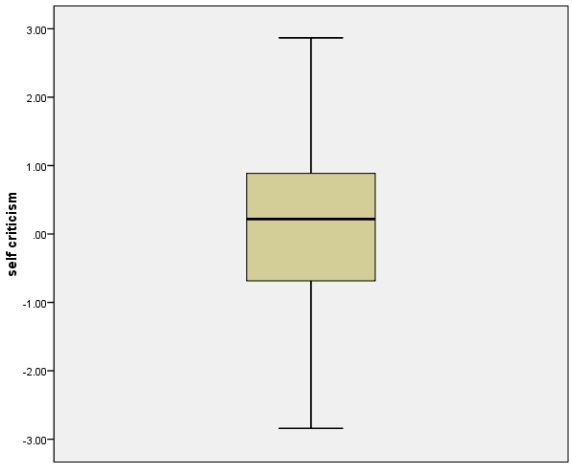
Self-compassion

Box-plot illustrating total scores reported on the SCS



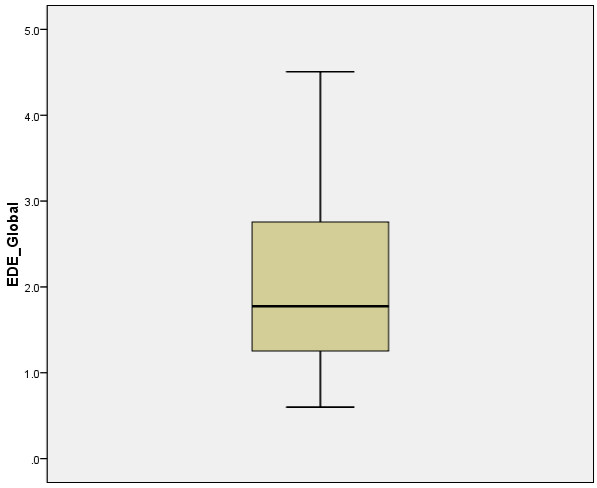
Self-criticism

Box-plot illustrating total scores reported on the DEQ



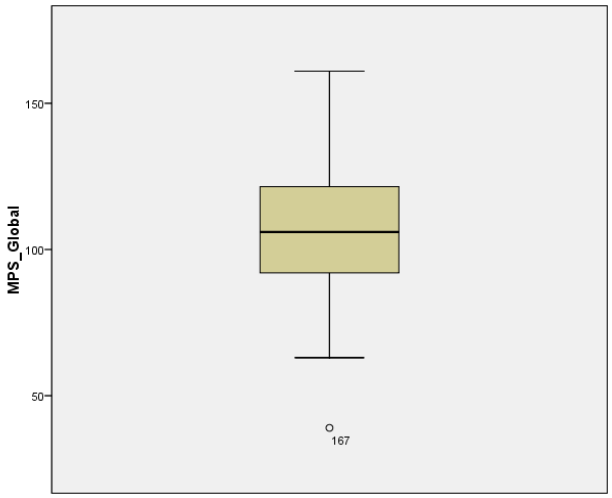
Eating disorder psychopathology

Box-plot illustrating total scores for the EDE-Q



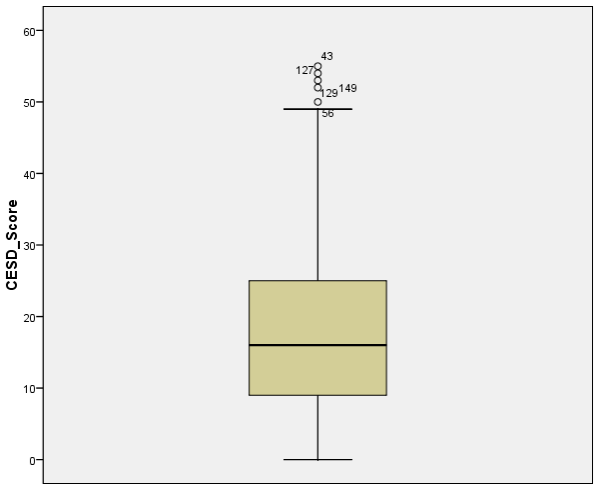
Clinical perfectionism

Box-plot illustrating total scores reported on the MPS



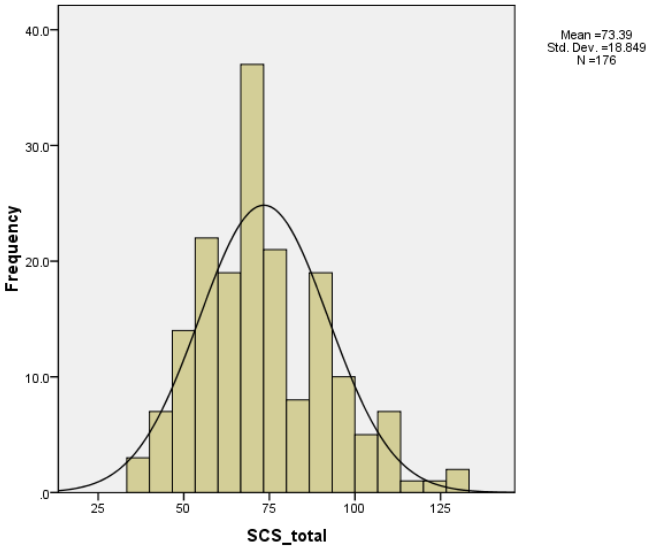
Depression

Box-plot illustrating total scores reported on the CES-D

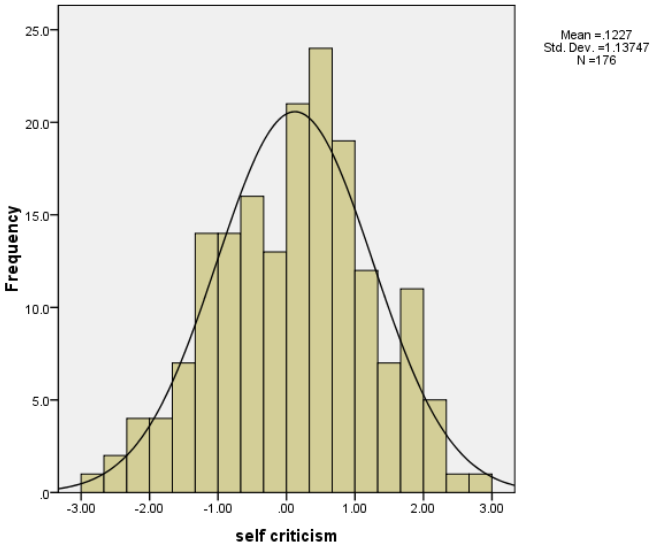


Appendix I
Histograms to examine the distribution of the raw data by measure

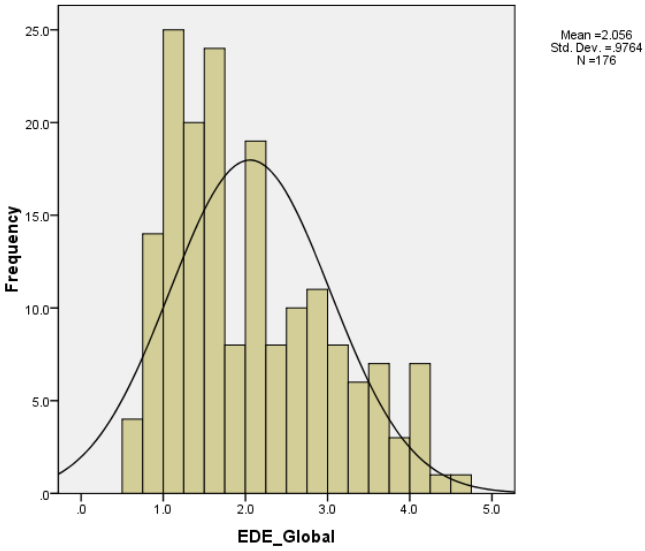
Total scores for self-compassion scale



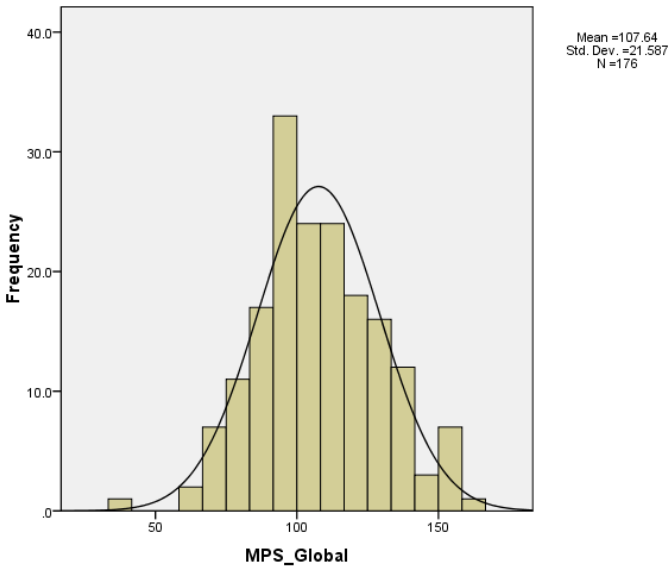
Total score for self-criticism



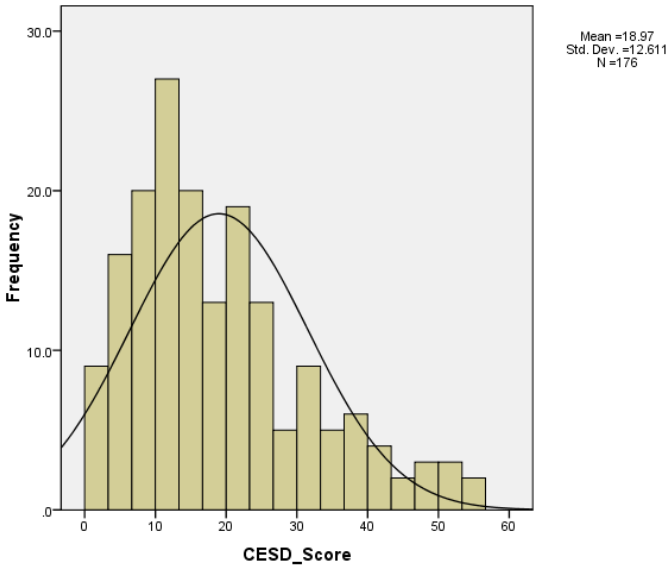
Total score for eating disorder psychopathology



Total score for clinical perfectionism



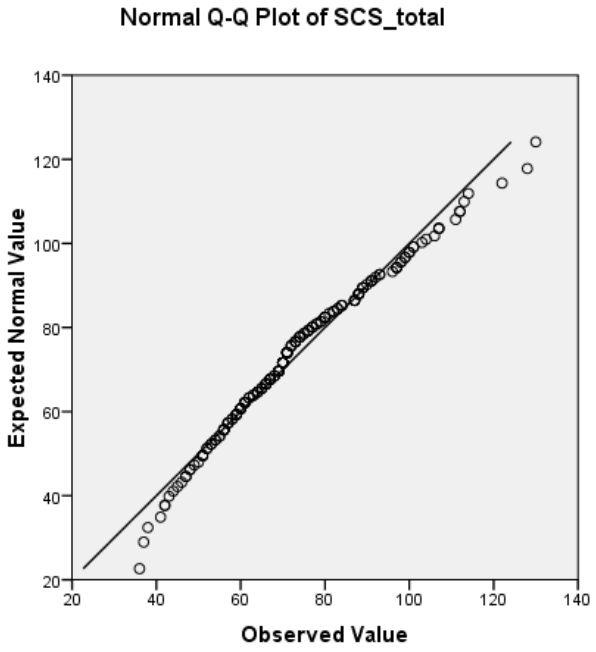
Total scores for depression



Appendix J
Q-Q plots examining the distribution of the raw data by measure

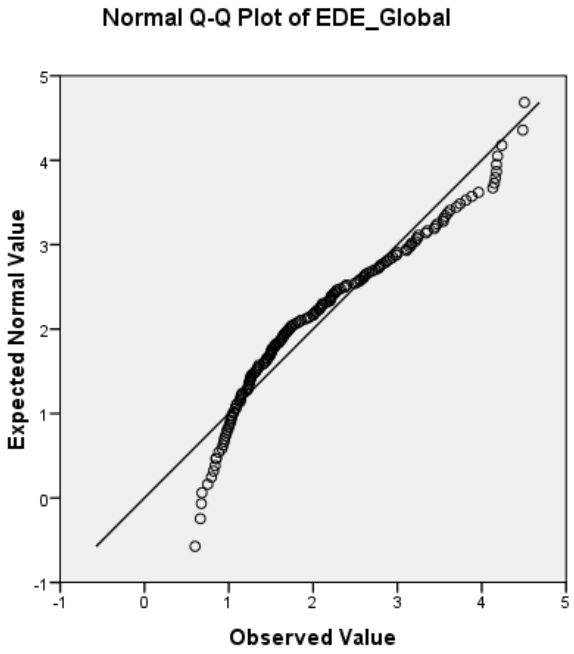
Self-compassion

Q-Q plot illustrating total scores reported on the SCS



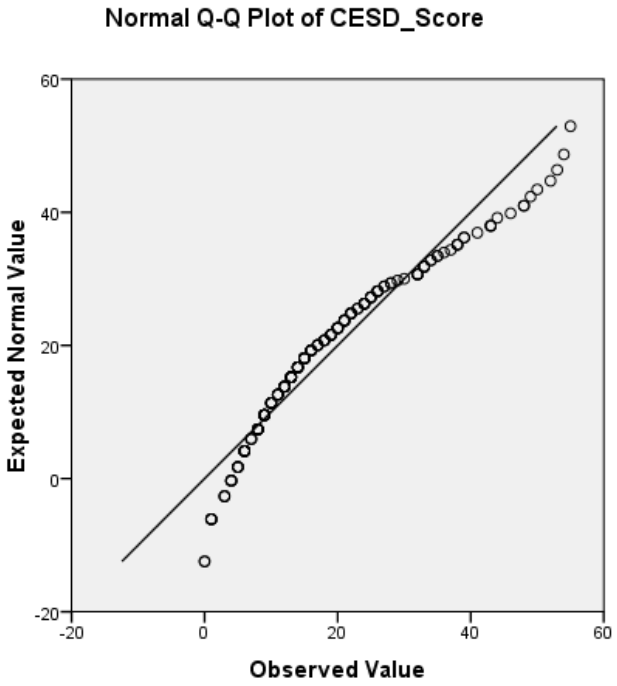
Eating disorder psychopathology

Q-Q plot illustrating total scores reported on the EDE



Depression

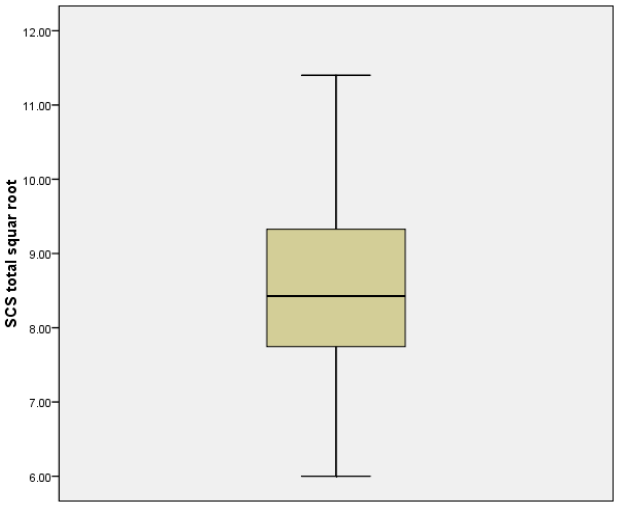
Q-Q plot illustrating total scores reported on the CES-D



Appendix K
Box-plots for transformed data by measure

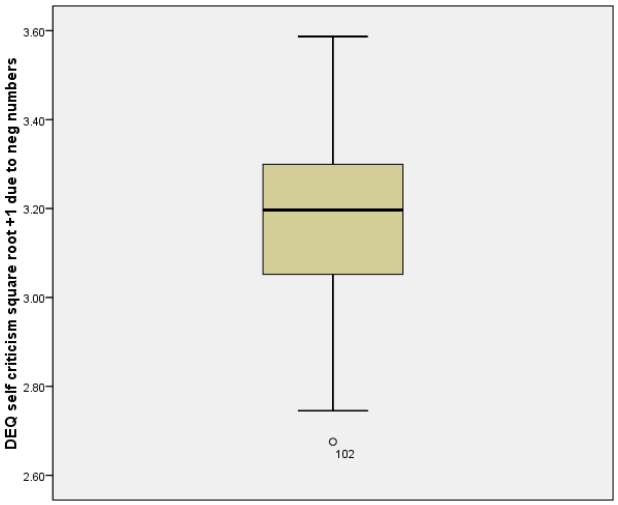
Self-compassion

Box-plot for transformed data from the total scores on the SCS



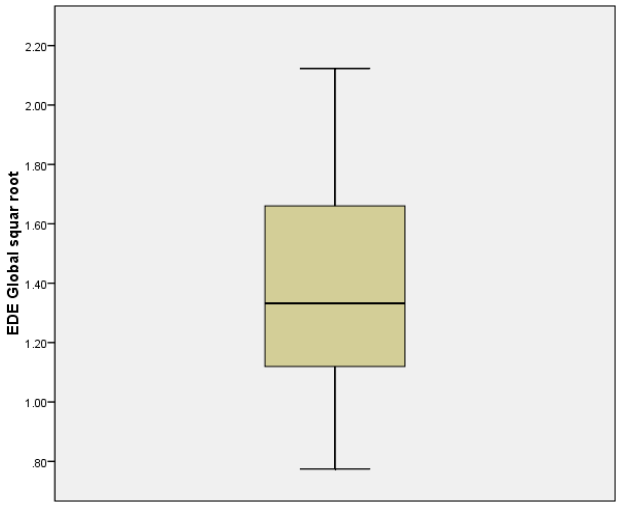
Self-criticism

Box-plot for transformed data from the total scores on the DEQ



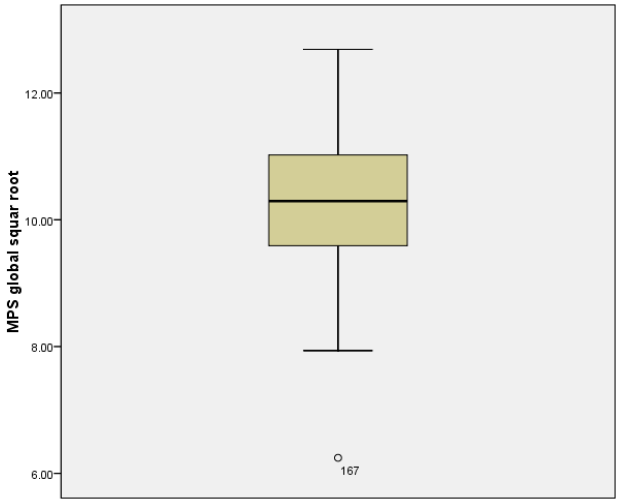
Eating disorder psychopathology

Box-plot for transformed data from the total scores on the EDE-Q



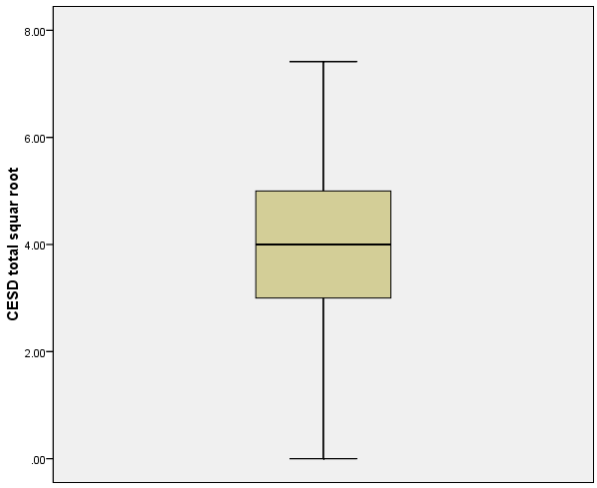
Clinical Perfectionism

Box-plot for transformed data from the total scores on the MPS



Depression

Box-plot for transformed data from the total scores on the CES-D

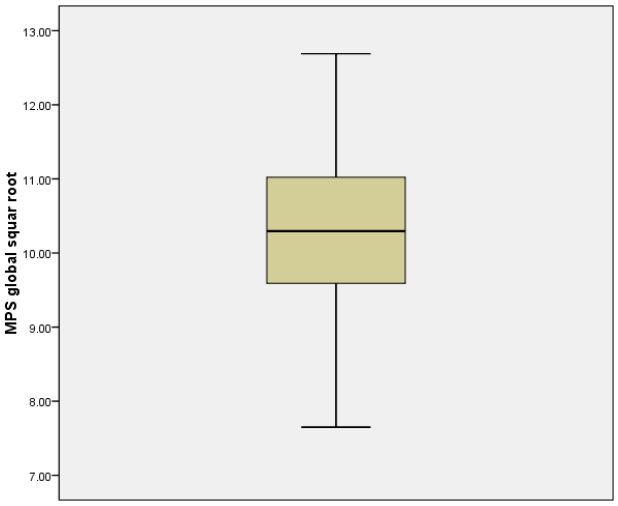


Appendix L

Box-plots following the conversion of outliers

Clinical perfectionism

Box-plot following conversion of outliers for total scores on the MPS



Self-criticism

Box-plot following the conversion of outliers for total scores on the DEQ