
**AN INVESTIGATION OF THE ROLE OF VALUES AND SHAME IN BINGE
EATING**

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DECLARATION

This thesis contains original research undertaken at the Research School of Psychology at The Australian National University. The ideas and research outlined in this thesis are my own work, except where otherwise indicated. The work contained in this thesis has not been submitted for a higher degree at any other institution.

Lisa Marie Knipe

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ABSTRACT

Binge Eating Disorder (BED) is a chronic and distressing eating disorder that is characterised by episodes of eating objectively large amounts of food and experiencing loss of control over eating behaviour. Several psychological interventions have received empirical support for the treatment of BED and although these treatments are efficacious, collectively they are ineffective for approximately 50% of individuals who undertake them. Given that, after treatment, a significant proportion of individuals continue to experience binge eating symptoms either at post-treatment or over the period following treatment, it has been suggested that other theoretical conceptualisations and/or treatment approaches for BED be examined.

One area that has been suggested as a major aetiological and maintenance factor in BED is the role of affect regulation in the urge to binge. None of the main treatment approaches (Cognitive Behaviour Therapy, Interpersonal Therapy, or Behavioural Weight Loss) comprehensively address the role of affect dysregulation in the aetiology and/or maintenance of binge eating. In contrast, central to Dialectical Behaviour Therapy (DBT) is the comprehensive targeting of affect dysregulation. DBT is considered a viable treatment for BED, however, in its traditional format, is a lengthy treatment. Finding ways to refine and enhance emotion-focused treatments, such as DBT, therefore has the potential to improve treatment outcomes for binge eating. DBT focuses on assisting individuals to better manage overwhelming affect without binge eating, however this is often experienced as very difficult to do. As one potential refinement to DBT, values clarification and values consistent behaviour are potential ways of strengthening commitment to accept emotion dysregulation without using binge eating as a coping mechanism.

Drawing on the Acceptance and Commitment literature, the first part of this thesis examines the utility of enhancing DBT for BED with a values and committed action component, as well as examining the feasibility of delivering the treatment over a shorter duration than standard DBT for BED. The first study is a preliminary examination of the efficacy, feasibility, and acceptability of a values-enhanced group DBT program over a shorter duration (14 weeks) than standard DBT-BED (20 weeks). The intervention resulted in a significant reduction in binge eating at post-treatment that was at least comparable to that achieved using the longer, standard DBT programs for BED. A significant increase in tolerance of negative affect and urges to binge eat were also observed. Additionally, participants reported increased connection to personal values, acceptance, and committed action. Participants also endorsed the treatment as highly acceptable. It became apparent during treatment that outcomes measures were not adequately assessing the full range of affect (specifically shame) experienced by participants.

As such, a revision of the Emotional Eating Scale (EES) incorporating Shame and Body Shame subscales is the basis of the latter part of the thesis. Both Shame and Body Shame subscales were developed, and the psychometric properties of the revised EES (EES-R) were examined. The results provide support for the psychometric properties of the EES-R. Additionally the Shame and Body Shame subscales were unique predictors of a range of eating psychopathology and highly related to a number of key psychological constructs related to binge eating.

In conclusion, this thesis highlights the potential role of values in augmenting emotion-based treatments such as DBT. Furthermore, it provides additional support for the role of emotion, and importantly, complex and self-conscious emotions such as shame, that need further attention in binge eating assessment and treatment.

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CHAPTER 1. OVERVIEW AND AIMS

Introduction to the Issue

Binge eating disorder (BED) is primarily characterised by the regular occurrence of binge eating episodes in the absence of the compensatory behaviours characterising bulimia nervosa (American Psychiatric Association, 2013). It is estimated to affect approximately 2.8% of the population, and has far-reaching consequences in terms of its relationship to negative medical, psychological, and social outcomes (White & Gianini, 2013). It is pervasively associated with symptoms of overweight and obesity and shares psychopathology with other eating disorders, particularly bulimia nervosa.

Theoretical models and empirical investigations suggest that one of the main triggers for binge eating is emotion, yet most empirically-supported treatments for BED do not place a central focus on emotion dysregulation. An exception to this is Dialectical Behaviour Therapy (DBT), which has at its core an emotion regulation model. While DBT has shown promising outcomes for BED, the treatment is a 20-week program, and, like other evidence-based interventions, between 28 to 50 per cent of people remain symptomatic after treatment (Safer, Telch, & Chen, 2009). The present program of research will investigate two potential pathways for improving treatment outcomes for BED, namely, by (1) assisting individuals with BED to tolerate aversive emotions through connection to their values (i.e., what is personally meaningful and purposeful) and (2) investigating the role of shame - which has been relatively neglected in the literature - in eating disorder symptomatology.

Intolerance of negative affect and connection to values.

Emotion regulation difficulties have long been implicated in the development and maintenance of disordered eating (Leehr et al., 2015), with the earliest implications noted by Bruch's seminal work on individuals with eating disorders in the 1960s and 1970s. She maintained that the individual's anorexia nervosa resulted from an inability to identify, express, and tolerate emotions (Fox, Federici, & Power, 2012).

Beyond these clinical observations, research indicates that emotions, particularly negative emotions, are major triggers for binge eating behaviour (Arnou, Kenardy, & Agras, 1992; Berg et al., 2013; Lampard, Byrne, McLean, & Fursland, 2011; Munsch, Meyer, Quartier, & Wilhelm, 2012; Pollert et al., 2013; Stice, 2002). Binge eating is thought to function as a way of coping with these negative emotions (Zeeck, Stelzer, Linster, Joos, & Hartmann, 2011), by acting as an emotion regulation strategy where the person escapes or avoids the experience of negative emotions. While escape or avoidance behaviours can lead to behavioural responses that provide short-term relief, such as distraction, they ultimately increase distress and harm to the individual.

While the role of negative affect in BED is well established, this research has not fully informed treatment approaches, which have tended to focus on cognition and behaviour (Fox et al., 2012). Relatively recently, there has been an increase in emotion-focused treatments, such as DBT, for binge eating. The results are promising, however, like other treatments for BED, further improvements are warranted, as a significant number of people remain symptomatic following treatment. Safer et al. (2009) argue that decreasing emotion dysregulation is a potential mechanism for

change. One possible implication of this is that DBT outcomes could be improved if the treatment is refined to better assist people to disengage from avoidance behaviours (particularly binge eating) when experiencing difficult emotions.

One promising way of improving the capacity to tolerate difficult emotions associated with binge eating is through helping people connect and engage with aspects of their life that they identify as meaningful and important (i.e., their values). Theoretical work suggests that connection to values increases motivation to change and that value consistent behaviour can improve a person's sense of how meaningful their life is (Hayes, Strosahl, & Wilson, 1999). Additionally, research suggests that goals that are based on avoidance of emotions tend not to be related to positive treatment outcomes (Sheldon & Elliot, 1999), whereas values can provide direction during periods of intense emotion dysregulation (Luoma, Hayes, & Walser, 2007). Whilst DBT for BED assists in the development of client goals (e.g., reducing the frequency of binge eating), the exploration of values does not explicitly occur.

Targeting shame in the assessment and treatment of BED. In addition to including values in treatment, there are potential ways of improving the way in which emotional eating as a trigger for binge eating is conceptualised and hence targeted in treatment. Currently, conceptualisations tend to focus on what is described in the literature as 'basic' emotions such as anger and frustration (Allan & Goss, 2012; Gupta, Rosenthal, Mancini, Cheavens, & Lynch, 2008), yet there is substantial evidence in the literature linking complex emotions (such as shame) to eating disorder psychopathology, including binge eating (Kelly & Carter, 2013; Sanftner & Crowther, 1998; Troop, Allan, Serpell, & Treasure, 2008). The assessment of complex emotions such as shame would seem to have particular relevance to BED (Allan & Goss, 2012) as it potentially acts as a trigger for dysregulated eating. The Emotional Eating Scale

(EES; Arnow, Kenardy, & Agras, 1995) is a frequently used assessment tool for examining the relationship between emotion and dysregulated eating behaviour, however, it only assesses anger, depression, and anxiety, while a later study included boredom in the EES (Koball, Meers, Storfer-Isser, Domoff, & Musher-Eizenman, 2012). The inclusion of shame as a part of the EES has the potential to more comprehensively capture a wider spectrum of emotional triggers for eating behaviour, with implications for both the assessment and treatment of binge eating. Expanding existing measures of emotional eating (such as the EES) to include shame may improve our understanding of the role of emotion in binge eating, provide a more nuanced understanding of treatment outcomes, and potentially guide treatment in terms of explicitly addressing the shame people experience. Given the profound impact of binge eating, and its links to obesity, it is crucial that improvements in assessment and treatment are made.

Overview of the Thesis

The first section of this thesis (Chapters 1-5) reviews the current literature on BED. Chapter 2 provides an overview of the clinical presentation of BED (i.e., the diagnostic criteria, key features, and epidemiology of the disorder) and reviews the research on the impact of BED on psychosocial functioning, and the comorbid relationship between BED and other psychiatric disorders and physical health problems. Additionally, Chapter 2 provides an outline of the main instruments for assessing BED, and concludes with a review of the research on risk factors for developing BED.

Chapter 3 introduces and reviews the research on the predominant theoretical explanations for BED, namely: (1) the Addiction Model; (2) Restraint Theory; (3) Escape Theory; (4) the Dual Pathway Model, and (5) the Affect Regulation Model.

This chapter highlights the considerable overlap between the models regarding the role of negative emotion in binge eating behaviour, and posits that the Affect Regulation Model offers the most comprehensive theoretical explanation of the development and maintenance of BED.

Chapter 4 reviews the main psychological treatment approaches for BED. It provides an outline of the core components and features of Behavioural Weight Loss treatment, Cognitive Behaviour Therapy, Cognitive Behavioural Self-Help approaches, Interpersonal Psychotherapy, and Dialectical Behaviour Therapy, and reviews the research regarding the efficacy of each approach in ameliorating the symptoms of BED. Chapter 4 highlights the need for improvements to be made in BED treatment, and suggests that treatment can be refined and enhanced by introducing components from Acceptance and Commitment Therapy, namely, Values and Committed Action.

Chapter 5 includes an examination of the history of the concept of values in psychology, followed by a focus on the conceptualisation of values from an Acceptance and Commitment Therapy (ACT) perspective. The application of values to eating disorder treatment is also examined.

Chapter 6 describes the first study of this thesis, which sought to investigate the effectiveness of a modified DBT group treatment program for individuals with BED. The DBT treatment was enhanced with a 'Values and Committed Action' component and was delivered over a 14-week period, six weeks shorter than standard DBT for BED. An aim of the study was to examine the acceptability and perceived usefulness of the additional values component as well as to measure reductions in binge eating post-treatment as well as improvements in related variables such as

distress tolerance and emotion regulation. The findings outlined in this chapter suggest that values enhanced DBT group treatment can achieve improvements in binge eating and related psychopathology (comparable to those achieved by longer DBT treatments for BED) and is an area that is worthy of further study.

Chapter 7 introduces the concepts of shame and body shame, and provides an overview of their relationship to disordered eating. This includes an examination of shame generally, followed by a focus on the relationship between shame, body image disturbance, and eating disorder psychopathology, including emotional eating. This chapter also provides an overview of the measures used to assess shame in eating disorders, including a review of issues in assessing shame as an antecedent for dysfunctional eating behaviour. On the basis of this literature, as well as the clinical observations described in Chapter 6 on participants' reports that shame was a frequent precipitant of binge eating it is proposed that a greater focus on investigating shame as a trigger for emotional eating is required.

Chapter 8 described the second study of the thesis, which entailed a revision of the Emotional Eating Scale (EES-R) by including separate Shame and Body Shame subscales. The factor structure of the EES-R was examined with the purpose of determining whether eating when feeling shame and body shame are unique constructs compared to eating in response to other emotions. There was evidence of a six-factor structure, suggesting that eating when feeling shame and body shame are indeed unique constructs. Shame was a better predictor of self-esteem, negative affect (with the exception of anxiety), and internalised guilt (with the exception of anger and body shame) than the other EES-R subscales. Body shame was a significant predictor independent of anger, anxiety, depression, boredom, and shame, and was able to

uniquely predict external shame and eating disorder pathology, including loss of control over eating.

Chapter 9 provides a summary of the research findings, namely, that (1) the addition of values and committed action to DBT group program for binge eating disorder is promising and worthy of future investigation, and (2) shame and body shame are distinct factors in triggering emotional eating, thus providing further support for the role of complex emotions in eating disorder behaviour. This chapter compares the research findings with previous research conducted in this area and the current findings are considered in the context of their theoretical and clinical implications for BED. The limitations and directions for future research are also discussed.

CHAPTER 2.

ASSESSMENT ISSUES IN BINGE EATING DISORDER

Diagnostic Criteria for Binge Eating Disorder

Binge eating disorder (BED) is a highly distressing disorder for those who experience it and has the highest prevalence rate amongst all eating disorders in adults (Iacovino, Gredysa, Altman, & Wilfley, 2012). While it is only in the past 20 years that BED has been officially recognised (at least as a criteria set provided for further study) in the *Diagnostic and Statistical Manual of Mental Disorders (DSM-IV;* American Psychiatric Association [APA], 1994), clinical symptoms consistent with a diagnosis of BED were first recognised by Stunkard in 1959. He observed that some individuals ate large quantities of food while experiencing a loss of control over their eating, and that these episodes of eating were precipitated by specific events and resulted in feelings of discomfort and self-condemnation (Mitchell, Devlin, de Zwaan, Peterson, & Crow, 2008). Despite this early recognition, it was only in 1994 that BED was described in the *DSM-IV* (APA, 1994) as an eating disorder, but at this stage it was relegated to the appendix as a provisional diagnosis that required further study. With the recent publication of the fifth edition of the *DSM* (APA, 2013), BED is now recognised as an official eating disorder diagnosis.

The *DSM-5* diagnostic criteria for BED include recurrent episodes of binge eating that occur, on average, at least once a week for a period of at least three months (APA, 2013). Episodes of binge eating are characterised by eating a large quantity of food within a discrete period of time (e.g., within any two-hour period). The quantity of food eaten is larger than what most people would eat in a similar period of time under similar circumstances, and episodes of binge eating are accompanied by a sense

of lack of control over eating during the episode. The binge eating episodes are also associated with at least three of the following: eating much more rapidly than normal, eating until feeling uncomfortably full, eating large amounts of food when not feeling physically hungry, eating alone because of feeling embarrassed by how much one is eating, and feeling disgusted with oneself, depressed, or very guilty afterward. To meet criteria for a diagnosis of BED, individuals must not engage in the recurrent use of inappropriate compensatory behaviours associated with other eating disorder diagnoses, such as self-induced vomiting or laxative use. The *DSM-5* diagnostic criteria for BED also allow clinicians to specify the current severity of the disorder, which ranges from mild (one to three binge eating episodes per week) to extreme (14 or more binge eating episodes per week).

Loss of control (LOC) is central to the diagnosis of BED and is associated with significant levels of psychological distress. Loss of control refers to the subjective experience of being unable to stop eating, or control what or how much is eaten (Colles, Dixon, & O'Brien, 2008). In BED, loss of control is often accompanied by the consumption of an objectively large quantity of food without the presence of compensatory behaviours such as laxative use or self-induced vomiting. However, the volume of food associated with LOC over eating can either be objectively large (i.e., what most people would consider a large quantity of food) or subjectively large (i.e., a small to moderate amount of food is consumed but is deemed to be excessive by the individual). Studies examining the relationship between LOC over eating and psychological distress in BED have demonstrated that feeling "out of control" whilst eating is more strongly associated with distress than with the quantity or type of food consumed (Colles et al. 2008; Keel, Mayer, & Harnden-Fischer, 2001).

Epidemiology of Binge Eating Disorder

Despite earlier research to the contrary (Fairburn, Cooper, Doll, Norman, & O'Connor, 2000), more recent studies suggest that BED is a chronic condition that is associated with elevated morbidity and mortality, and a duration of illness, comparable to bulimia nervosa (Grilo, White, & Masheb, 2009; Wildes & Marcus, 2010). Lifetime prevalence rates for BED range from 2% in men to 3.5% in women in the general population, and range from 8% to 28% in obese individuals (Hudson, Hiripi, & Pope, 2007). These rates rise even further to 46% in individuals seeking weight loss treatment such as bariatric surgery (White & Gianini, 2013). Additionally, the average lifetime duration of BED is approximately eight years in the general population and fourteen and a half years in overweight and obese individuals (Wildes & Marcus, 2010).

Age of onset of BED has been examined in a number of studies and it appears to typically develop from mid-adolescence to the mid-twenties. For example, Kessler and colleagues (2013) conducted a large study of BED in a community sample of 24,124 respondents across 14 countries. They used the World Health Organisation Composite International Diagnostic Interview (see Andrews, Morris-Yates, Peters, & Teerson, 1993) to assess eating pathology and demographics, and found that the average age of onset for BED ranged between 15.5 years and 27.2 years, regardless of ethnicity.

Studies examining ethnic group differences in BED are limited to ethnic minority groups in the United States. This limited body of research suggests that individuals with BED exhibit more ethnic diversity compared to other eating disorders (Franko, Lovering, & Thompson-Brenner, 2013). Furthermore, rates of

binge eating and core eating disorder psychopathology (i.e., shape and weight concerns) in ethnic groups are comparable to those of Caucasians (Franko et al., 2013). For example, Franko and colleagues (2007) examined the frequency of binge eating amongst a college-based eating disorders screening sample of 5,435 African American, Asian, Latino, and Caucasian participants. The researchers found that frequency of eating disorder symptoms, including binge eating, did not differ across the ethnic groups. Additionally, self-reported distress related to binge eating was elevated to a comparable degree across all ethnic groups.

Clinical Presentation of Binge Eating Disorder

Binge eating disorder is a syndrome that is associated with high levels of suffering and impairment in a number of important clinical and interpersonal domains. Mitchell and colleagues (2008) assert that individuals with BED have more mental health problems than weight-matched non-binge eaters, lower self-esteem and social support, and may experience more difficulty tolerating psychological distress and managing relationships compared to individuals without BED. Furthermore, mental health problems such as anxiety, depression, and substance use and/or dependence, and the severity of these disorders is similar to that found in other clinical populations (Wilfley, Schwartz, Spurrell, & Fairburn, 2000). Binge eating disorder is also associated with body image disturbance, overweight and obesity, and shares psychopathology (e.g., elevated weight/shape concerns) with other eating disorders, particularly bulimia nervosa (Stunkard & Allison, 2003). These factors combined have significant implications for the psychological and social functioning of individuals with BED.

Psychosocial functioning. Impairments in areas such as distress tolerance, self-esteem, body image, interpersonal relationships, and control over one's

behaviours and actions are common in individuals with BED, and these impairments have important implications regarding an individual's quality of life and sense of wellbeing.

Individuals with BED are more likely to experience lower levels of distress tolerance, which is defined as the ability to both cope with and accept negative affect, so that one can engage in effective problem-solving (Cortorphone, Mountford, Tomlinson, Waller, & Meyer, 2007). Anestis and colleagues (2011) also argue that individuals with BED are sensitive to less intense experiences of negative affect compared to individuals with high distress tolerance and are likely to experience negative affect more frequently, resulting in the use of binge eating to provide some form of relief. Indeed, several studies have demonstrated that binge eating operates as a means of regulating psychological distress (Arnou, Kenardy, & Agras, 1992; Deaver, Miltenberger, Smyth, & Meidinger, 2003; Heatherton & Baumeister, 1991; Zeeck, Stelzer, Linster, Joos, & Hartmann, 2011).

Binge eating disorder is also frequently associated with low self-esteem, which is defined as a "global negative view of the self" (Dunkley & Grilo, 2007, p. 140), and in the BED population, has been demonstrated to be a predictor of binge eating severity regardless of a person's weight (de Zwaan et al., 1994). This 'negative view of the self' is comprised of an individual's negative appraisal about their self-worth, significance, attractiveness and competence, leading to problems with self-acceptance (Silverstone, 1993). In addition, negative perceptions regarding one's ability to control behaviour (such as binge eating) tend to increase feelings of failure, and in turn lower self-esteem. This interaction results in feelings of hopelessness regarding one's capacity to change problematic eating behaviours (Fairburn, Cooper,

& Shafran, 2003) and has been linked to other psychological problems such as depression, anxiety, and poor body image.

As with other eating disorders, individuals with BED typically exhibit core eating disorder pathology such as over-evaluation of shape and weight. An individual's sense of self-worth and attractiveness are often influenced by their perception of how their body rates against societal portrayals of the 'ideal' body weight. This 'ideal' body weight in Western societies is often unrealistically low and difficult to achieve. The inability to reach this 'ideal' body weight increases feelings of failure, and over concern with weight and shape (Hilbert & Hartmann, 2013; Silverstone, 1993). These feelings of failure result in high levels of dissatisfaction with one's body, a key aspect of body image disturbance (Hilbert & Hartmann, 2013).

Body image disturbance is a multidimensional construct that can be defined as the cognitive, emotional, and behavioural concerns one has about their body size and appearance (Cargill, Clark, Pera, Niaura, & Abrams, 1999; Sarwer, Thompson, & Cash, 2005). Disturbances in body image are often characterised by experiencing a discrepancy between one's ideal and perceived body size (an attitudinal disturbance) or feeling as though one's body size is larger than it actually is (a perceptual disturbance), and manifest in certain behaviours such as body checking and/or body avoidance (e.g., wearing loose clothing and avoiding places where one's body can be seen, such as swimming pools and beaches) (Hilbert & Hartmann, 2013). Masheb and Grilo (2002) examined the relationship between dissatisfaction with body shape, self-evaluation based on body shape and weight, and self-esteem in 97 patients being treated for BED. They found that changes in body satisfaction and self-evaluation were significantly correlated with changes in self-esteem and depression. This study suggests that improvements in how one perceives their body, in addition to changes in

the importance of shape and weight in how one appraises oneself, can lead to improvements in self-esteem and reduce symptoms of depression. Indeed, some researchers have argued that the overvaluation of shape and weight is so prominent in BED that it should be included in the *DSM* diagnostic criteria for BED, akin to the criteria for anorexia nervosa and bulimia nervosa. For example, Grilo (2013) argues that shape and weight overvaluation should be a diagnostic specifier for BED. This argument is based on the potential of weight/shape over valuation to provide an indication of the severity of BED and its prognosis.

Difficulties in the domain of interpersonal functioning are common in eating disorders, including those with BED. Difficult social experiences, loneliness, lack of social support, poor social adjustment, and social skills are equally common in individuals with BED as among individuals with other eating disorders (Tanofsky-Kraff & Wilfley, 2010). Research suggests that social skills deficits, such as problems with assertiveness and ability to express feelings, are prominent in individuals with BED. Duchesne and colleagues (2012) examined the social skills profile of obese women with BED ($n = 60$) compared to obese women without BED ($n = 60$) and normal weight controls ($n = 54$). They found that women with BED exhibited fewer assertiveness skills, lower capacity for expressing feelings, as well as impaired ability to understand the perspective of others, compared to obese women without BED and normal weight controls. Furthermore, obese women with BED exhibited higher levels of personal distress and lower capacity to deal with strangers compared to obese women without BED and normal weight controls. In another study, Whisman and colleagues (2012) examined the marital functioning of women with BED ($n = 32$) compared to women without BED ($n = 2053$). They found that women with BED reported lower levels of marital satisfaction and higher levels of negative interactions

with their spouse compared to women without BED. Taken together, these studies suggest that individuals with BED exhibit skill deficits that may impair the development of relationships and impede the improvement of existing relationships, and that interpersonal difficulties are attributable to BED rather than weight status. An important limitation of both these studies, as the authors note, is that they focused on the experience of women, and the results may not generalise to men or individuals in forms of relationships other than marriage.

Comorbidity. In addition to diverse psychosocial problems, BED is associated with high rates of psychopathology as well as chronic physical health problems such as obesity. Mental health problems such as mood, anxiety, and substance use disorders are commonly reported amongst individuals with BED and the percentage of BED patients with these disorders is as high as those with anorexia nervosa and bulimia nervosa (Tanofsky-Kraff et al., 2013). Personality disorders are also overrepresented amongst individuals with BED, with elevated rates of borderline, avoidant, and obsessive-compulsive personality disorders reported in the literature (Tanofsky-Kraff et al., 2013).

In a study examining the estimates of psychiatric problems in obese women (n = 310) and men (n = 94) with BED, Grilo and colleagues (2009) found that 73.8% of patients had a lifetime history of a psychiatric disorder and 43.1% had a current psychiatric disorder. They also found that mood disorders (54.2%) were the most commonly experienced over the patient's life history, followed by anxiety (37.1%) and substance use (24.8%) disorders. Very few gender differences were observed, however men had higher life-time rates of substance use problems. One limitation of this study is the difficulty in attributing these comorbidities to BED versus obesity. However, Jones-Corneille and colleagues (2011) conducted a study in which they

controlled for obesity status. Specifically, they examined rates of psychiatric problems amongst obese patients and observed that BED patients ($n = 62$) had higher rates of a life-time history of depression and anxiety compared to non-BED patients ($n = 89$). They observed that 40% of BED patients had a current diagnosis of either a mood or anxiety disorder, with major depressive disorder indicated as the most common condition.

In addition to psychiatric problems, BED is strongly associated with chronic physical health problems. The prevalence of BED in obese adults ranges from eight to 28% (White & Gianini, 2013), and these figures rise to approximately 50% in severely obese people who are undertaking bariatric surgery (Yanovski & Stunkard, 2003). In adults, to be classified as overweight, a person must have a body mass index (BMI = kg/m^2) over 25 and under 29.9; and to be classified as obese, a person must have a BMI of 30 and above (World Health Organisation, 2000). Concerningly, overweight and obesity comprise the second largest contributor to burden of disease in Australia. Research suggests that approximately a quarter of Australian children and adolescents are overweight and one in four are obese (Dixon, Eckersley, & Banwell, 2003). Furthermore, data collected by the Australian Bureau of Statistics between 2011 and 2012 indicated that almost 63% of Australian adults (over 18-years-of-age) are classified as either overweight (35.3%) or obese (27.5%). Obese individuals with BED experience even more of these health problems compared to their non-BED obese counterparts and report higher levels of distress regarding their physical health (White & Gianni, 2013). This increase in health problems may in part be due to metabolic abnormalities resulting from the consumption of large amounts of food in a short period of time (White & Gianni, 2013). The social and economic costs associated with overweight and obesity are significant, with illnesses such as heart

disease, type II diabetes, and certain cancers at an all time high, and the cost of health care and lost production estimated at almost one billion dollars over a 10 year period (Mathers, Vos, & Stevenson, 1999). Not only do overweight and obesity have profound health costs, they also have negative social consequences.

The social consequences of overweight and obesity are reflected in societal bias and negative attitudes. In western society, people who are overweight or obese are subjected to negative stereotypes that have far reaching consequences in terms of quality of life and social and psychological well-being. Puhl and Heuer (2009) conducted a systematic review of the literature, and noted that common perceptions in western societies are that overweight and obese people are lazy and unmotivated, are incompetent and undisciplined, and are less attractive than people who are normal weight. They assert that the research has demonstrated that these viewpoints lead to discrimination against overweight and obese people in educational, work place, and healthcare settings as well as impacting interpersonal relationships.

Measures for the Assessment of Binge Eating Disorder

Given the prevalence and high degree of psychosocial and medical impairment associated with BED, its detection via accurate assessment is paramount. Assessment of binge eating involves the use of self-report questionnaires and investigator-based interviews. Accurate BED assessment poses a challenge as most assessment methods rely heavily on an individual's recall of their binge eating behaviour. Binge eating episodes are often conducted when the individual is alone, providing little in the way of naturalistic opportunity to objectively observe behaviour (Wilfley, Schwartz, Spurrell, & Fairburn, 1997). Additionally, individuals with BED frequently report feeling numb and disconnected when they are binge eating, thus impacting their ability to accurately recall the type and quantity of food eaten and affecting the

validity of self-report measures (Wilfley et al., 1997). Despite these challenges, it is commonly accepted that investigator-based interviews are the most valid means of assessing eating disorders, including BED. Interviews have several advantages over self-report questionnaires. Firstly, the investigator is able to accurately define and ensure accurate understanding of terms, for example, what is meant by the term binge eating (Fairburn & Cooper, 1993). Secondly, the investigator is able to assist the individual to reconstruct the details regarding their binge episodes (Wilfley et al., 1997), thus improving the validity of self-report.

The Eating Disorders Examination (EDE) is a semi-structured investigator-based interview that examines binge eating behaviour, compensatory behaviours, and other cognitive and behavioural features associated with eating disorder psychopathology (Barnes, Masheb, White, & Grilo, 2011). The EDE consists of four subscales: dietary restraint, shape concerns, weight concerns, and eating concerns. It also provides frequency ratings of binge eating and distinguishes objective from subjective binge eating and objective overeating (Wilfley et al., 1997). It is routinely used in research settings and is considered gold standard in the assessment and diagnosis of BED. However, the EDE requires extensive training and is time consuming to deliver, rendering it impractical to use in the majority of clinical settings and certain research settings (e.g., research entailing online administration) (Wildes & Marcus, 2010). Thus, the EDE-Q, a self-report questionnaire version of the EDE, can be used to address these concerns (Barnes et al., 2011). The EDE-Q has been found to provide a valid measure of eating disorder symptoms and has a strong convergence with the EDE in both research and clinical settings (Berg, Peterson, Frazier & Crow, 2011).

Risk Factors for the Development of Binge Eating Disorder

In addition to accurate assessment, efforts to prevent and treat BED are aided by an accurate understanding of its risk factors. The risk factors for the development of BED are a complex mix of biological and environmental factors. Heritability, childhood obesity, and childhood maltreatment are risk factors identified in the literature for the development of BED and other eating disorders (Tanofsky-Kraff et al., 2013). The interplay between each of these factors is thought to either protect the individual against developing disordered eating or leave them vulnerable to disturbances in eating, weight control, and body image (Blaase & Elklit, 2001).

Heritability. The role of heritability as a risk factor for BED has been examined in family and twin studies. Family studies examine patterns of familial aggregation of BED among first-degree relatives such as parents, children, and siblings (Bulik & Trace, 2013). Several researchers have used a family study design to investigate whether BED runs in families. For example, Hudson and colleagues (2006), in a large direct-interview study, examined whether BED aggregated in families independent of obesity. The researchers interviewed overweight or obese participants with BED ($n = 150$) and without BED ($n = 150$) as well as their first-degree relatives ($n = 888$). They found that BED aggregated strongly in families independent of obesity. Although this suggests that a family history of BED is a risk factor for the development of the disorder, family study designs have limitations. Firstly, family study designs can determine whether BED runs in families, however offer little in the way of explaining why BED runs in families and, in particular, whether this is due to genetic and/or environmental (e.g., social modelling) factors (Bulik & Trace, 2013).

Twin studies afford a greater (though imperfect) separation of genetic and environmental influences in the risk of developing certain diseases. Three specific familial components are used to estimate the heritability of BED when examining monozygotic versus dizygotic twins: additive genetic factors, shared environmental factors, and unique environmental factors (Bulik & Trace, 2013). Additive genetic factors are the “cumulative effects of many genes, each of which has a small to moderate contribution” (Bulik & Trace, 2013, p. 29) to the variance in susceptibility to BED. These effects are thought to be in operation when monozygotic twin correlations are twice as strong as dizygotic twin correlations. On the basis of twin studies, researchers have estimated that BED is moderately heritable, with estimate rates above 40% (Bulik, Sullivan, & Kendler, 1998; Klump, McGue, & Iacono, 2002; Root et al., 2010). Yet twin studies also have their limitations. Although genes are implicated in the development of BED, twin studies have not identified which genes are important and there is limited understanding of how these genes work (Bulik & Trace, 2013). In addition, environmental factors may be operative in the elevated rates of BED in monozygotic compared to dizygotic twin pairs given the possibility that identical twins are treated more similarly than non-identical twins. However, with these caveats in mind, family and twin studies suggest that heritability is an important factor in the development of BED and future research regarding the treatment of BED may benefit from addressing the issue of biological vulnerability.

Environmental factors. The role of biology in BED, however, contributes only part of what we know about risks factors for the disorder, with environmental factors also implicated in the development of BED. Childhood maltreatment, typically in the form of child abuse and neglect, is frequently cited as a risk factor for BED and other forms of eating pathology (Karr, Simonich, & Wonderlich, 2013). However, the

relationship between childhood maltreatment and BED is poorly understood. Studies examining this relationship are able to identify correlates of disorders, however casual associations are unclear. For example, Grilo and Masheb (2001) investigated the rates of reported childhood maltreatment in a sample of 145 (34 and 111 women) patients with BED. The researchers examined various forms of maltreatment (emotional, physical, and sexual abuse, and emotional and physical neglect) and their association with gender, eating pathology, and psychological functioning. They found that 83% of the sample reported at least one form of childhood maltreatment. Specifically, 59% of participants reported emotional abuse, 69% emotional neglect, 36% physical abuse, and 49% physical neglect. Sexual abuse was reported in 30% of the sample. Grilo and Masheb indicate that these rates of maltreatment are two to three times higher than the normative sample. Furthermore, when they examined the relationship between maltreatment and psychological functioning, they found that emotional abuse was significantly associated with lower self-esteem and higher body dissatisfaction and depression (Grilo & Masheb, 2001).

Fairburn and colleagues (1998) highlight several other forms of childhood emotional abuse that are associated with BED: repeated exposure to teasing and bullying, and negative comments about weight and shape. In a large community-based study, the researchers examined childhood experiences of individuals with BED compared to individuals without an eating disorder in the period preceding the development of BED. They found that individuals with BED reported higher rates of exposure to criticism and lack of affection from parents. Additionally, parental under involvement and appearance-related teasing were reported at higher rates in the BED sample compared with healthy controls.

In addition to adverse childhood experiences and maltreatment, childhood obesity has been implicated as a potential risk factor in the development of BED. A number of case-controlled studies (Fairburn et al., 1998; Striegel-Moore, et al., 2005) have found a positive relationship between BED, severity of childhood obesity, and family eating patterns. These studies indicate that individuals with BED have higher rates of exposure to family overeating and binge eating as children compared to individuals without BED diagnoses, suggesting a role for familial modelling of maladaptive eating behaviours in the development of BED. Prevalence rates of overweight and obesity in children and adolescents are rising, and are estimated to be as high as 50% worldwide (Puhl & Latner, 2007), potentially placing a significant number of young people at risk for the development of BED and other forms of pathology such as low self-esteem and depression.

Summary

In sum, BED is a prevalent and often chronic condition that is thought to develop as a consequence of the interplay between biological, psychological, and environmental factors related to heritability and childhood obesity and maltreatment. BED is associated with significant physical and psychosocial impairment, with individuals experiencing low self-esteem, problems with affect regulation, body image disturbances, and rates of anxiety and depression that are comparable to other clinical populations. Individuals with BED also experience significant problems with overweight and obesity, and related health conditions such as heart disease and type II diabetes. The disorder's prevalence, together with its serious and wide-ranging morbidity, underscores the importance of efforts designed to understand its aetiology and hence most effective treatments.

CHAPTER 3.

AETIOLOGICAL PERSPECTIVES ON BINGE EATING DISORDER

There are a number of extensively researched theories that attempt to provide explanations for the development and maintenance of BED. This chapter reviews the main theoretical explanations for BED: the Addiction Model, Restraint Theory, Escape Theory, Expectancy Theory, the Dual Pathway Model, and the Affect Regulation Model.

The Addiction Model

The Addiction Model was originally developed to explain the aetiology of substance use disorders. Subsequent to the development of this model, a high level of co-morbidity between BED and substance use disorders, particularly alcohol abuse, was observed (Cassin & von Ranson, 2007). This observation led to an examination of how the Addiction Model might also explain the aetiology of BED. Proponents of an Addiction Model for binge eating assert that BED and substance use disorders exhibit compellingly similar clinical and behavioural features that justify the conceptualisation of BED as an addictive disorder (Davis & Carter, 2009).

One of the shared features of substance use disorders and BED, and a key aspect in the argument for applying a disease model of addiction to BED, is the concept of loss of control. In the Addiction Model it is asserted that, in vulnerable individuals, the ingestion of a substance triggers an uncontrollable biochemical reaction that overrides an ability to make choices regarding whether or not to keep using the substance even if the substance is causing harm to the individual. In applying the Addiction Model to BED, it is asserted that certain individuals are vulnerable to addiction due to a biologically-based predisposition (Davis & Carter,

2009). In an environment in which addictive, or 'toxic', foods are readily available, the individual is at an increased risk of developing an addiction. Foods considered to be addictive are those that are high in fat and sugar. In a similar manner to substance abuse, these individuals continue to consume these foods despite negative outcomes, such as weight gain and medical complications such as diabetes mellitus and hypertension. Researchers argue that the biologically-based vulnerability is due to a hyper-reactivity to the hedonic properties of food. This hyper-reactivity, combined with living in an environment in which highly palatable foods (i.e., those that are high in sugar and fat) are readily accessible, results in a physiological addiction to food (Cassin & von Ranson, 2007). From the perspective of this model, a total abstinence from foods considered to be 'toxic' or addictive is required in order to treat binge eating (Cassin & von Ranson, 2007).

A further point that is often cited as justification for BED to be considered as an addiction is that individuals with BED exhibit similar cravings, tolerance, and withdrawal symptoms to individuals with substance dependence. With regard to cravings, Yanovski (2003) asserts that individuals with BED exhibit an 'enhanced preference' for high sugar and fat content foods, and experience higher rates of cravings for foods high in carbohydrates, sugar, and saturated fat, compared to those without BED (Davis & Carter, 2009). Also akin to those with substance dependence, individuals with BED have a higher tolerance to toxic foods in that they require increasing amounts of the toxic food to produce a desired effect. They also experience withdrawal symptoms if the food consumption is reduced or ceased (Wilson, 1991). Davis and Carter (2009) argue that the concepts of tolerance and withdrawal can explain the progression of BED and use evidence from animal studies to support this argument. For example, research has demonstrated that animals that are fed a diet

high in sugar will increase their daily food intake over time, and exhibit symptoms consistent with opiate withdrawal when sugar is removed. It is argued that these studies have particular relevance for BED because binge foods are typically high in sugar content.

There is much about the Addiction Model that has proven popular in medical settings and in the community in general (Wilson, 2010). The model offers a seemingly logical and clear understanding of BED. Yet, despite its popularity, there exists a plethora of research that does not support its main premises. Laboratory studies examining eating behavior in individuals with a range of eating pathology have not supported the assertion that individuals with BED demonstrate an enhanced-preference for addictive foods such as carbohydrates and sugar (Benton, 2010; Toornvliet et al., 1997). In fact, the macronutrient intake of individuals with bulimic symptoms (i.e., binge eating) has been demonstrated to be similar to non-bulimic controls (Walsh, 1993). Additionally, Wilson (2010) argues that defining BED as an addictive disorder just because loss of control is present in both BED and substance dependence is flawed. He argues that loss of control is also present in a subset of individuals with anorexia nervosa and certainly in all cases of bulimia nervosa. Wilson asserts that although eating and substance use disorders share similar features (i.e., loss of control and over consumption of food or substances), the core psychopathology of eating disorders (i.e., the overvaluation of body shape and weight on self-evaluation) is fundamentally different from addiction, and far more complex than just the loss of control exhibited in binge eating. Additionally, epidemiological data regarding eating pathology indicate that although BED is significantly associated with substance dependence, this association is not specific to BED; substance use disorders are also known to be co-morbid with many psychiatric disorders (Kushner,

Sher, & Beitman, 1990).

Another reason for suggesting that the aetiological underpinnings for BED and substance use disorders are different is the fact that treatment approaches for both disorders are diametrically opposed. If BED and substance misuse have the same aetiology, then the treatment approaches should be the same, yet this is not the case. Wilson (2010) argues that there are no treatment outcome studies that demonstrate the efficacy of treatment for BED (or other eating disorders) from an addiction perspective. For instance, treatments for addictions encourage restriction or even abstinence from the substance. However, as initially proposed in the Restraint Theory of eating disorders, the process of restriction is viewed as pathogenic.

Restraint Theory

One of the earliest models for understanding eating disordered behaviours is Restraint Theory; a theoretical paradigm that asserts that dietary restraint causes binge eating (Herman & Polivy, 1988). In this model, chronic and prolonged dietary restraint (characterised by deliberate and persistent attempts to restrict and control food and calorie intake) increases an individual's vulnerability to binge eating (Johnson, Pratt, & Wardle, 2012). Restraint Theory proposes that restrained eaters use cognitive control processes, such as cognitive eating boundaries that involve the use of food consumption quotas (Herman & Polivy, 1984). The cognitive eating boundaries are typically characterised by rigid rules regarding (a) the type of food eaten (i.e., low calorie) and (b) the permissible amount of food eaten in order to control weight and shape. A central argument in this theory is that the process of chronic and prolonged dietary restraint induces physiological and psychological counter-regulatory processes that lead to loss of control over eating (Johnson et al., 2012).

Physiologically, restrained eating results in increasing levels of hunger, craving, and starvation, which promote overeating. In addition, Ogden & Flanagan (2008) argues that restrained eating results in a reduced sensitivity to signals of being full, so that a violation of diet boundaries results in an over consumption of food in order for satiety to be activated. In this sense, dietary restraint promotes binge eating.

In addition to physiological mechanisms, psychological factors are also implicated in the nexus between dietary restraint and binge eating. The main tenet of Restraint Theory is that restrained eaters typically exhibit an inflexible and rigid cognitive style resulting in dichotomous, all-or-nothing thinking in relation to dieting (Guertin, 1999). When dietary boundaries are transgressed, cognitive responses such as “I’ve blown it now, I might as well keep eating” or “What the hell” allow disinhibited eating to occur (Herman & Polivy, 1984; Polivy & Herman, 1985). In addition to this cognitive style, restrained eaters also exhibit a tendency to make cognitive attributions about specific foods on a “good” to “bad” continuum dependent on fat, calorie, and carbohydrate content and associated weight gain (Guertin, 1999). Consuming “bad” foods may result in perceptions that a dietary boundary has been violated resulting in “What the hell” responses (Guertin, 1999). According to Restraint Theory, the use of cognitive control to modulate eating rather than attending to signals of fullness and hunger (appetitive cues) leads to disinhibited eating in situations where cognitive control is undermined, such as experiencing emotional distress or alcohol intoxication (Haedt-Matt & Keel, 2011). Indeed, research demonstrates that individuals who exhibit flexibility regarding eating boundaries such as “I can eat small amounts of fattening foods occasionally and maintain a healthy weight” tend to experience fewer triggers for binge eating (Herman & Polivy, 1988).

Extensive research has been conducted on the role of dietary restraint in binge eating. The influence of dietary restraint on eating behaviour was first examined in an experiment conducted by Herman and Mack in 1975 using a preload/taste-test paradigm. In this experiment, participants were given either a high or low calorie food (preload) and were then asked to take part in a taste-test of a variety of foods. Participants who identified as dieters (i.e., regularly engaged in restrained eating) consumed significantly more than non-dieters during the taste-test if they had consumed a high-calorie preload, consistent with the notion that the perception of having violated dietary rules results in a vulnerability to overeat among restrained eaters. Subsequent research utilising retrospective, experimental, and some naturalistic studies have demonstrated that restricting food intake, in certain circumstances, causes over-eating and binge eating (Agras & Telch, 1998; Steiger, Lehoux & Gauvin, 1999; Polivy & Herman, 1985; Wardle & Beales, 1988).

While there is extensive research supporting the role of dietary restraint in eating pathology, Restraint Theory is not without its criticism. There are a number of criticisms of this theory as a causal explanation for the development of binge eating. Firstly, epidemiological and clinical trials have not consistently supported Restraint Theory's central proposition that dietary restraint causes overeating and binge eating (Johnson et al., 2012), while laboratory studies are limited. Specifically, Johnson and colleagues (2012) criticise the ecological validity of the main methodology involved in researching Restraint Theory. They argue that laboratory eating behaviour, where, for example, restrained eaters transgress cognitive eating boundaries as a result of eating calorific preloads, do not necessarily result in behaviour that can be directly extrapolated to real-world settings. Several studies have monitored the eating behaviour of restrained eaters in naturalistic settings following laboratory induced

disinhibited eating. These studies found that following the calorific preload, restrained eaters did not exhibit further disinhibition and did not consume more food throughout the day (Tomiyama, Moskovich, Haltom, Ju, & Mann, 2009; Wardle & Beales, 1988). This suggests that the eating behaviour observed in laboratory settings does not necessarily reflect natural eating behaviour. Adding to the criticism of Restraint Theory, some intervention studies have demonstrated that increases in dietary restraint (in the form of healthy dietary behaviours) *reduce* the frequency and intensity of binge eating in obese individuals, due to the adoption of moderate restraint and regular eating. In these studies, individuals are not engaging in restrained eating in the form of skipping meals which leaves them vulnerable to binge eating, but instead engage in eating regularly, and eating recommended portion sizes (Ouwens, van Strien, van Leeuwe, & van der Staak, 2009; Stice, Presnell, Groesz, & Shaw, 2005). Additionally, in non-eating disordered populations, chronic restraint is associated with fewer eating control problems and an increase in long-term weight suppression (Johnson et al., 2012). This research indicates that individuals who are able to successfully lose weight and maintain that weight loss engage in restrained eating on an ongoing basis. One possible way to understand this research in the context of Restraint Theory is that it is only when the cognitive rules regarding eating behaviour become rigid and extreme that they become problematic. It is possible that the cognitive rigidity exhibited by restrained eaters may increase vulnerability to binge eating, whereas flexible and moderate restraint acts as a protective factor against binge eating.

Furthermore, research suggests that not all individuals who engage in dietary restriction will develop an eating disorder (Johnson & Wardle, 2005). For example, in a longitudinal study that examined abnormal eating patterns in 735 adolescent girls,

Patton and colleagues (1990) found that all girls who developed anorexia nervosa had engaged in restrained eating in the form of dieting. However, the majority of girls who were identified as dieters (i.e., 'restrained eaters') did not go on to develop an eating disorder. In addition research suggests that up to 50% of BED patients experience significant difficulties with binge eating behaviour before engaging in significant dietary restraint, indicating that restraint did not cause the binge eating behavior (Johnson & Wardle, 2005). Taken together, these criticisms suggest that Restraint Theory is insufficient as an explanation for the development and maintenance of BED.

Escape Theory

Notwithstanding the criticisms of Restraint Theory, another theory also postulates a role for dietary restraint in triggering binge eating, namely, Escape Theory. Developed by Heatherton and Baumeister (1991), Escape Theory asserts that binge eating occurs in the context of aversive self-awareness and negative affect. They argue that individuals who engage in binge eating exhibit high personal expectations and standards related to their shape, weight, and achievement more broadly. According to Escape Theory, these individuals have a strong desire to be perceived favourably by others and believe that people are closely and critically monitoring their appearance and behaviour. The inability to consistently meet these perceived high expectations and standards results in aversive self-assessments (such as "I'm inadequate" and "I'm a failure") and negative emotions such as anxiety and depression. This combination of aversive self-awareness and negative affect is experienced as highly distressing by the individual and results in a strong desire to reduce self-awareness and escape.

Escape theory suggests that, when aversive self-assessments and negative emotions are triggered, individuals use an escape strategy called “cognitive narrowing” which narrows awareness to the immediate environment or to stimuli such as the taste and smell of food. Whilst focussing on these concrete aspects of the immediate environment, meaningful interpretations such as attributions, comparisons against standards, and consequences of one’s actions are no longer readily accessible, and distressing emotions are therefore reduced. However, according to Escape Theory this cognitive narrowing also reduces an individual’s capacity to adhere to strict dietary rules and, as a result, may then trigger previously inhibited behaviours such as binge eating. As a consequence of this loss of inhibition, individuals tend to then attribute negative affect to the binge eating episode rather than the aversive self-awareness caused by failure to meet personal standards and expectations, thereby again providing some degree of protection against the initial, even more aversive states of self-awareness. This process is thought to perpetuate the long-term problem of binge eating due to the fact that binge eating provides comfort and distraction from negative emotional states and aversive self-awareness.

Escape Theory is frequently cited in the literature as an explanation for the development and maintenance of BED. There is research demonstrating support for individual components of the model, such as cognitive narrowing of attention and self-focus (Blackburn, Johnston, Blampied, Popp, & Kallen, 2006), and aversive self-awareness (Kenardy, Arnow, & Agras, 1996). However, a limitation of Escape Theory is that the model does not fully account for all the factors involved in BED.

Expectancy Theory

Similar to Escape Theory, Expectancy Theory highlights the importance of negative mood in triggering binge eating. Indeed, this approach has been applied to a

variety of health behaviours, such as alcohol use and pathological gambling (Fischer & Smith, 2008; Hayaki, 2009). In the context of binge eating research, Expectancy Theory asserts that binge eating develops as a result of the beliefs individuals have regarding the power of eating in reducing negative mood (Hayaki, 2009). Haedt-Matt and Keel (2011) note that, “eating expectancies (i.e., beliefs that eating will reduce negative mood or will be rewarding) have been linked to the later development of bulimic symptoms as well as the maintenance of bulimic syndromes” (p. 4).

Researchers have demonstrated that individuals with bulimic and binge eating symptoms report stronger expectations of eating as a means of regulating negative affect, as compared to individuals with other eating disordered behaviours, individuals with other psychiatric disorders, or normal controls (Hohlstein, Smith, & Atlas, 1998; Simmons, Smith, & Hill, 2002). Expectancy Theory has also been supported by a number of prospective and longitudinal studies examining the relationship between cognitive expectancies and binge eating (Bohon, Stice, & Burton, 2009; Hayaki, 2009; Smith, Simmons, Flory, Annus, & Hill, 2007).

Dual Pathway Model

The Dual Pathway Model contains element of Restraint Theory, Escape Theory, and Expectancy Theory. Developed by Stice in 1994, the Dual Pathway Model is a sociocultural model regarding the development of binge eating. In this model, sociocultural pressures to be thin result in an internalisation of the “thin ideal” in vulnerable individuals (Stice, Nemeroff, & Shaw, 1996). Internalisation of the thin ideal is thought to produce significant dissatisfaction with one’s weight and shape, also referred to as body dissatisfaction (Stice et al., 1996). The Dual Pathway Model postulates that body dissatisfaction and binge eating are linked through two pathways, namely, dietary restraint and negative affect (Stice, 2001). In the first pathway

(dietary restraint), individuals engage in restrictive eating due to the belief that eating less than desired will result in weight loss (Van Strien, Engels, Van Leeuwe, & Snoek, 2005). However, restrained eating increases the likelihood of binge eating due to the physiological (e.g., hunger and reduced sensitivity to the signals of satiety) and psychological (cognitively-produced disinhibition) mechanisms involved (Stice et al., 1996). In the second pathway (negative affect), body dissatisfaction triggers a range of negative emotions such as depression, guilt, and shame, and binge eating functions as an attempt to regulate these emotions (Van Strien et al., 2005).

Support for the Dual Pathway Model has been demonstrated in a number of studies such as the work of Shepherd and Ricciardelli (1998). They examined whether negative affect and dietary restraint mediated the relationship between body dissatisfaction and bulimic behaviours (including binge eating) in a sample of 412 students, and found that both dietary restraint and negative affect partially mediated the relationship between body dissatisfaction and bulimic behaviours including binge eating.

Although there is robust evidence demonstrating the association between body dissatisfaction and dietary restraint, a criticism of the Dual Pathway Model (akin to the Restraint Model) is that the evidence supporting the link between dietary restraint and binge eating is inconsistent, especially among individuals with BED (Van Strien et al., 2005). This approach is also limited by suggesting that body dissatisfaction is the sole trigger for negative affect.

Affect Regulation

In terms of the theoretical models considered thus far, Haedt-Matt and Keel (2011) point out that, “taken together restraint, escape and expectancy theories all

predict that increases in negative affect will lead to binge eating, but do not propose that binge eating episodes are maintained by post-binge reductions in negative affect” (p. 4). An alternative approach, the Affect Regulation Model, asserts that it is the *actual reduction of negative affect* as a result of binge eating that maintains the behaviour. More specifically, the Affect Regulation Model proposes that binge eating behaviour is negatively reinforced through *actually* decreasing negative affect, as opposed to *expected* consequences (Haedt-Matt & Keel, 2011). In this model, negative mood states trigger urges to binge eat because eating provides actual comfort and distraction from thinking about distress and the physiological effects associated with negative moods and emotions (Haedt-Matt & Keel, 2011).

In the Affect Regulation Model, at the core of emotion regulation problems is the suppression and avoidance of a variety of stressors. These stressors include unwanted thoughts and emotional arousal. Attempts at suppressing unwanted thoughts tend to produce increases in not only these thoughts, but also emotional arousal and its physiological manifestations (Aldoa, Nolen-Hoeksema, & Schweitzer, 2010). Repeated attempts to suppress thoughts in turn prevent habituation to emotional stimuli, resulting in hypersensitivity to emotion related thoughts and symptoms (Aldoa et al., 2010). Additionally, emotion regulation problems are exacerbated by repeated attempts to actively avoid, escape or alter sensations, memories, and urges in addition to unwanted thoughts and emotions and the contexts that elicit them; referred to as experiential avoidance (Haedt-Matt & Keel, 2011). As suggested in Escape Theory, experiential avoidance in the form of binge eating therefore provides a temporary escape from aversive self-awareness and stimuli. However, in the Affect Regulation Model, experiential avoidance has an additional aspect; namely, following temporary escape, experiential avoidance exacerbates negative moods as it

paradoxically increases negative thoughts and prevents the use of adaptive coping skills (Hayes et al., 1999).

The role of negative affect in the development and maintenance of binge eating has been well established in many studies examining their relationship (Arnou et al., 1992; Berg et al., 2013; Lampard, et al., 2011; Munsch, et al., 2012; Pollert et al., 2013; Stice, 2002). Studies have demonstrated that individuals with BED are likely to experience more negative moods and experience more difficulty regulating these moods compared to healthy controls (Kenardy, et al., 1996). Furthermore, studies have demonstrated that these negative moods are prominent antecedents for binge eating (Arnou, et al., 1992). Binge eating acts as a way of coping with negative emotions, and negative affect increases both attraction to food and desire to eat due to the association between eating food and reducing the intensity and awareness of negative affect (Zeeck, et al., 2010).

In one study examining the Affect Regulation Model, Arnou et al. (1992) assessed the precipitants of binge eating in a group of 19 obese women. Thoughts, feelings, and physical sensations before, during, and after binge eating episodes were elicited as well as antecedent events related to binge eating. Arnou and colleagues found that negative affect such as anger, anxiety, and depression was cited by participants as the main causal factor in triggering binge eating, and cognitions such as “If I eat this food, I will feel better” dominated thinking prior to binge eating. During binge eating, participants reported *actually* experiencing feelings of warmth and pleasure, however these feelings were not maintained following the binge episode. While entailing a small sample size, this study provides initial support for the Affect Regulation Model of binge eating, that is, binge eating is an attempt to cope with feelings of dysphoria, which reduce during binge eating. Moreover, as a possible

consequence of experiential avoidance, the study demonstrated that binge eating provided initial but not ongoing relief from negative affect.

Similarly, Berg et al. (2013) examined the relationship between negative affect and binge eating using ecological momentary assessment (EMA) in a sample of 133 women diagnosed with bulimia nervosa. In this study the authors examined four facets of negative affect in 1088 episodes of binge eating without compensatory behaviour (such as self-induced vomiting), compensatory behaviours without binge eating, and a combination of binge eating and self-induced vomiting. They found that feelings of fear, guilt, hostility, and sadness increased in the hours prior to binge eating and decreased in the hours following episodes of binge eating with and without self-induced vomiting. The design of this study, namely the use of EMA and large sample size, strengthens the reliability and validity (including the ecological validity) of its findings, which highlight the important role of affect in binge eating, thereby providing support for the Affect Regulation Model.

As previously indicated, experiential avoidance is an important component of the Affect Regulation Model of binge eating. Two recent studies have illustrated the mediating role of experiential avoidance in the relationship between negative affect and binge eating. Kingston, Clarke, and Remington (2010) explored the role of experiential avoidance in a range of commonly occurring problem behaviours (including binge eating). The authors recruited a clinical sample of 290 men and women who identified as currently or previously receiving treatment for a psychological problem. Eight categories of behaviours were examined: binge eating, deliberate self-harm, sexual promiscuity, excessive internet use, excessive alcohol use, illicit drug use, and aggression. The authors examined the degree to which these behaviours co-varied and whether experiential avoidance was a predictor of that co-

variation. Their findings suggested that a single underlying factor of experiential avoidance accounted for the associations between all eight problem behaviours. Given the role of experiential avoidance as a central variable in a range of diverse problem behaviours, the authors suggest that psychological interventions should target experiential avoidance regardless of its diverse behavioural manifestations (Kingston et al., 2010).

In another study on experiential avoidance in the context of binge eating, Lillis, Hayes, and Levin (2011) examined the impact of changes in experiential avoidance on binge eating in a sample of 83 participants seeking treatment for weight loss. The researchers randomly assigned participants to either a one-day workshop on Acceptance and Commitment Therapy (ACT) or to a wait-list control group. The one-day ACT workshop taught skills on acceptance, mindfulness, defusion, as well as clarification of life values, barriers to their implementation, and engaging in behavioural commitments related to life values (Lillis et al., 2011). The ACT intervention was found to decrease self-reported binge eating and weight-specific experiential avoidance from baseline to the three-month follow-up. Additionally, treatment effects on binge eating were mediated by reductions in weight-specific experiential avoidance immediately following the workshop and at the three-month follow-up (Lillis et al., 2011).

Summary

The association between binge eating and negative affect has been extensively examined in the eating disorder literature. Whilst each theoretical model outlined in this chapter has its limitations, they all share considerable overlap regarding the role of negative affect in binge eating behaviour. The association between binge eating

and negative affect thus underpins the main theoretical models on the development and maintenance of BED.

In Restraint Theory, the role of cognitive control in regulating food intake in individuals who exhibit chronic dietary restraint is central. However, Restraint Theory also emphasises the importance of negative affect in triggering binge eating.

Similarly, Escape Theory is a cognitive model that asserts that binge eating reduces negative affect by narrowing attention from higher-level cognition (i.e., failing to meet personal standards) to immediate stimuli (i.e., taste and smell of food). Binge eating is maintained as it provides an escape from aversive self-awareness.

Expectancy Theory highlights the role of eating expectations and beliefs regarding the affect regulation properties of binge eating. The Dual Pathway Model emphasises the role of the internalisation of the thin ideal in producing negative affect, which in turn leads to binge eating to reduce that negative affect. Finally, the Affect Regulation Model is based on an assumption that food intake reduces negative emotions by providing comfort and distraction from unpleasant experiences, regardless of the causes of the negative affect. In examining the theoretical models, it is clear that regulation of affect is a key factor in the development and maintenance of BED.

Arguably, the treatment of BED, therefore, would benefit from a focus on improving individuals' capacity to regulate negative affect through the development of adaptive affect regulation skills.

CHAPTER 4.

PSYCHOLOGICAL TREATMENTS FOR BINGE EATING DISORDER

Treatment for BED has largely evolved from the research and treatment approaches for bulimia nervosa. The research on BED interventions indicates that, while treatment for many individuals can be effective in reducing binge eating, a significant proportion of individuals with binge eating problems remain symptomatic following treatment. This chapter reviews and summarises the current treatment approaches for BED: Behavioural Weight Loss, Cognitive Behaviour Therapy, Cognitive Behavioural Self-Help, Interpersonal Psychotherapy, and Dialectical Behaviour Therapy. Additionally, this chapter highlights areas in which BED treatment can be refined and enhanced by introducing components from Acceptance and Commitment Therapy.

Behavioural Weight Loss

Under the term Behavioural Weight Loss (BWL) sit a number of different treatment approaches, however there are two common factors across all BWL interventions; namely, that they indirectly target binge eating through modifying problematic eating patterns and increasing physical activity designed to induce weight loss (Accurso & Sanchez-Johnsen, 2013). Behavioural weight loss treatments were originally designed to treat overweight and obesity. Due to the high prevalence of BED amongst the overweight and obese population, as well as the fact that the majority of individuals with BED are overweight or obese, they have been applied to the treatment of BED (Accurso & Sanchez-Johnsen, 2013). The treatment is predominantly facilitated in a group format, with the duration of treatment lasting between four and six months (Accurso & Sanchez-Johnsen, 2013). Behavioural

weight loss programs involve a series of skills-based components such as goal-setting, self-monitoring, nutrition education, increasing physical activity, controlling eating related stimuli, cognitive restructuring, interpersonal relationships, and relapse prevention and weight loss maintenance (Carels et al., 2011). These treatment components are described below.

A critical first step in BWL programs is the creation of specific, measurable, and attainable weight management goals, with the rationale that such goals facilitate a greater likelihood of success and a clear assessment of success. An important aspect of this goal-setting process is to identify what factors will enhance goal achievement, as well as potential barriers to change (Foster, Makris, & Bailer, 2005). As part of this process, and as a way of assessing goal attainment, self-monitoring of daily food intake and the amount of physical activity is undertaken. The rationale for this is that self-monitoring forms provide information about how well clients are progressing toward their goals and ongoing information about actual barriers to success (Accurso & Sanchez-Johnsen, 2013). If the desired behavioural changes are not implemented, problem-solving skills are taught to both overcome barriers to change and to increase adherence to the program (Accurso & Sanchez-Johnsen, 2013).

Behavioural weight loss treatments also focus on nutrition education and physical activity. In BWL programs, the emphasis is on moderate caloric restriction (e.g., reducing portion sizes), however such programs also encourage balanced eating that incorporates flexible food choices to combat rigid dieting (Accurso & Sanchez-Johnsen, 2013). Additionally, rather than advocating a short-term 'quick-fix' dieting approach, BWL interventions emphasise the need to incorporate life-long lifestyle changes to eating and physical activity patterns in order to achieve sustained weight loss and maintenance (Accurso & Sanchez-Johnsen, 2013). In terms of physical

activity, BWL programs encourage gradual lifestyle changes such as reducing sedentary behaviour, increasing activities of daily living (such as using stairs rather than elevators), and increasing light-intensity aerobic activity and structured exercise that is enjoyable in order to promote sustainable changes that facilitate weight loss and maintenance (Pearson & Grace, 2012).

Another component of addressing eating behaviour in BWL is controlling eating-related stimuli. This involves developing self-regulatory strategies (stimulus control) that enhance the individual's ability to identify and modify cues (such as eating in front of the television or computer screen) that both reduce awareness of how much food is consumed and satisfaction from eating the food, thereby increasing the likelihood of problematic eating (Pearson & Grace, 2012).

Interpersonal relationships are also addressed in BWL programs, given that interpersonal difficulties can act as triggers for overeating and barriers to implementing the treatment. For instance, BWL treatments encourage utilising social support in the form of family, friends, and others to influence motivation (such as through encouragement and praise for changing dysfunctional behaviours) and self-efficacy (Pearson & Grace, 2012). Clients are encouraged to identify types of helpful support within their social network and to utilise these individuals as sources of positive support for weight control (Accurso & Sanchez-Johnsen, 2013). Another important component of BWL interventions is cognitive restructuring that targets the dysfunctional thinking associated with weight-related goals (e.g., dichotomous thinking such as, "I'll never eat junk food again" and "I need to lose 30 kg otherwise I've failed") (Accurso & Sanchez-Johnsen, 2013).

The final phase of BWL programs focus on relapse prevention and weight loss maintenance. This phase is particularly important due to the high frequency of relapse following weight loss. Strategies that assist the individual to manage the normal process of setbacks such as developing a change plan, active problem-solving, and revisiting motivation for change are highlighted as important aspects of long-term weight loss maintenance (Pearson & Grace, 2012).

Behavioural weight loss interventions can reduce binge eating and have several advantages compared to other psychological treatments for BED. Firstly, BWL can be administered by a broad range of health professionals (such as dieticians) as it does not require the same level of training and clinical expertise as other specialised treatments such as cognitive behaviour therapy (CBT) (Accurso & Sanchez-Johnsen, 2013). Additionally, BWL programs can be more readily disseminated in community settings such as community health centres and are more cost-effective than other psychological treatments (Accurso & Sanchez-Johnsen, 2013). This is due to the fact that the level of expertise required to deliver a BWL program is less than that required of other interventions such as CBT (Accurso & Sanchez-Johnsen, 2013). Another advantage of BWL approaches is that they are more efficacious at producing short-term weight loss in obese individuals with BED compared to treatments such as CBT, however this weight loss is not maintained over time (Accurso & Sanchez-Johnsen, 2013).

Research on BWL programs has resulted in mixed findings regarding binge eating outcomes, with some research indicating favourable outcomes, whilst other research suggesting little improvement in binge eating (Kass, Kolko, & Wilfley, 2013). Moreover, research examining the efficacy of BWL programs in treating individuals with BED supports the argument that BWL treatments are not as effective

as specialist treatments in reducing binge eating (Iacovino et al., 2012). For example, Grilo and Masheb (2005) examined the efficacy of a therapist-guided BWL program compared to therapist-guided CBT in 90 participants with BED. They implemented a 12-week program that included a self-help manual based on either CBT or BWL and six brief (15 – 20 minute) fortnightly meetings with a therapist, who attended to motivational issues and clarifying any difficulties in understanding the content of the self-help manuals. The researchers found that at post-treatment, binge eating abstinence rates were significantly higher in the CBT group (46%) compared to the BWL group (18.4%). In another study, Munsch and colleagues (2007) trialled a 16-week group BWL treatment in 80 obese patients with BED and examined the impact of treatment on binge eating, BMI, and general psychopathology compared to CBT at post-treatment and six- and 12-month follow-ups. The researchers found that CBT was superior in reducing binge eating post-treatment, however there were no significant differences between BWL and CBT at 12-month follow-up. Grilo and colleagues (2011) also examined the efficacy of BWL compared to CBT in a sample of 125 obese individuals with BED. Behavioural weight loss treatment resulted in a 36% binge eating remission rate compared to 51% for CBT 12-months following treatment, pointing to BWL inferiority as a treatment for BED compared to CBT in terms of binge eating reduction.

Cognitive Behaviour Therapy

Manual-based cognitive behaviour therapy (CBT) is the most researched treatment for BED. Much of the CBT literature regarding BED treatment is based on studies examining the efficacy of CBT for bulimia nervosa (CBT-BN). CBT for BN was initially based on Restraint Theory, with the aim of addressing the “diet-binge cycle” that results from dysfunctional patterns of alternating between dietary restraint

and binge eating (Iacovino et al., 2012). However, in recent years an enhanced version of CBT has been developed to treat all forms of eating disorder psychopathology, including BED, and is recommended over CBT-BN as it has been designed to be a more potent treatment (Fairburn, 2008). This enhanced version of cognitive behaviour therapy (CBT-E) is based on a transdiagnostic view of eating disorders that emphasises their shared core psychopathology and maintenance mechanisms as well as the frequent cross-over between eating disorder diagnoses.

CBT-E can be delivered in two forms, a focused or broad version (Fairburn, 2008). Both versions are time-limited and are delivered over 20 sessions for individuals with BED. The focused version of CBT-E is currently viewed as the “default” version as it exclusively treats eating disorder psychopathology and is optimal for most patients (Fairburn, 2008; Murphy, Straebl, Cooper, & Fairburn, 2010). The broad version is a more complex form of CBT-E that addresses clinical perfectionism, low self-esteem, and/or interpersonal difficulties in addition to core eating disorder psychopathology for cases where these factors are relevant.

Prior to embarking on treatment, an assessment phase of two or more sessions is conducted to prepare the client for treatment and change. As with standard CBT, the CBT-E process is collaborative and is designed to assess the client’s suitability for treatment and any contraindications, such as persistent substance misuse, co-morbid clinical depression, and major life difficulties or crises (Fairburn, Cooper, Shafran, & Wilson, 2008). The assessment phase is also used as an opportunity to begin to engage and orient the client to treatment (e.g., through the collaborative development of the formulation), and to explore ways of overcoming any potential barriers to change (Murphy et al., 2010).

CBT-E is delivered in four defined stages. Stage 1 is intensive and is conducted twice weekly over four weeks, with an emphasis on establishing regular eating as regulated eating patterns help reduce the frequency of binge eating. The client is asked to eat three planned meals and two to three planned snacks, with no longer than four hours in between consumption, each day. Additionally, clients are encouraged to use distraction and urge surfing techniques to manage strong urges to binge eat.

Establishing regular eating is aided through the implementation of accurate, real-time self-monitoring of eating, eating disordered behaviours, and related thoughts, feelings, and events. Reviewing self-monitoring records occurs within each session and helps inform the agenda for the session. Regular eating is also aided by providing the client with psycho-education regarding the main myths about eating and weight control, as well as the physical and psychosocial effects of eating disorders (Fairburn et al., 2008).

During Stage 1 the therapist also establishes a pattern of weekly in-session weighing. The argument within CBT-E is that weekly weighing serves several functions. Firstly, weekly weighing allows the therapist to educate the client about body weight that assists the client to interpret the number on the scale, which they are often prone to misinterpreting. Secondly, in-session weighing provides the client with accurate data about their weight, and thirdly it addresses excessive body weight checking or its avoidance.

Stage 2 is a transitional stage in treatment and consists of two, weekly sessions. During this stage, the therapist and client conduct a joint review of progress, focusing on the extent of change, problems still to be addressed, and barriers to change (Murphy et al., 2010).

Stage 3 of treatment is delivered over eight weekly appointments and aims to address the key mechanisms that are maintaining the patient's binge eating. A key construct addressed in stage 3 is over-evaluation of shape and weight. Fairburn (2008) asserts that individuals with eating disorders judge their self-worth almost exclusively in terms of their weight and shape, and their ability to control them. As a consequence, other modes of self-evaluation are marginalised. According to Fairburn (2008), other features of the eating disorder, such as dieting, feeling fat, and body checking or avoidance, are secondary to the over-evaluation of shape and weight. Education about self-evaluation is provided to the client as a means of preparing for change. The over-evaluation of shape and weight is addressed by helping the client develop new domains for self-evaluation (particularly neglected social domains such as hobbies, friends, and family) and by reducing the importance of weight and shape (e.g., by enhancing other domains for self-evaluation).

Another component of Stage 3 is targeting mood intolerance. Key strategies entail problem solving, psycho-education, and cognitive restructuring. Thus only a limited range of affect regulation strategies are utilised. Moreover, mood intolerance is only one of many problems (along with, for example, shape and weight over-evaluation, shape checking and avoidance, and fat feelings) targeted in stage 3.

Stage 4 is the final stage in treatment and consists of three sessions conducted fortnightly. The main aim of Stage 4 is to ensure that the client maintains changes they have made during treatment, and to reduce the risk of relapse (Cooper & Fairburn, 2010). Clients gradually discontinue self-monitoring and begin weekly weighing at home. Treatment gains are maximised by the therapist and client collaboratively formulating a personalised plan for ongoing progress (Murphy et al. 2010). In order to reduce the risk of relapse, clients are taught to develop realistic

expectations regarding future problems with eating, to identify potential setbacks and view these as a lapse rather than a relapse, and utilise the strategies learned in treatment (Murphy, et al., 2009). Approximately 20 weeks after completing Stage 4, a review session is conducted with the client to review their relapse prevention plan and assess whether further treatment is needed.

While the efficacy of CBT-E for BED has yet to be investigated, other variants of CBT have been extensively studied, such that CBT is considered to be a well-established treatment for the disorder. The most comprehensive study of CBT for BED, and the most impressive in terms of treatment outcomes, was conducted by Wilfley and colleagues (2002). In this study, the researchers compared the efficacy of 20 weeks of group CBT and IPT in 162 individuals with BED. At post-treatment, binge abstinence rates were 79% for CBT and 73% for IPT and at the 12-month follow-up, abstinence rates were 59% and 62% for CBT and IPT, respectively, with no significant differences between the two approaches at either time point. Although binge eating remission rates had reduced (meaning that some individuals had recommenced binge eating) at follow-up, this study does demonstrate that CBT is an effective treatment over the long-term for a large porportion of individuals.

Subsequent studies examining the efficacy of CBT for BED have produced less impressive binge eating abstinence rates compared to the Wilfley et al. (2002) study. For example, Grilo and colleagues (2011) examined the efficacy of group CBT delivered over 16 sessions for 125 obese individuals with BED. They found that CBT produced binge eating remission rates of 44% post-treatment which rose slightly to 51% at 12-month follow-up. In another study, Ricca and colleagues (2010) examined the efficacy of individual CBT compared to group CBT delivered over 22 sessions to 144 individuals with BED. At post-treatment (24 weeks), the researchers found that

individual and group CBT produced significant binge eating remission rates of 33.3% and 16.7% respectively and 36.1% and 27.8% at the three-year follow-up. One of the distinct advantages of this study is that it examined the long-term efficacy of CBT in a large sample of individuals with BED. Other randomised controlled trials examining CBT for BED have yielded binge eating abstinence rates ranging from 28% to 61% (Agras et al., 1995; Grilo & Masheb, 2005; Wilfley et al., 1993).

Collectively, these studies provide support for CBT as an effective treatment for a significant proportion of individuals with BED. However, these studies (with the exception of the Wilfley et al. [2002] study) also highlight that a substantial proportion (approximately half) of individuals do not achieve abstinence from binge eating following treatment. This suggests that other treatment modalities need to be explored in order to achieve optimal treatment outcomes for individuals with BED. Another difficulty with the research on CBT for BED is that it is largely based on CBT-BN and not the enhanced form of treatment, CBT-E. Preliminary research (Fairburn et al., 2009) suggests that CBT-E may be more effective than the original protocol for bulimia nervosa and individuals previously diagnosed with eating disorder not otherwise specified (EDNOS). However, there are currently no studies that evaluate the efficacy of CBT-E for the treatment of BED.

Cognitive Behavioural Self-help

Evidence-based cognitive-behavioural self-help is a lower-intensity intervention that is often recommended as a first-step treatment for BED (National Institute for Health Care and Excellence, 2004). Self-help interventions involve individuals working more or less independently in utilising treatment manuals (e.g., Fairburn, 1995) or internet-based programs that contain psycho-education regarding the nature of BED and step-by-step instructions on how to develop skills to overcome

the disorder (Wilson & Zandberg, 2012). Like therapist-assisted CBT, self-help interventions involve establishing a pattern of regular and moderate eating, self-monitoring and the development of problem-solving skills and self-control strategies (DeBar et al., 2011). Interventions can be either self-directed (referred to as pure self-help), in which the individual follows a manual-based program on their own, or assisted by a health care professional, who provides support and helps facilitate the material contained in the treatment protocol (referred to as guided self-help) (Wilson & Zandberg, 2012). In guided self-help, the frequency and duration of sessions varies and the treatment itself can be delivered in a variety of ways: individuals can meet face-to face with a health care provider or the treatment can be delivered over the internet with e-mail or telephone support (Jenkins, Luck, Burrows, & Boughton, 2014).

Research demonstrates that pure and guided cognitive-behavioural self-help interventions are an effective first-line treatment for BED (Wilson & Zandberg, 2012), with some studies even showing that the guided form of self-help can be as effective as traditional CBT (Sysko & Walsh, 2008). In an early study, Carter and Fairburn (1998) examined the efficacy of both pure and guided self-help using Fairburn's (1995) *Overcoming Binge Eating*. Participants in the pure self-help condition were asked to work through the manual over a 12-week period and participants in the guided self-help condition were given six to eight 25-minute support sessions from non-specialists in addition to the self-help manual. The researchers found that while the guided form of self-help produced higher binge eating abstinence rates (50%) at post-treatment compared to the pure form (43%), no significant differences between the treatments were observed at the 6-month follow-up. This study demonstrates that pure and guided self-help both produce significant

improvements in binge eating (albeit over a longer time-period for pure self-help) and that treatment gains can be made even when delivered by non-specialists. This has important implications for the wider dissemination of cognitive behavioural treatments for BED. Subsequent controlled studies (Grilo, Masheb, & Wilson, 2005; Ljotsson et al., 2007; Loeb, Wilson, Gilbert, & Labouvie, 2000; Striegel-Moore et al., 2010; Wilson, Wilfley, Agras, & Bryson, 2010) examining the efficacy of guided self-help for BED using Fairburn's (1995) *Overcoming Binge Eating* manual have produced binge abstinence rates ranging from 36% to 63% post-treatment, with treatment gains maintained at six- and 12-month follow-ups. Taken together, these studies indicate that cognitive behavioural self-help is a viable alternative to therapist-assisted CBT for BED, at least among those individuals with BED who do not have low self-esteem and high levels of eating disorder psychopathology (Wilson, G.T, et al., 2010).

Cognitive behavioural self-help has several advantages over standard treatment. It can be implemented using minimal therapist guidance making it both cost-effective and potentially more disseminable than standard CBT. It is a brief intervention that can be delivered by non-specialist health care providers via a variety of modalities (i.e., face-to-face, telephone and internet) and produces binge eating abstinence rates that are typically comparable to CBT. These factors have important implications for addressing potential barriers that limit access to BED treatment (e.g., geographical isolation, service inequities, and absence of suitably trained eating disorder specialists).

There are, however, several limitations to cognitive behavioural self-help interventions. Firstly, although treatment outcomes are promising, as with standard CBT a considerable percentage of patients remain symptomatic after treatment

(Zendegui, West & Zandberg, 2014). Additionally, the existing self-help protocols are dated and on theoretical grounds could be revised to reflect modifications made to cognitive behavioural treatment for eating disorders (i.e., CBT-E). However, at this time the comparative effectiveness of CBT-E over CBT has not been established.

Interpersonal Psychotherapy

Interpersonal Psychotherapy (IPT) is a brief, time-limited therapy, originally developed by Klerman and colleagues (1984) for the treatment of depression, that focuses on the role of interpersonal relationships in the development and maintenance of BED (Tanofsky-Kraff & Wilfley, 2010). Individuals with BED tend to experience heightened sensitivity to interpersonal interactions and experience elevated levels of interpersonal distress compared to non-eating-disordered individuals (Tanofsky-Kraff & Wilfley, 2010). The combination of heightened sensitivity and associated distress may precipitate overeating and lead to binge eating. Binge eating is therefore considered to be a coping response to a cyclical relationship between low self-esteem, interpersonal problems, and distress (Tanofsky-Kraff & Wilfley, 2010). Furthermore, binge eating may exacerbate interpersonal problems by increasing social isolation and disrupting fulfilling relationships (Rieger et al., 2010). As such, in IPT for BED, interpersonal problem areas are identified as target areas for treatment, and healthy interpersonal skills are developed to address these problems and maladaptive behaviours (Tanofsky-Kraff & Wilfley, 2010). The treatment therefore focuses on improving binge eating symptoms by improving interpersonal functioning.

IPT for BED consists of approximately 20 sessions of either individual or group therapy, and is delivered in three phases: initial, intermediate, and termination. The treatment aims to resolve problems in four interpersonal domains: grief, interpersonal role disputes, role transitions, and interpersonal deficits (Altman,

Wilfley, Iacovino, Waldron, & Gredysa, 2013). The aim of the initial phase of treatment (sessions 1-5) is to assess the individual's interpersonal and eating disorder history and confirm a diagnosis of BED. Following the diagnosis, the client is given the "sick role", with the purpose of communicating to the client that their condition is treatable and encourages the setting aside of other responsibilities in order to focus on recovery (Tanofsky-Kraff & Wilfley, 2010). The rationale for IPT is also presented to the client and an interpersonal inventory conducted. The interpersonal inventory charts the client's life history and its association with binge eating symptoms (Altman et al., 2013). The IPT therapist and client then collaboratively develop an interpersonal formulation that includes a description of the interpersonal problems and corresponding problem area (i.e., grief, interpersonal role disputes, role transitions, and/or interpersonal deficits) and treatment goals are set (Altman et al., 2013).

The intermediate phase of treatment (sessions 6-15) involves the use of specific strategies by the therapist to facilitate the client's understanding of the relationship between interpersonal problems and binge eating. Once these connections are made, the therapist assists the client to develop strategies to change the interpersonal context in which binge eating occurs (Altman et al., 2013).

The termination phase of treatment (sessions 16-20) involves reflecting on progress including highlighting changes in interpersonal functioning. Plans are made for the client to continue working on any unaccomplished goals and relapse prevention is discussed (Altman et al., 2013).

Research examining the efficacy of IPT in the treatment of BED has produced some favourable outcomes. As previously stated, IPT has produced comparable long-term results to CBT for BED (Wilfley et al., 1993; Wilfley et al., 2002), including

abstinence rates of 72% for CBT and 83.9% for IPT five years after treatment ended (Hilbert, Bishop, & Stein, 2012), and has produced superior binge eating abstinence rates compared to guided self-help and BWL programs (Wilson, G.T. et al., 2010). Yet despite IPT demonstrating efficacy in reducing and ameliorating binge eating, as with CBT, a substantial proportion of individuals (up to 50% on average) who undertake treatment remain symptomatic.

Given the prominent role of affect in the theoretical models of the development and maintenance of BED, treatments that have affect at the core of their theory and treatment may be worth exploring as treatment alternatives for individuals with BED. Although CBT and IPT treatments address emotions, neither accords a primary role of emotion regulation in BED, and hence does not target affect regulation in a central and comprehensive manner (Safer, et al., 2009).

Dialectical Behaviour Therapy

Another cognitive behavioural treatment, Dialectical Behavior Therapy (DBT) (Linehan, 1993a), however, does explicitly address affect as a core component of treatment. All aspects of DBT are designed to treat affect regulation problems including emotional eating. Dialectical Behaviour Therapy is a treatment approach that addresses, both theoretically and specifically, the role of affect dysregulation in BED. It was originally developed to treat chronically suicidal and self-injurious patients diagnosed with borderline personality disorder, and combines traditional cognitive behavioural approaches with acceptance-based strategies (Linehan, 1993a). An underlying assumption of DBT is that individuals engage in dysfunctional behaviours as a way of solving their problems, the most common problem being affect dysregulation (Wisniewski & Kelly, 2003). As such, a main

focus of treatment is teaching and assisting clients to develop adaptive emotion regulation skills.

In order to develop emotion regulation capacities, four categories of skills are taught in a series of modules: mindfulness, distress tolerance, interpersonal effectiveness, and emotion regulation. Collectively, these skills target mood-dependent behaviour, impulsivity, and the control of one's attention. Additionally, these skills are designed to increase a client's willingness to tolerate difficult emotions, reduce interpersonal chaos, develop balance in relationships, and reduce suffering through the use of acceptance strategies (Wisniewski & Kelly, 2003). Dialectical Behaviour Therapy, with its grounding in an affect regulation model, has been considered a viable and effective treatment for BED (Telch, Agras, & Linehan, 2000; 2001; Safer, Robinson, & Booil, 2010). The Affect Regulation Model underpinning DBT for BED asserts that individuals use binge eating as a way of modulating affective states (Wisniewski, Safer, & Chen, 2007). Binge eating is seen as a behavioural attempt to change or control difficult emotional states, in the absence of adaptive affect regulation skills (Linehan & Chen, 2005). Furthermore, it is explicitly recognised that binge eating may trigger secondary emotions such as shame, disgust, and guilt, and these negative emotions may prompt further binge eating (Wisniewski et al., 2007). These emotions are addressed within the DBT-BED treatment. While in standard DBT for borderline personality disorder the initial treatment target is life-threatening issues, in DBT-BED the primary target is enhancing quality of life (including ceasing binge eating) through addressing the emotions and behaviours that trigger binge eating.

Research supporting the use of DBT in the treatment of BED is promising, although further investigation is required. To date, preliminary studies have been

limited to single case reports, uncontrolled trials, and three randomised control trials (Safer, et al., 2010; Telch, et al., 2000; 2001). Group studies have indicated that DBT is effective in achieving binge eating abstinence rates of 56% at post-treatment and the six-month follow-up (Telch et al., 2000; 2001). However, similar to other treatments for BED, the research indicates that almost 50% of patients remain symptomatic following treatment with DBT, implying that improvements in DBT for BED still need to be made to improve binge eating abstinence rates. Furthermore, given that DBT is a lengthy treatment that can take up to six months to complete, it is possible that a shorter DBT intervention may produce similar results in reducing binge eating symptomology.

The overarching goal in DBT is to create a life worth living, and in order to achieve this clients are assisted to set behavioural goals. However, given that up to 50% of participants remain symptomatic after treatment (Telch et al., 2000; 2001), as with other treatments, it appears that the core skills taught in DBT may not be sufficient enough to assist in the creation and maintenance of a life worth living or indeed in abstaining from binge eating when experiencing heightened levels of emotion dysregulation. One potential way of strengthening the client's commitment to accept emotional distress without using binge eating as a means of emotional control or avoidance is to help the client clarify and explicitly state their values and examine how immediate gratification (binge eating) may inhibit their ability to fulfil those values (Quayle, Vaughan, & Taylor, 2006). Theoretical work suggests that connection to values does indeed increase motivation to change and that value consistent behaviour can improve a person's sense of how meaningful their life is (Hayes, et al., 1999). It is also possible that connection to values may positively impact psychopathology (such as anxiety and depression) that is so often associated with

BED.

Acceptance and Commitment Therapy

Acceptance and Commitment Therapy (ACT), like DBT, is a third wave cognitive behavioural therapy, that has at its core teaching clients how to live their life in accordance with their values. Within the ACT literature, values are defined as “verbally constructed, global, desired, and chosen life directions” (Luoma, et al., 2007, p. 131), and it is asserted that defining, clarifying, and linking values to behaviour change increases willingness to tolerate automatic reactions and experiences, including the emotional distress central to emotion dysregulation. As Luoma et al. (2007) state, “It is about teaching clients a process of valuing that can guide them in making life choices long after the therapist is gone. This process is intended to help clients select directions for their lives that resonate with their deepest longings and *establish goals that are ultimately more workable than goals uninformed by intentional valuing*” (p. 131, *italics added*). Research suggests that values/goals that are based on avoidance of emotions or social compliance (e.g., “My husband wants me to value thinness”) tend not to be related to positive treatment outcomes (Sheldon & Elliot, 1999). It is proposed that contacting desired life directions has an intensely vitalizing, motivational quality, and once clarified, stated, and committed to, values can provide direction during periods of intense emotion dysregulation (Luoma et al. 2007).

The ACT model promotes an important and related aspect to valued living: committed action. The primary aim of committed action is to translate values into ongoing, evolving patterns of action (Harris, 2009). In this sense, the process of goal setting is guided and motivated by values. Whilst BWL programs, CBT, IPT, and DBT assist in the development of client goals (e.g., reducing the frequency of binge

eating), ACT delves deeper in the exploration of values with the assumption that values clarification enhances effective and pragmatic goal setting (Luoma et al. 2007). Work on values in ACT helps clients focus on the process of living, explicitly recognising focusing purely on goals tends to encourage evaluation of the discrepancy between present and possible outcomes (Hayes et al. 1999). In ACT, the steps involved in committed action are “i) to choose an area of life that is high priority for change ii) choose values to pursue in this area iii) develop goals, guided by those values iv) take action mindfully” (Harris, 2009, p. 209).

Research investigating the efficacy of ACT for eating disorders is limited to case studies, and preliminary feasibility studies. Lillis and colleagues (2011) analysed data from an earlier study they conducted (Lillis, Hayes, Bunting & Masuda, 2009) regarding the impact of a one-day ACT workshop for weight loss on binge eating (measured by self-report of how many days per week they had binged) and weight related experiential avoidance (measured by the Acceptance and Action Questionnaire for Weight) was examined. The sample consisted of 40 participants whose results were compared to a wait-list control group ($n = 44$). The one-day workshop covered core components of the ACT including clarifying life values and working towards behavioural commitments in service of these values. The researchers found that at three-month follow-up participants self-reported binge eating and weight related experiential avoidance had significantly reduced compared to the control condition. These reductions were statistically significant. Additionally, the researchers found that the effects of ACT on binge eating were mediated by weight related experiential avoidance reductions. The researchers argue that their results provide support for the role of experiential avoidance in binge eating behaviour. They note the limitations of the study, in terms of small sample size and the problems with their method of

assessing binge eating. Nonetheless, the results of this study provide tentative support for ACT in the treatment of binge eating.

The impact of ACT on binge eating behaviour has also been examined in bariatric surgery patients. Weineland and colleagues (2011) conducted a pilot study that examined the effects of an online 12-week ACT intervention on binge eating (measured by the Subjective Binge Eating Questionnaire for Bariatric Surgery Patient). The sample consisted of 39 participants who had undergone bariatric surgery within the previous 6-months; 19 participants were allocated to the ACT condition and 20 participants were allocated to the control group (treatment as usual). The ACT intervention covered core ACT process: Values and Committed Action, Defusion, Mindfulness and Acceptance and Self-as-Context. The researchers found that the ACT intervention produced statistically significant improvements in subjective binge eating compared to the control group and that the effect size for their study was large. In a case-series study examining the effects of a 10-week ACT intervention on binge eating with two women with BED, Hill and colleagues (2015) found that the frequency of binge eating had substantially reduced from pre to post treatment for both participants and these gains were maintained at the three-month follow-up. While ACT for BED is an undeveloped area of inquiry, these studies suggest that there may be a role for ACT in the treatment of binge eating.

Summary

A number of psychological treatments for BED have been extensively investigated, with the research suggesting that overall they are effective, on average, for about 50% of people who undertake them. Given the clear role of emotion in the development and maintenance of BED, there is a strong rationale for targeting emotion dysregulation in treatment. Yet most treatments for BED do not explicitly

target emotion, in that affect dysregulation is not central to the theory or their treatment goals. An exception to this is DBT, which has emotion dysregulation at the core of its model. However, whilst DBT has demonstrated its efficacy as a treatment for BED, like other treatments, a significant number of people who undertake the treatment remain symptomatic. This suggests that the treatment needs to be refined to improve treatment outcomes for BED. ACT is a relative newcomer to the treatment of eating disorders, however preliminary research suggests that it may have a role to play in the treatment of BED.

CHAPTER 5.

VALUES AND COMMITTED ACTION

This chapter includes an examination of the history of the concept of values in psychology, followed by a focus on the conceptualisation of values from an Acceptance and Commitment Therapy (ACT) perspective. The application of values to eating disorder treatment is also examined. For the purposes of this chapter, values are simply defined as guiding principles that can be used to assist individuals to choose directions for their lives that are consistent with what is deeply important and meaningful to them, which when identified, can help the individual establish goals that facilitate movement in these valued directions (Dahl, Plumb, Stewart, & Lundgren, 2009).

Values in Psychological Treatment

The role of values in psychology was first explored in detail by Carl Rogers (1964) as part of the humanistic psychology movement. Rogers (1964) asserted that values contain two elements; firstly, values involve the construction of verbal expressions of preference, and secondly, values involve the actual engagement of behaviour that is congruent with these verbal expressions. Rogers asserted that values are fundamental to self-actualisation and healthy psychological functioning. He considered problems in psychological functioning to be a consequence of the discrepancy between verbal expressions of preference and behaviour, that is, a values-behaviour inconsistency. For example, an individual who states a preference for a particular activity but does not engage in the activity is more likely to experience some level of psychological suffering (Plumb, Stewart, Dahl, & Lundgren, 2009). In

developing client-centred therapy, one of Rogers' aims was to assist the client to identify and conceptualise their values and guide them to living more congruently with them in order to experience a more psychologically healthy and fulfilling life (Plumb et al., 2009).

Subsequently, other areas of psychology have also highlighted the importance of values in assisting individuals to reduce psychological suffering and to attain a greater sense of fulfilment. Motivational interviewing, for example, was influenced by early humanistic psychology developments and aimed to help individuals identify higher personal values that can be used to motivate behaviour in a values-congruent way (Miller & Rollnick, 2013; Plumb et al., 2009). In addition to helping individuals identify their values, motivational interviewing also entails exploring barriers to living a values-consistent life. Increasing motivation to change problematic behaviour is facilitated by helping the individual to explore the undesirable consequences of their behaviour and how this is incongruent with their values, beliefs, and desires (Miller & Rollnick, 2013). One of the goals of treatment, therefore, is to support change toward value-congruent behaviour, in a manner that is non-coercive and helps the individual assume responsibility for their behavioural choices.

Positive psychology is another area that highlights the importance of values in reducing psychological suffering and improving quality of life. Sheldon (2002) asserts that "value-relevant behaviour" in the form of life-long goal striving is associated with better long-term psychological health compared to narrow, short-term goal setting motivated by avoidance (e.g., fear of weight gain). According to Sheldon engaging in behaviours that are associated with the pursuit of values-consistent overarching goals helps facilitate this process. Whilst the work of Rogers, and the motivational interviewing and positive psychology approaches have been highly

influential, criticism of the conceptualisation of values in these approaches pertains to the fact that their ideas are not based on well-developed and empirically-evaluated theories.

Recently, several forms of cognitive behaviour therapy have begun to consider the role of values in their treatment protocols. Enhanced cognitive behaviour therapy (CBT-E) for eating disorders, for example, aims to implicitly effect changes through values by examining the over evaluation of shape and weight and its consequences, as well as developing marginalised domains for self-evaluation. The CBT-E intervention assists the individual to identify important domains for self-evaluation and actively encourages the individual to utilise problem solving to engage in new activities to reduce the importance of shape and weight for self-evaluation (Cooper & Fairburn, 2010). Despite these recent developments, CBT and related protocols and treatments such as DBT do not explicitly link behaviour change with personal values in a comprehensive and systematic manner. Instead, given CBT focuses primarily on the amelioration of symptoms associated with mental disorders, there tends to be a de-emphasis on aspects of context (such as overarching values) that influence the individual's ability to live a fulfilling life (Plumb et al., 2009).

There has, however, been a significant development in the conceptualisation and utilisation of values in the third-wave cognitive behavioural approach, namely, Acceptance and Commitment Therapy (ACT). Whilst CBT assists in the development of goals (e.g., increasing investment in other domains for self-evaluation), ACT delves explicitly and comprehensively into the exploration of values, with the assumption that values clarification enhances effective and pragmatic goal setting (Luoma, et al., 2007).

Values from an ACT Perspective

ACT defines values as “freely chosen, verbally constructed consequences of ongoing, dynamic, evolving patterns of activity, which establish predominant reinforcers for that activity that are intrinsic in engagement in the valued pattern itself” (Wilson & DuFrene, 2009, p. 66). This technical definition is dense and can be better understood by examining each of its components.

“Freely chosen” means that values are chosen by the individual and are based on personal choice, rather than forced by other people, or chosen to please others or to conform to socially-defined rules (Hayes, Stroschal, & Wilson, 2012). From this perspective, values are not freely chosen if they are based on pliance (i.e., adhering to rule governed behaviour) that tends to produce behaviour that is inflexible and less likely to result in optimal long-term psychological outcomes (Plumb et al., 2009). This has particular relevance for eating disordered individuals who are significantly influenced by societal rules that govern acceptable standards for weight and shape, as well as demonstrating adherence to rule-bound behaviour in terms of their eating and exercise regimens.

“Verbally constructed consequences” refers to the idea that the construction of values involves a linguistic component that includes higher order abstract consequences and the construction of goals in the service of those consequences (Plumb et al., 2009). For example, if health and fitness is identified as a value and the individual is asked to describe what is involved, the individual may state: “to have the energy to play with my grandchildren and to be alive and healthy to watch them grow up”. This verbal description of health and fitness involves goal setting (e.g., exercising regularly and eating nutritious meals) and concrete actions (e.g., joining a fitness class and constructing a meal plan this week). Health and fitness function as

verbally constructed consequences of engaging in particular actions and verbally motivate continual performance of actions that are required to achieve desired goals.

“Ongoing, dynamic, evolving patterns of activity” refers to a process in which individuals engage in complex patterns of activity over a life-time, that are related to values and that produce the kinds of verbally constructed consequences described previously (Dahl et al., 2009). For example, an individual who values health and fitness will need to engage in patterns of behaviour such as monitoring their food intake, preparing healthy meals, and exercising regularly. An individual will be informed by their past experiences of health and fitness and their verbal descriptions of these experiences. These verbal descriptions of experience form ongoing, dynamic, evolving patterns of activity that allow the individual to be aligned with their verbally constructed values.

“Establish predominant reinforcers for that activity that are intrinsic in engagement in the valued pattern itself” refers to a process in which activity (behaviour) has positively reinforcing features because it is connected to an individual’s verbally expressed life desires, that is, values (Hayes et al., 2012). The ongoing pattern of values consistent behaviour is considered intrinsically reinforcing and motivating because it reflects what is inherently important to the individual.

The overarching goal of values work from an ACT perspective is to help the individual to develop psychological flexibility. This flexibility involves being fully present and open to ongoing experience in a way that serves one’s values (Sandoz, Wilson, & DuFrene, 2010). The ability to know and behaviourally engage with one’s values is often impaired by cognitive inflexibility and experiential avoidance. Individuals frequently attempt to escape negative consequences by engaging in

actions and behaviours that are guided by “should”, “musts”, and “have-tos” (Blackledge & Barnes-Holmes, 2009). This type of cognitive inflexibility is often exhibited in individuals with eating disorder pathology in that weight loss often becomes a focus and they feel like they “have to” lose weight in order to conform with societal ideals about body image and weight. The process of eliminating the psychological pain associated with rule-governed behaviour results in an exclusive focus on goals (such as ceasing binge eating) without expressing a higher purpose for doing so. As such, solely focusing on goals in this manner can result in individuals losing contact with what they want their lives to be about or what they want to stand for (Hayes et al., 2012).

In contrast, treatment that is informed by, and utilises, an individual’s values focuses on assisting individuals to explicitly approach positive outcomes rather than simply avoiding negative consequences (Blackledge & Barnes-Holmes, 2009). For example, in an overweight or obese individual with an eating disorder, weight loss would be attached to a positive consequence such as “I would have more energy to do things I enjoy” rather than “I have to lose 10 kilos to feel okay about myself”. Values, then, are about identifying actions and behaviours that increase an individual’s sense of vitality and that bring meaning and purpose to these actions and behaviours.

An important aspect of values is the notion that there is no end point to values-congruent actions; values can never be fully obtained as an object (Luoma, et al., 2007). Rather, the role of values is to function as a motivator for certain behavioural directions (Dahl et al., 2009). Actions that are guided by values have a “living in the here and now” quality to them rather than something that can be obtained in the future. To this end, values are about ways of behaving rather than a pure focus on an

outcome or goal (Blackledge & Barnes-Holmes, 2009). For example, if an individual identified a value of health and fitness, from a therapeutic point of view, the individual would be assisted to clarify ways of behaving on a day-to-day basis that increase the likelihood of developing and maintaining health and fitness, rather than focusing purely on an outcome such as weight loss. Even if the individual lost 10 kilograms in weight (a concrete goal), it would be illogical to then assume that health and fitness have now been achieved. In this way, values are different from goals in that they do not have an end point, as opposed to goals, which are practical, quantifiable, and have clear end-points (Dahl et al., 2009).

This is not to say that goals are not important in values work. Goals are useful from the point of view that they act as waypoints and help orient the individual toward valued living (Dahl et al., 2009). However, from an ACT perspective, goals are not sufficient for valued living, because once goals are attained, they lose their importance as waypoints and the individual then has to set new goals that are aligned with the values they have identified. In ACT, this is referred to as engaging in committed action.

Committed Action

Committed action is the process of defining, and refining, goals that are congruent with one's values and engaging in behaviours and actions that increasingly build patterns of values-consistent behaviour (Twohig & Hayes, 2008). Loss of contact with values is thought to result in behaviours that are narrow, rigid, and function as behavioural avoidance or behavioural excess (such as binge eating) (Hayes et al., 2012). This leaves the individual with a psychological rigidity that reduces their capacity to adapt to changing circumstance and increases vulnerability to clinically significant symptoms of psychological problems such as anxiety and

depression. Committed action is designed to counteract the repertoire-narrowing effects of behavioural avoidance (e.g., withdrawal) and behavioural excess (e.g., binge eating) by orienting the individual to higher life desires in the context of present circumstances (Hayes et al., 2012).

Committed action is an extension of values; it involves the individual needing to continually redirect behaviour toward larger patterns of behaviour in order to achieve desirable consequences (i.e., vitality, purpose, and meaning). Values identification and clarification provides the direction and route for living, whereas committed action describes the steps of the journey (Luoma et al., 2007). Values assist the individual to persist with behaviour change, in the face of distress and difficulty, because such behaviours are in the service of life directions that are meaning and purposeful.

Implicit in committed action is the development of a willingness to experience some level of difficult internal experiences. Indeed, committed action and willingness go hand-in-hand; one cannot move in a valued direction without a willingness to encounter difficulties and barriers along the way. This is because values consistent committed action will inevitably evoke difficult feelings, sensations, and thoughts. For example, the value of love is associated with the experience of grief and loss, and the value of connection to other people is associated with the possibility of rejection (Luoma et al., 2007). Without willingness to be in contact with these experiences, the ability to maintain values based action is impossible.

Application of Values and Committed Action to Eating Disorders

A significant proportion of individuals with eating disorders exhibit a preoccupation with shape and weight and define their self-worth in terms of their

ability to exert control over this. This preoccupation overshadows aspects of their lives that are important to them, which results in the individual becoming increasingly disconnected from core values (Sandoz et al., 2010). Such individuals are so consumed by the struggles associated with eating disordered behaviour and body image that they may find it difficult to identify anything of importance other than striving to achieve and maintain a particular weight. As a result, individuals with eating disorders may have difficulty identifying and reporting what matters to them and what they value. A lack of values clarity may also increase an individual's susceptibility to adopting others' values, or the values espoused by the mass media (such as the "thin ideal") without a personal connection to why they consider these things important (Merwin & Wilson, 2009).

This has important implications for eating disorder treatment. Assisting individuals with eating disorders to identify and redirect their focus to other aspects of their life that they value, rather than the eating disordered aspects, can potentially decrease the importance of shape and weight and its preoccupation. For example, if an individual values relationships, engaging in behaviour that is consistent with being a loving and attentive partner may increase investment in this domain of self-worth and consequently decrease investment in shape and weight.

Additionally, connection with values and committing to behaving consistently with these values may increase willingness and confidence to be able to successfully navigate adversity, such as tolerating emotional distress rather than binge eating. This consequence of values work is particularly noteworthy given the centrality of affect regulation in models of binge eating. The ability to clarify personal values and behaviourally engage in these values on a day-to-day basis may enhance the development of affect regulation skills, by increasing willingness to tolerate distress

in the service of value-congruent outcomes. That is, connection with values may increase both a willingness to tolerate negative emotions and engage in more adaptive behaviour rather than relying on binge eating and other maladaptive eating disordered behaviours to solve the problem of experiencing distressing emotions. In this sense, individuals are encouraged to tolerate negative affect in the service of developing a life that is filled with meaning and vitality. To facilitate this process, eating disordered individuals would consider the question “what would I be doing in my life if I didn’t have to spend all of this energy on controlling my eating/shape/weight and avoiding negative emotions?”. This process directs the individual’s attention to how aversive control (i.e., binge eating to mitigate negative emotions) interferes with adaptive functioning (Hayes et al., 2012).

Empirical Support for Values in Eating Disorder Treatment

To date, there are no studies that exclusively examine the role of values in eating disorder treatment. The existing research focuses on ACT interventions as a whole, of which values and committed action are a key component (Berman, Boutelle, & Crow, 2009; Heffner & Eifert, 2004; Kater, 2010). However, these studies are few in number, and are either case studies or are limited by their small sample sizes. They are also limited in terms of the types of eating disorders targeted, with a major focus on anorexia nervosa. Indeed, there are only three studies which trial brief ACT-based interventions for weight loss (Forman, Butryn, Hoffman, & Herbert, 2008; Lillis, et al., 2011; Weineland, Arvidsson, Kakoulidis, & Dahl, 2012). However, it is not clear whether participants in these studies also experienced clinical or subclinical problems with binge eating. Furthermore, there are currently no studies that examine the utility of enhancing existing validated treatments for eating disorders, such as DBT, with values and committed action. Given that values-based

work has the potential to augment individuals' willingness to tolerate distress rather than engage in binge eating, this is a fruitful direction for research.

CHAPTER 6.
A PRELIMINARY INVESTIGATION OF A MODIFIED DBT GROUP
PROGRAM FOR INDIVIDUALS WITH BINGE EATING DISORDER
SYMPTOMATOLOGY

Several psychological interventions have received empirical support for the treatment of BED; namely, Cognitive Behaviour Therapy (CBT), Interpersonal Psychotherapy (IPT), and Behavioural Weight Loss programs (BWL). Treatment outcome studies of these therapies have demonstrated overall binge eating abstinence rates that range from 41% to 79% (Safer, et al., 2010). Wisniewski, et al. (2007) argue that, collectively, these treatments are ineffective for approximately 50% of clients with BED. Given that after treatment with CBT, IPT or BWL a significant proportion of individuals continue to experience binge eating symptoms, either at post-treatment or over the period following treatment, it has been suggested that other theoretical conceptualisations and/or treatment approaches for BED be examined (Safer, et al., 2009).

As previously outlined, one area that has been identified as a major aetiological and maintenance factor in BED is the role of affect regulation in binge eating behaviour (Goleman, 1995; Telch, 1997; Wiser & Telch, 1999). Yet, none of the three main treatment approaches comprehensively addresses theoretically or in treatment, the role of affect dysregulation in the aetiology and/or maintenance of binge eating (Safer et al., 2010). One intervention that does, however, have a focus on affect dysregulation at its core is Dialectical Behaviour Therapy (DBT) (Linehan, 1993a).

While research supporting the use of DBT in the treatment of BED is promising, this approach warrants further exploration. To date, preliminary studies have been limited to single case reports, uncontrolled trials, and three randomised control trials (Safer, et al., 2010; Telch, et al., 2000; 2001). Group studies have indicated that DBT is effective in achieving binge eating abstinence rates of 50% at post-treatment and six-month follow-up (Telch et al., 2000; 2001). Thus the results of these studies indicate that up to 50% of patients remain symptomatic following treatment with DBT, implying that improvements in DBT for BED still need to be made to increase binge eating abstinence rates. Furthermore, DBT is a lengthy treatment that can take up to six months to complete; it is possible that a shorter DBT intervention may produce similar results in reducing binge eating symptomatology while being more cost-effective.

The overarching goal in DBT is to create a life worth living, and in order to achieve this clients are assisted to set behavioural goals. However, given that up to 50% of participants remain symptomatic after treatment (Telch et al., 2000; 2001), goal setting in itself may not be sufficient to assist in the creation and maintenance of a life worth living or indeed in abstaining from binge eating when experiencing heightened levels of emotional dysregulation. One potential way of strengthening the client's commitment to accept emotional dysregulation without using binge eating as a means of emotional control or avoidance is to help the client clarify and explicitly state their values and examine how immediate gratification (binge eating) may inhibit their ability to fulfill those values, as specified in Acceptance and Commitment Therapy (ACT) (Quayle, et al., 2006). Research suggests that connection to values does increase motivation to change and that value consistent behaviour can improve a person's sense of how meaningful their life is (Hayes, et al., 1999). It is also possible

that connection to values may positively impact psychopathology (such as anxiety and depression) that is so often associated with BED, and may be involved in the maintenance of binge eating behaviour.

Despite its promise, no previous studies have combined DBT and specific ACT components (i.e., values and committed action) in the treatment of BED. The current study therefore aims to provide a preliminary evaluation of the efficacy, feasibility, and acceptability of a values-enhanced group DBT program over a shorter duration (14 weeks) than standard DBT-BED (20 weeks).

It is hypothesised that, from pre- to post-treatment, there will be:

1. A significant reduction in eating disorder pathology (i.e., binge eating) that is at least comparable to that achieved using the longer, standard DBT programs for BED;
2. A significant increase in tolerance of negative affect and urges to binge eat; and
3. An increased connection to personal values, acceptance, and committed action.

Method

Design

This within subject study design is an uncontrolled pilot study, conducted with the primary aim of evaluating the pre- to post-treatment efficacy, as well as the feasibility and acceptability, of a modified (values enhanced) group DBT program over a shorter duration (14 weeks compared to 20 weeks). Ethics approval to conduct the study was obtained from the Australian National University Human Research Ethics Committee (Protocol: 2011/187).

Participants

Participants were recruited from the Australian Capital Territory (ACT) and New South Wales (NSW). Recruitment sources included Eating Disorder and Mental Health services, university counselling centres, newspaper advertisements, and flyers posted on community listserves. The study was advertised as a free, 14-week group treatment program for emotional eating for men and women aged 18 years and older. Exclusion criteria included regular use of compensatory behaviours such as laxative use and self-induced vomiting, active drug and/or alcohol abuse, active suicidality and self-injurious behaviour, active psychosis or severe depression, concurrent participation in psychotherapy, and inability to attend group meetings for the duration of treatment. Respondents who met any exclusion criteria (with the exception of concurrent participation in psychotherapy) were given information regarding potential referral options for treatment.

Recruitment resulted in 93 contacts from interested individuals who were sent information about the program. Sixty-seven people then made contact for an initial telephone assessment. Only 36 of these 67 individuals indicated clinically significant problems with overeating and loss of control whilst overeating, and all 36 attended an in-person assessment with the researcher. The assessment procedure involved the administration of the Eating Disorder Examination (EDE; Fairburn, Cooper, & O'Connor, 2008) to assess eating disorder psychopathology. Written informed consent to participate in the treatment was obtained from eligible participants at assessment.

Twenty-eight of the 36 individuals met the *DSM-IV-TR* (APA, 2000) research criteria for either threshold or subthreshold BED and were invited to participate in the study. Four of the 28 individuals were excluded from the study due to meeting one or

more of the exclusion criteria, leaving 24 individuals suitable for the study. Each of these 24 individuals consented to participate in the study, however one individual withdrew from the program the day it was due to commence (the participant did not provide a reason for withdrawing), and two participants withdrew at various stages throughout the program. One of these participants withdrew to pursue treatment for another mental health condition that was not disclosed during the intake period, and the second participant withdrew because they were experiencing personal stressors that needed tending to. Thus a total of 21 participants (20 females, one male) completed the treatment program. The age range was 24 to 48 years ($M = 37$ years, $SD = 10.07$) and 18 participants were either overweight ($BMI \geq 25$) or obese ($BMI \geq 30$) based on self-reported height and weight.

Measures

Except for demographic and diagnostic information, the following measures were administered at baseline and post-treatment, and can be found in Appendix A.

Eating disorder psychopathology. The Binge Eating Scale (BES; Gormally, Black, Daston, & Rardin, 1982) is a 16-item self-report measure that examines binge eating severity and the behavioural, emotional, and cognitive manifestations surrounding a binge episode. Response categories range from one (e.g., “I rarely eat so much food that I feel uncomfortably stuffed afterwards”) to four (e.g., “I eat so much food that I regularly feel quite uncomfortable after eating and sometimes a bit nauseous”). Its psychometric properties demonstrate high internal consistency (Cronbach’s $\alpha = 0.85$) and concurrent validity. The BES was included in this study as it is widely used in research as a measure for binge eating severity (particularly in terms of disinhibited eating) and as a clinical tool to measure changes in binge eating behaviours and cognitions.

Emotion regulation. The Emotional Eating Scale (EES; Arnow, Kenardy, & Agras, 1995) is a 25-item self-report questionnaire that measures the extent to which a range of emotions lead to urges to eat. Response categories range from one (*No desire to eat*) to five (*An overwhelming urge to eat*). There are three subscales: Anger/Frustration, Anxiety and Depression. The psychometric properties of the EES demonstrate acceptable internal consistency (Cronbach's alpha of .78 for the Anger/Frustration scale, .78 for the Anxiety scale, and .72 the for the Depression scale) (Arnow, et al., 1995).

Emotion regulation was also assessed via the Difficulties in Emotion Regulation Scale (DERS; Gratz & Roemer, 2004), a 36-item self-report measure that assesses respondents' difficulties in managing their emotions. The measure uses a 5-point Likert-type scale, ranging from 1 (*almost never*) to 5 (*almost always*). It contains six subscales that assess acceptance of emotional responses, difficulties engaging in goal-directed behaviour, impulse control difficulties, emotional awareness, access to emotion regulation strategies, and emotional clarity. The DERS has high internal consistency (Cronbach's alpha = .93), (Safer, et al., 2010).

Distress tolerance. The Distress Tolerance Scale (DTS; Simons & Gaher, 2005) is a self-report questionnaire that consists of 15 items examining the extent to which respondents experience negative emotions as intolerable. The measure uses a 5-point Likert-type scale ranging from 1 (*strongly agree*) to 5 (*strongly disagree*), with higher scores reflective of better distress tolerance. It contains four subscales that assess tolerance ("Feeling distressed or upset is unbearable to me"), appraisal ("I can tolerate being distressed"), absorption ("When I feel distressed or upset, all I can think about is how bad I feel"), and regulation ("I'll do anything to avoid feeling distressed or upset"). The DTS has good psychometric properties, including internal consistency

(a Cronbach's alpha of .89) and convergent validity with measures of negative affect (Simons & Gaher, 2005).

The Acceptance and Action Questionnaire (AAQ-II; Bond et al, 2011) was also administered to assess distress tolerance. Specifically, the AAQ-II includes 10 items that measure one's acceptance of negative thoughts and feelings such as "It's ok if I remember something unpleasant". Respondents rate each statement on a 7-item Likert-type scale ranging from 1 (*never*) to 7 (*always*). The AAQ has been reported to be both reliable (a Cronbach's alpha of .88) and valid in previous research (Bond & Bunce, 2003).

Values. The Valued Living Questionnaire (VLQ; Wilson, Sandoz, Kitchens, & Roberts, 2010) assesses valued living and the extent to which respondents are in contact with their chosen values in everyday life. The VLQ asks respondents to rate 10 domains of valued living on two, 10-point scales that assess the personal importance of each domain as well as how value consistent their behaviour has been in the prior week, respectively (Wilson, Sandoz, Flynn, Slater, & DuFrene, 2010). Response categories range from 1 (*not important; not consistent*) to 7 (*extremely important; extremely consistent*). The psychometric properties of the VLQ have supported in terms of adequate internal consistency (Cronbach's alphas ranging from .77 to .83) (Wilson, Sandoz, Kitchens, et al., 2010).

DBT Diary Cards. Diary Cards are daily monitoring forms used in DBT to record targeted behaviours (e.g., binge eating), urges to engage in maladaptive behaviour, emotions, and the use of skills. Diary Cards are completed by the participant daily and assist in the accurate assessment and reinforcement of progress (Wisniewski & Kelly, 2003).

Program Evaluation Questionnaire. This questionnaire was developed for the present study in order to obtain feedback from participants regarding their participation in the program. It includes a mixture of closed and open-ended questions. Strategies from the four treatment program modules (and support from the therapist and significant others) are assessed using 24 items; each item is rated for how often it is used and how useful it is. Each item is assessed on a 5-point Likert scale, ranging from 1 (*never*) to 5 (*always*) regarding skills use and 1 (*not at all*) to 5 (*extremely*) for skills usefulness. Additionally, 11 open-ended questions, pertaining to treatment format, usefulness, and effectiveness are included.

Procedure

Participants were assigned to 14 sessions of group-based DBT-Values-BED. The researcher, who is a Psychology Board of Australia registered psychologist and has completed intensive training in DBT, delivered the treatment.

The DBT-Values-BED treatment manual is based on an adapted 20-session treatment protocol of DBT for BED and bulimia nervosa (Safer, et al., 2009). It consists of a 14-session program, comprised of an initial Orientation to Treatment session, four modules of three weeks each to teach adaptive emotion-regulation skills (Mindfulness, Values and Committed Action, Emotion Regulation, and Distress Tolerance), and one final session devoted to Review and Relapse Prevention. The content of each session is outlined below.

Orientation to treatment. In this first session, participants were provided with an overview of the treatment structure and an introduction to each of the skills training modules. The Emotion Regulation Model of binge eating was also discussed in order to facilitate an understanding that, from a DBT perspective, all eating

disordered behaviours (e.g., binge eating, purging, restricting, and preoccupation with food) are maladaptive attempts to manage emotions that feel “out-of-control” or intolerable. The main treatment targets and goals (i.e., to stop binge eating behaviours and learn emotion regulation skills to replace maladaptive binge eating) were also highlighted. This session also introduced the concept of self-monitoring, a key component of DBT treatment for BED. Participants were introduced to the main self-monitoring tools used in DBT, namely, Behavioural Chain Analysis and DBT Diary Cards (an example of which is contained in Appendix A). Participants were made aware that the main goal of Behaviour Chain Analysis is to facilitate an awareness and understanding of the antecedent events that increase the likelihood that binge eating will occur, as well as an understanding of common triggers for the behaviours and their consequences (Lynch, Chapman, Rosenthal, Kuo & Linehan, 2006). Participants were also informed that throughout the program, Behavioural Chain Analyses are conducted by each participant following an episode of binge eating (or other problematic behaviours that are highlighted as treatment targets), and a recent chain analysis is reviewed in the group session, primarily to enhance learning and to problem-solve any difficulties that may be occurring. Participants were introduced to the DBT Diary Cards, which monitor the frequency and intensity of binge eating, urges, and emotions, as well as daily practice of DBT skills. Lastly, a cost benefit analysis regarding eliminating versus continuing binge eating was explored.

Mindfulness. Mindfulness skills were introduced in Session 2 and are the foundation on which all other skills are built. Mindfulness skills facilitate present moment awareness that involves noticing uncomfortable thoughts, feelings, and sensations. These skills develop the capacity to respond skilfully, rather than acting in a reactive and automatic way. From a DBT perspective, mindfulness skills are

considered as fundamental to ceasing binge eating. The primary skills taught to participants were “States of Mind”, and the “What” and “How” skills. In DBT there are three “States of Mind”: “Rational Mind” (a state of mind in which one is thinking rationally and approaching problems in a logical manner), “Emotion Mind” (a state of mind where thinking and behaviour is controlled by one’s emotional state), and “Wise Mind” (a state of mind that integrates intuition, emotional experiencing, and logic) (Linehan, 1993b).

The “What” skills are a set of mindfulness skills where participants learn to observe and describe their experiences and fully attend to emotions and participate in events, without engaging avoidance behaviour (Linehan, 1993b). The “How” skills are an extension of the “What” skills and refer to how these skills are implemented. The “How” skills involve observing, describing, and participating in a nonjudgmental manner, focusing on one thing at a time, and doing what works in a situation (i.e., being effective) (Linehan, 1993b).

In addition to the core DBT mindfulness skills, participants were also taught “Mindful Eating” practices (integrated into every session for the next 13 weeks), which involved using the “What” and “How” skills while eating various types of food (e.g., raisins and chocolate malt balls), and an “Urge Surfing” technique (awareness of, and exposure to, strong urges to binge eat without engaging in the behaviour).

Values and committed action. As the novel treatment component, the Values and Committed Action module facilitated an exploration of what gives participants’ lives a sense of meaning and purpose, and encourages participants to use those values as an ongoing guide for their behaviours. A number of standard ACT values therapy tools were used in this module, such as the “Compass” metaphor (values are like a

compass, they help direct behaviour in personally meaningful directions), to illustrate the difference between values and goals, as well as the “80th Birthday” exercise (see Appendix A) to facilitate values clarification, and the “Bull’s Eye” worksheet (see Appendix A) to assist participants to assess how connected they are with their values on a day-to-day basis. The sessions also focused on developing committed action, that is, engaging larger and larger patterns of behaviour that are motivated by each participant’s values. Participants were assisted to translate their values into clear goals and specific actions as well as identifying and problem solving barriers to action using DBT skills. Daily self-monitoring of values consistent behaviour was encouraged using a “Values and Action Practice Sheet” (see Appendix A).

Emotion regulation. The Emotion Regulation module facilitated the development of skills in identifying and accurately labelling emotions as well as understanding the function of emotions. It also taught skills to increase the number of positive emotions experienced by participants whilst reducing vulnerability to intense negative emotions and learning how to change emotions when it would be effective to do so. The main DBT emotion regulation tools used in this module were the “Model for Describing Emotions”, “Primary and Secondary Emotions”, “Loving Emotions”, “Justified vs. Unjustified Emotions”, “Opposite Action” and “PLEASE MASTER” (see Safer et al., 2009 for a description of these skills). A number of metaphors were used to augment the above tools, such as the “Chinese Finger Trap” to facilitate an understanding of the process of acceptance, and the “Quick Sand” metaphor to illustrate the importance of ceasing to struggle with emotions (see Safer et al., 2009 for a description of these metaphors).

Distress tolerance. The Distress Tolerance module facilitated the development of skills to successfully navigate and cope with painful situations and

feelings that cannot be changed in the moment. The aim is to skilfully tolerate short-term distress without making the situation worse by engaging in binge eating behaviours. As with standard DBT, participants were taught the following skills: “Observing Breath”, “Half-Smile”, “Accepting Reality Awareness”, “Radical Acceptance” (turning the mind, willingness versus wilfulness), and “Crisis Survival Skills” (distraction, improve the moment, self-soothe, and pros and cons). An additional skill: “Burning Bridges to Binge Eating” was also delivered (see Safer et al., 2009 for a description of these skills).

Review and relapse prevention. This final session involved participants developing specific plans to continue to practice the skills that had been useful in reducing problematic situations and behaviours, as well as difficult emotions. It included a review of the typical triggers and vulnerabilities for binge eating, as well as identifying how participants will respond to situations and emotions when they arise in the future. Also included in this session was an exploration of how participants will continue to engage their values into the future.

Statistical and Qualitative Analysis

To examine the efficacy of the DBT-Values-BED intervention, a within subject design (pre-treatment versus post-treatment) was used. Cohen’s (1977) methods were used to examine the size of the treatment effect ($d = 0.20$ small effect; $d = 0.50$ medium effect; $d = 0.80$ large effect). Paired-sample t tests were used to compare pre- and post-treatment means for each dependent measure, with a p -value set at .05. A program evaluation form (see Appendix A) was used to examine participants’ experience of the program.

Results

Changes in Pre- to Post-Treatment Outcomes

A visual inspection of relevant boxplots indicated that neither the normality nor normality of difference score assumptions were violated, except for two scales. For the Difficulties in Emotion Regulation Scale Non-Acceptance subscale, there were outliers in the data and the difference scores from pre- to post-treatment were not normally distributed as assessed by Shapiro-Wilk's test ($p = .009$). Similar violations of normality were found for the Anger subscale of the Emotional Eating Scale in that the difference scores at pre- and post-treatment were not normally distributed as assessed by Shapiro-Wilk's test ($p = .019$). Given that the paired sample t test is relatively robust with violations of assumptions (Pallant, 2013), these measures were still included in the analysis. However, a Wilcoxon Signed Rank Test (non-parametric version of the paired sample t test) was also performed on these two subscales. This test is commonly used when the assumptions of the paired sample t test are violated.

The pre- and post-treatment means, standard deviations, effect size (Cohen's d), confidence intervals, and probability values for t for each of the outcome measures are presented in Table 6.1. Substantial post-treatment reductions in BES scores were observed; this difference was statistically significant, and the treatment effect on the severity of binge eating tendencies was large. At post-treatment, approximately 57% of participants were abstinent from binge eating.

Substantial reductions in emotional eating were also observed on all three scales of the EES. On average, participants' post-treatment EES Anger subscale scores were .68 points lower than their pre-treatment scores and this difference was statistically significant. The Wilcoxon Signed Rank Test was performed on the Anger subscale and the results indicated that the post-test scores were significantly lower than the pre-test scores, $z = -3.14$, $p = .002$. This effect can be considered moderate to large, $r = 0.48$. Similarly, EES Anxiety subscale post-treatment scores were .84 lower than their pre-treatment scores, and this difference was statistically significant. Results for the EES Depression subscale scores were 1.09 lower from pre- to post-treatment, which was a significant reduction. There were 'large' treatment effects on anger, anxiety, and depression as triggers for emotional eating.

As with the measures of binge eating tendencies and emotional eating, the treatment effect size for total ability to manage emotional distress (as measured by the DTS) was large, with a significant pre- to post-treatment increase in total distress tolerance. In addition, there were significant increases from pre- to post-treatment on each of the DTS subscales including the Appraisal, Absorption, Tolerance, and the Regulation subscales.

On the measure of acceptance, the data indicated significant increases in acceptance of negative thoughts and feelings on the AAQ-II from pre- to post-treatment. Similar increases were obtained regarding connectedness with chosen life values (VLQ) from pre- to post-treatment, which indicated an improvement in engaging in personally meaningful actions and behaviour.

The capacity to regulate emotions was substantially enhanced from pre- to post-treatment as measured by total scores on the DERS. The results from the DERS

subscales indicated significant increases in Impulse Control, Emotional Awareness, Access to Emotion Regulation Strategies, and Emotional Clarity. Large effect sizes were found for Non-Acceptance of Emotional Responses, and Difficulties in Engaging in Goal Directed Behaviour from pre- to post-treatment on the DERS. The Wilcoxon Signed Rank Test was also performed on the Non-Acceptance subscale of DERS and the results indicated that the post-test scores were significantly lower than the pre-test scores, $z = -3.48$, $p = .001$. This effect can be considered large, $r = 0.54$. An inspection of the Non-Acceptance, Goals, Awareness, Strategies, Clarity, and Impulse subscales showed statistically significant increases in acceptance of emotional responses, capacity to engage in goal directed behaviour, emotional awareness, access to emotion regulation strategies, emotional clarity, and impulse control, respectively at post-treatment compared to pre-treatment

Table 6.1

Means (Standard Deviations), Effect Size, Confidence Intervals and Probability Values for t for Each of the Outcome Measures

	Mean (SD) Pre-treatment	Mean (SD) Post-treatment	Cohen's <i>d</i> Pre-Post	95% Confidence Interval	<i>t</i>	<i>df</i>	<i>p</i>
BES	35.66 (9.42)	19.42 (9.86)	1.68	12.71 – 19.77	9.59	20	.000
EES							
Anger	3.37 (0.65)	2.69 (0.87)	0.89	0.28 – 1.06	3.60	20	.002
Anxiety	3.06 (0.83)	2.22 (0.76)	1.06	0.42 – 1.27	4.13	20	.001
Depression	4.15 (0.67)	3.06 (0.84)	0.76	0.62 – 1.55	4.87	20	.000
DTS							
Total	2.64 (0.98)	3.49 (0.97)	-0.87	-1.25 – -0.45	-4.41	20	.000
Tolerance	2.60 (1.28)	3.57 (0.94)	-0.87	-1.54 – -0.39	-3.52	20	.002
Appraisal	2.87 (1.02)	3.60 (1.03)	-0.71	-1.18 – -0.30	-3.52	20	.002
Absorption	2.40 (1.13)	3.27 (1.19)	-0.75	-1.36 – -0.38	-3.71	20	.001
Regulation	2.71 (3.46)	3.46 (1.09)	-0.33	-1.17 – -0.32	-3.63	20	.002
AAQ-II	37.33 (12.26)	50.47 (9.31)	-1.22	-17.61 – -8.68	-6.14	20	.000
VLQ	42.06 (16.38)	50.35 (17.69)	-0.49	-14.24 – -2.35	-2.97	15	.009
DERS							
Non-acceptance of emotional responses	15.43 (6.65)	11.00 (4.72)	0.78	2.22 – 6.64	4.18	20	.000
Difficulties engaging in goal directed behaviour	17.95 (4.72)	14.42 (4.24)	0.79	1.65 – 5.40	3.92	20	.001
Impulse control difficulties	17.81 (5.90)	13.62 (4.86)	0.78	2.00 – 6.38	4.00	20	.001
Lack of emotional awareness	18.19 (5.18)	14.09 (5.30)	0.78	1.78 – 6.41	3.70	20	.001
Limited access to emotion regulation strategies	24.24 (8.43)	15.33 (6.87)	1.32	5.75 – 12.06	5.89	20	.000
Lack of emotional clarity	14.62 (3.68)	10.14 (3.12)	1.32	2.86 – 6.10	5.77	20	.000
Total	108.24 (26.31)	78.71 (23.76)	1.18	19.67 – 39.37	6.25	20	.000

Program Evaluation Questionnaire

The following section presents the results relating to participants' use of skills during treatment, as well as participants' reports regarding the usefulness of these skills. The mean use of skills indicated that, on average, the participants reported using all skills most of the time during treatment, including the novel skills of values and committed action. Overall, participants endorsed all of the skills as highly useful, with the skills pertaining to values and committed action ranked at the top in this regard. Support from the therapist and significant others were also endorsed as highly useful.

Table 6.2

Mean Ratings for Skills Use and Self-Reported Usefulness

Skills Module	Skills Used	Skills Usefulness
Mindfulness	3.2	4.3
Distress Tolerance	3.1	3.9
Emotion Regulation	3.0	4.2
Values and Committed Action	3.3	4.5
Support	2.8	4.0

Responses for the open-ended questions were similar across participants. When asked "How did this treatment go for you?", all participants' responses were positive. Participants indicated that an increased awareness of emotions and ability to manage emotion dysregulation, and subsequent behavioural change, were important factors. For example, one participant stated: "*I can better identify how I feel and have greater opportunity to change the situation appropriately*". Additionally, participants

indicated that they felt supported by other members of the group and this was also an important factor.

When asked “In what way has your life changed as a result of participating in this program?”, a number of themes were identified from participants’ responses, namely, control over problematic behaviours, reduction in binge eating and cessation of binge eating, awareness of emotions and triggers for binge eating, self-validation, eating mindfully, development of emotion regulation skills, and increased distress tolerance. One participant stated that she felt she had “*more control over her life*”, while another stated that she had “*skills that are practical enough to support a more confident attitude towards the problem of emotional eating and being distressed by strong emotions generally*”. Other participants stated that they felt more understanding of themselves and the behaviours they engage in, and more conscious of certain emotions.

Several themes were identified from responses to the question “In what ways did the treatment help?”. The main themes were: skills development, behavioural changes in binge eating, increased confidence, increased mindfulness and awareness of emotions and vulnerabilities to binge eating, reconnecting with values (i.e., what is most important to them), and binge eating cessation and developing a healthier relationship with food.

When asked, “In what ways did the treatment fail to help you?”, participants responded in three ways. Firstly, most ($n = 17$) participants indicated that the treatment did not fail them (“*I don’t think the treatment failed me in any way*”, “*Can’t think of any*”, “*I rate this treatment as a success for me*”). Secondly, several participants indicated that they would have liked the program to run over a longer

period, with one of these participants specifically stating that she would have liked the program to be longer (six months) so as to reinforce her use of the skills. Thirdly, one participant indicated a desire for more comprehensive course notes with detailed practical examples of skills use.

The group versus individual treatment format was also examined. No participants indicated that they would have preferred to have received individual treatment. One participant indicated that individual therapy sessions might have been useful as an “*additional component*”. Some participants ($n = 4$) indicated that “*shared experiences*” were an important aspect of the group work. Additionally, participants indicated that they felt a sense of “*community*” and were able to learn skills such as self-validation as a result of the group format.

When asked “Which skills helped you the most?”, participants indicated that urge surfing, mindfulness and mindful eating skills, opposite-to-emotion action, clarifying values and engaging in values consistent behaviour, and behavioural chain analysis were the most helpful skills. Participants were also asked “In your opinion, were there too little, too many, or just the right number of skills taught?”. All participants indicated that the number of skills taught was the right amount for them.

Several suggestions were made in response to the question, “Do you have any ideas that would help improve the treatment program?”. One participant indicated she would have liked an individual “*catch-up*” session for a missed group session; another participant would have liked a “*slower pace*” in the treatment delivery. Other suggestions included introducing cue cards to help remind participants how to use specific DBT-Values-BED skills and providing additional course notes to supplement the group sessions.

Therapist Observations

During the first half of each group treatment session, participants shared their experiences of practicing skills in the previous week, as well as sharing with the group examples of Behavioural Chain Analyses they had completed on episodes of binge eating. At each of these sessions, the therapist monitored the range of emotions participants identified as factors that led to binge eating. More than half of the time, shame was identified as the primary emotion that led to binge eating. The therapist identified shame as distinct from feelings of guilt, due to the observation that participants' comments were about aspects of themselves rather than their behaviours and actions. Examples of shame-related thoughts and feelings that prompted urges to escape through binge eating included "I'm disgusting", "My body is fat and ugly", and "I feel so heavy and fat and like a failure". Frequently, participants reported that, whilst binge eating, they felt distracted from feelings of shame that lasted from five to 20 minutes. However, all participants reported that shame, as well as feelings of guilt, were more intense following the binge episode.

Discussion

This study is a preliminary investigation of the utility of incorporating values and committed action as a skills module to group DBT for binge eating. The values and committed action skills taught were aimed at strengthening the capacity to tolerate difficult emotions in the service of connecting with what is important to individuals, including the reduction of binge eating. Additionally, the study aimed to examine the impact of reducing the length of treatment from 20 to 14 weeks, on eating disordered psychopathology and related variables. The present findings provide preliminary support for both the addition of values and committed action as a DBT skills module and the reduction in treatment length. Specifically, there were

significant and substantial improvements in binge eating tendencies, distress tolerance, emotion regulation, emotional eating, psychological flexibility, and engagement with valued living, from pre- to post-treatment.

In the DBT model, affect regulation is the core issue related to behavioural dysregulation. It is the experiencing of strong emotions as intolerable that leads individuals to use other means, such as binge eating, as ways of controlling or managing these emotions. Teaching skills to manage these strong emotions effectively reduces the likelihood of individuals engaging in behaviours that cause them distress and harm. The large treatment effect sizes from the current study add support for an affect regulation model of binge eating pathology. Additionally, the large treatment effect sizes in this study were comparable to the large treatment effects seen in other DBT treatment studies for BED. The participants reported that enhancing their emotion regulation capacity, as well as their distress tolerance skills, contributed to a reduction in binge eating pathology including emotional eating. However, all participants noted that learning to manage their emotions was challenging, and that having clarity around their values helped them to tolerate the difficulty of acting skilfully to manage emotion dysregulation and tolerate psychological distress. This has suggestive clinical implications regarding the importance of including a values and committed action focus in emotion focused treatments for BED.

Abstinence rates from binge eating at post-treatment were 57%. These results compare favourably with results from other DBT for BED interventions whose abstinence rates are approximately 56% at post-treatment and follow-up (Telch et al., 2000; 2001). Furthermore, that similar abstinence rates can be found in a shorter DBT for BED intervention (with an additional skills module) has important clinical

implications, in that a treatment of shorter duration potentially reduces the burden on clients and service providers. The low level of attrition in this study compares favourably with other DBT-BED interventions, and is a strength of the study.

Yet there are also several noteworthy limitations of the study that must be considered when interpreting the findings. First, whilst the uncontrolled design of this study is appropriate for a preliminary investigation, and improvements in eating psychopathology and emotion regulation are consistent with the treatment being efficacious, they cannot necessarily be directly attributed to the treatment itself as opposed to other potential factors (e.g., therapist effects). Notwithstanding these limitations, given the relative stability of BED over time, it could be argued that the substantial improvements in binge eating, emotion regulation, and distress tolerance observed in this study would not have occurred without the contribution of the intervention. A second important limitation of this study is the small sample size. Future studies should therefore examine this novel intervention with larger sample sizes and include a control group (e.g., an active comparison group of DBT-BED without the values component). Increasing the sample size would enhance the generalisability of the findings and the statistical power of the analyses (although this was not a problem in the current study given the magnitude of the changes), while the inclusion of an active comparison group would allow for an examination the distinctiveness of Values and Committed Action (as a mechanism of action) in reducing binge eating. Additionally, participants in this study were recruited for emotional eating and may have been particularly receptive to participating in the treatment. Therefore, caution should be used in generalising the findings from this study to other populations.

In addition to these considerations, the absence of a post-treatment follow-up period is a limitation that needs to be addressed in future research. Follow-up periods of three, six, and 12-months would allow for an examination of whether treatment gains have been maintained over time.

As well as these improvements in study design, future research on this intervention should also examine its potential impact on weight loss. Currently, evidence for the impact of DBT and ACT on weight loss is limited. Given that individuals with BED are often overweight or obese, it would be important to examine whether reductions in binge eating are associated with weight loss and whether this weight loss is maintained over time. The potential for a Values enhanced DBT for BED intervention to positively impact weight loss has important implications for health, as well as implications for reducing weight stigma and shame regarding body shape and size.

Finally, future studies should also examine the role of shame as a potential antecedent of emotional eating behaviour. The participants in this study highlighted in their chain analyses that they frequently experienced shame as a trigger for episodes of binge eating. The fact that the measure of emotion-induced binge eating used in this study (the EES) did not include a Shame subscale is a limitation. Future studies could incorporate a Shame subscale into existing emotional eating measures (such as the EES) and examine whether it is indeed a unique subconstruct of emotional eating. This has the potential to improve our understanding of the role of emotion in binge eating as well as enhance BED interventions to include a focus on shame.

In summary, this highly preliminary study showed evidence of marked changes in binge eating tendencies, emotion regulation, distress tolerance, and values-

based living in individuals with clinical or sub-clinical BED. Whilst the reduction in binge eating tendencies did not exceed what was achieved in other interventions, the remission rates in this study were comparable to previous research on DBT using a longer format. The results from this pilot study suggest that further investigation of the role of a values component in DBT for BED is warranted. Moreover, the study's largely unforeseen finding that shame was implicated in a large proportion of the participants' binge eating episodes underscores the need for research to address this largely neglected construct in the eating disorders literature.

CHAPTER 7.

SHAME AND DISORDERED EATING

In the literature there is a great deal of focus on the role of emotion in the development and maintenance of eating disorder psychopathology and related constructs such as body image disturbance. Typically, the basic, primary emotions such as anger, frustration, anxiety, and sadness are those that are examined. Indeed, the assessment instruments that examine the relationship between emotion and disordered eating, such as the Emotional Eating Scale (EES), have the primary emotions as their main point of focus. Yet in recent years, there has been an increased interest in the role of secondary emotions, such as shame, as antecedent and maintenance factors in a range of disordered eating problems, such as emotional eating and binge eating behaviour.

This chapter provides an overview of shame and examines its relationship to disordered eating. It includes an examination of the concept of shame generally, followed by a focus on the relationship between shame, body image disturbance and its origins, and eating disorder psychopathology. Lastly, this chapter provides an overview of the issues in assessing the relationship between shame and disordered eating and proposes that a greater focus on shame as a trigger for disordered eating is required.

Conceptualisation of Shame

Shame is a multifaceted emotion that belongs to a wider group of secondary self-conscious emotions such as guilt, pride, and embarrassment (Kim, Thibodeau, & Jorgensen, 2011). Collectively, these self-conscious emotions are defined as “self-

evaluative processes in relation to important standards for behaviour” (Kim et al., 2011, p. 69). From a development perspective, self-conscious emotions are thought to emerge at approximately two years of age; later than their primary emotion counterparts (Gilbert, 2002). These developmentally-later emotions are thought to be important in the motivation and regulation of thoughts, feelings, and behaviour, and difficulties with them are associated with a wide range of psychological problems such as depression and eating disorders (Tracy & Robins, 2004).

Gilbert (2009) describes shame as “an unwanted and difficult-to-control experience” (p. 4) that can shape a person’s sense of self. Central to the development of shame is the process of self-evaluation, which is an awareness of whether or not one has achieved real or idealised self-representations (Tracy & Robins, 2004). Shame prone individuals display a tendency to attribute negative experiences to core negative aspects of the self (Hayaki, Friedman, & Brownell, 2002). This failure to live up to real or idealised self-representations is a painful feeling that negatively affects a person’s sense of self-worth and results in cognitions and feelings that are difficult to tolerate, for example, feeling different from other people, or flawed and defective (Doran & Lewis, 2012; Tangney & Dearing, 2002). This ‘affect of inferiority’ (Kaufman, 1989) is experienced by the person as intense and incapacitating, and fosters feelings of hopelessness, weakness, and inferiority (Doran & Lewis, 2012). Compared with other emotions, shame is thought to be particularly detrimental, due to the pervasive belief that one is characterologically defective (Scholenleber & Berenbaum, 2012).

The worthlessness, inferiority, and heightened self-awareness associated with shame often trigger urges to avoid or escape from these painful experiences. Gilbert (1998) proposed that shame avoidance behaviours function to reduce awareness of,

and contact with, a sense of self that is experienced as defective, weak, and inferior, and can be categorised into four distinct behavioural categories: (1) hiding the behaviour that is part of the overall shame response so as to avoid the threat to the self to be hurt (e.g., binge eating behaviour is often hidden because the person is ashamed of what they are doing), (2) behaviours that function as coping strategies as shame is occurring (e.g., binge eating behaviours acting a distraction from feelings of shame), (3) safety behaviours that function to avoid detection (e.g., setting perfectionistic standards such as the goal to avoid all high fat foods in an attempt to correct the perceived defectiveness), and (4) behaviours that function to soothe the self or others (e.g., making apologies, showing submission, or attempting to repair those aspects of oneself that are perceived to be defective and flawed). Shame avoidance behaviours have the effect of distracting the individual from shame in the short-term, however perpetuate feelings of shame in the longer term.

In addition to the behavioural aspects of shame, theorists assert that several factors predispose an individual to experience shame at any point in time; these are collectively referred to in the literature as shame-proneness. Shame-proneness can be conceptualised as internal or external. Internal shame refers to a person's perception about how flawed, unattractive, defective, worthless, and inferior they are, and is frequently accompanied by intense and pervasive self-criticism (Gilbert, 2002). Conversely, external shame refers to the perception that others view the self as unworthy and as an object of scorn, ridicule, and contempt (Troop & Redshaw, 2012).

The terms "shame" and "guilt" are often used interchangeably in the literature. However, as will be demonstrated, a careful examination of these concepts highlights the importance of differentiating shame from guilt because they are two related but

distinct experiences. Tangney (2002) argues that shame includes a focus on the self (i.e., that the self is defective, weak, and unworthy) whereas guilt is associated with one's behaviour, in that one's actions (or inaction) are negatively evaluated such that a preoccupation with these behaviours and a strong desire to atone for them ensues.

Shame and Eating Disorder Psychopathology

Aversive emotions have long been implicated in eating and weight disorders. Eating behaviours (particularly binge eating) are thought to function as a means of regulating these emotions (Zeeck et al., 2011). The role of the "basic emotions" (such as anger, anxiety, and frustration) in eating behaviour, have been extensively studied, however the role of self-conscious emotions such as shame have received much less attention (Jambekar, Masheb, & Grilo, 2003). Goss and Gilbert (2002) outline a shame-shame cycle of eating disorder psychopathology in which eating disorder symptoms (i.e., binge eating, self-induced vomiting, restrictive eating, and compulsive exercising) are used by individuals to protect themselves from underlying feelings of shame, related to personal beliefs about one's inadequacy and fears of how one is perceived by others (Kelly, Carter, & Borairi, 2014). However, they suggest that these attempts to regulate shame only provide temporary relief and intensify these feelings in the long-term.

It has only been in the past decade or so that the role of shame in eating disordered pathology has begun to be empirically investigated. This research suggests that shame predicts eating disorder psychopathology in both clinical (Doran & Lewis, 2012; Hayaki et al., 2002; Kelly & Carter, 2013) and community populations (Burney & Irwin, 2000; Doran & Lewis, 2012; Hayaki et al., 2002). For example, Hayaki et al. (2002) examined the relationship between shame and the severity of bulimic

symptoms in clinical and university undergraduate populations. They found that shame was positively associated with the severity of bulimic symptoms, after controlling for the effects of guilt and depressed mood in a group of 137 female undergraduate university students. It was similarly found that the severity of shame was higher in the bulimic sample ($n = 30$) compared to the sample of eating disordered participants with subclinical symptoms ($n = 28$).

Differentiating between the different types of shame, research has found a relationship between both external and internal shame and eating disorder symptomatology. Beginning with the former, Franzoni et al. (2013) examined the association between shame and body dissatisfaction in sample of eating disordered patients ($n = 143$; anorexia nervosa = 67, bulimia nervosa = 52, and Eating Disorder Not Otherwise Specified [EDNOS] = 24) using the Experience of Shame Scale (a measure of external shame). The researchers found that, irrespective of levels of trauma or depressed mood, feelings of shame were correlated with body dissatisfaction. In a similar study conducted by Ferreira and colleagues (2013), 102 women with eating disorders (anorexia nervosa = 32.4%, bulimia nervosa = 30.4%, and EDNOS = 37.2%) and 123 women without an eating disorder completed a battery of measures that examined their experience of external shame (as measured by the Other as Shamer Scale) and eating disorder symptoms. The researchers found that external shame predicted drive for thinness in both the clinical and non-clinical samples.

In terms of internal shame, the Internalised Shame Scale (Masheb, Grilo, & Brondolo, 1999) has been used to investigate the relationship between BED and internal shame, as well as the experience of shame and gender differences in individuals with BED (Jambekar, et al., 2003). This research suggests that men and

women experience similar levels of shame, with significant associations between internalised shame and key attitudinal features of eating disorders such as eating, shape, and weight concerns, and dietary restraint in individuals with BED. Similarly, research using the Test of Self-Conscious Affect and the Personal Feelings Questionnaire has shown that this measure of internal shame is positively correlated with bulimic symptomology (Hayaki et al., 2002; Sanftner, Barlow, Marschall, & Tangney, 1995), body dissatisfaction, drive for thinness, and a number of other interpersonal difficulties (Sanftner, et al., 1995).

When considering shame in the context of other negative emotions, Gupta, et al. (2008) showed that chronic feelings of shame were more predictive of eating disorder symptoms than general negative emotions. Likewise Troop, et al. (2008) found that individuals with eating disorders experience higher levels of shame-proneness compared to individuals without eating disorders, or individuals with depression or an anxiety disorder.

In addition to correlational research, experimental research has been conducted providing support for the casual role of shame in disordered eating. Specifically, experimental studies using non-clinical samples have found that shame is associated with an increase in disinhibited eating and a desire to eat, perhaps as a function of protecting the individual from the devalued self (i.e., down-regulating shame). For example, in two studies conducted by Chao and colleagues (2012), the researchers examined desire for eating food (study 1) and actual food consumed (study 2) following a mood-induction technique designed to induce external shame. In the first study, 56 participants (28 women and 28 men) were randomly assigned to either a shame or no-shame condition. Following the mood-induction technique (i.e., an easy-task-failure paradigm in which participants were told they had failed a competitive

reaction-time task against an opponent who was one of the slowest tested so far, and whose results were then posted on a website to increase exposure and feeling shame), participants in the shame condition exhibited heightened levels of shame and an increased desire to eat food, compared to participants in the no-shame condition. In the next study, the researchers randomly assigned 102 participants to one of three conditions (i.e., shame, guilt, or neutral) and used an emotional-event technique (i.e., recalling and writing down an event that had been associated with strong feelings of shame) to induce the relevant affect. The researchers found that participants in the shame condition experienced significantly more shame than participants in either the guilt or neutral condition, and consumed more food than participants in the other experimental conditions. The authors suggested that the eating behaviour (and overeating specifically) exhibited in their research is consistent with the notion that increased food consumption provides an escape from negative affect, and thereby operates as an emotion regulation strategy. Furthermore, they suggest that shame may have specific and deleterious implications over and above other emotions in eating behaviour.

Body Shame and Eating Disorder Psychopathology

Beyond shame related to a general sense of a defective self, shame may be eating disorder specific in individuals experiencing eating disorder psychopathology in the form of focusing on the person's self-worth specifically in relation to their eating behaviour and body size and shape (Allan & Goss, 2012). In this sense, a person's self-worth is conditional on meeting certain standards about control over eating behaviour and achieving a certain size and weight (Allan & Goss, 2012). Individuals with eating disorder psychopathology are often intensely critical of their bodies and eating behaviours. This self-criticism leads to feelings of shame, which

can in turn trigger (1) an increase in behavioural control (such as restrained eating and compulsive exercise) to alter dissatisfaction with weight, shape, and eating behaviour (Kelly & Carter, 2013) or (2) binge eating to escape this negative self-state.

In terms of the former, Allan and Goss (2012) assert that behavioural control temporarily reduces feelings of shame by increasing a sense of pride, that is, a feeling that one has accomplished something of value (internal pride) and that this will be admired and approved of by others (external pride). However, this sense of pride is ultimately short-lived, because the standards one needs to meet in order to distract oneself from or reduce self-criticism and shame are extreme, and tend to increase over time (Kelly & Carter, 2013).

In terms of the latter, Duarte, Pinto-Gouveia, Ferreira, and Batista (2014) tested the behavioural aspects of shame avoidance as it relates to binge eating. They suggested that one of the main functions of binge eating behaviour is to avoid distressing thoughts (i.e., harsh self-criticism) and strong unwanted emotional states (i.e., shame). The relationship between body shame, self-criticism (i.e., internal shame), and binge eating were examined by the researchers in a community sample of 329 women who completed measures of binge eating (Binge Eating Scale), body image shame (Body Image Shame Scale), self-criticism (Forms of Self-Criticizing/Attacking & Self-Reassuring Scale), and depression and anxiety (Depression and Anxiety Scales). Beyond general negative affect, the researchers found that body shame was a strong predictor of binge eating and was mediated by harsh self-criticism.

Additional research has also examined the association between general and eating disorder specific shame. Doran and Lewis (2012) examined the

general/characterological (i.e., shame about the self), behavioural (i.e., shame regarding one's eating behaviour), and bodily (i.e., shame about aspects of one's body) components of shame in a non-clinical sample of 859 female and 256 male participants and a clinical sample of 167 female participants. While the breakdown of diagnoses was not stated in the paper, the authors noted that in the clinical sample the majority of participants identified as having anorexia nervosa, with bulimia nervosa and EDNOS making up the remainder of the diagnoses. It was found that both characterological and body shame were independent predictors of eating disturbances for the non-clinical female sample, however only body shame was a significant predictor of eating disturbance for the female clinical sample and non-clinical male sample. The authors argue that their research supports the view that individuals with eating disorder psychopathology tend to feel worse about themselves in relation to how they perceive their bodies, more than their eating disordered behaviours or general self. Since this study did not specifically address the association between various types of shame and eating disorder symptomatology in individuals with BED, it is unclear whether this assertion extends to BED.

Yet research conducted by Masheb and colleagues (1999) suggests that individuals with BED may indeed experience shame particularly in relation to their body shape and weight. These researchers investigated the relationship between eating disorder psychopathology and trait shame in a clinical sample of women ($n = 72$) with BED and compared these results to a sample of women diagnosed with vulvodynia ($n = 57$) and a non-clinical control group ($n = 74$). Confirming previous findings of an association between general shame and eating disorder symptomatology, the researchers found that the BED group reported significantly higher levels of shame compared to the medical (vulvodynia) and healthy control

group. Yet, in addition, the study found significant associations between shame and shape and weight concerns (as measured by the Eating Disorder Examination Questionnaire) but not between shame and eating concerns and restraint (i.e., the behavioural aspects of eating psychopathology) in the BED group. The results suggest that women with BED may be especially vulnerable to experiencing shame in the context of negative self-evaluations about their appearance rather than their eating-related behaviours.

Research of this kind suggests that body shame (in addition to general shame) is an important aspect of BED. Body shame can be defined as “the emotion that can result from measuring oneself against a cultural standard and perceiving oneself as failing to meet that standard” (Dakanalis et al., 2014, p. 36). Central to the understanding of the development and maintenance of body shame is Objectification Theory. Two pioneers in the development of Objectification Theory, Fredrickson and Roberts (1997), assert that women exist in a sociocultural context in which their bodies are viewed as objects, whose value is predominantly based on appearance and use. Fredrickson and Roberts argue that this objectification of women’s bodies is perpetuated by the mass media’s proliferation of images and messages regarding the idealised body. They further assert that, as a consequence, women internalise messages regarding physical appearance by incorporating them into their sense of self, and then become preoccupied with their physical appearance; seeking to comply with socialised values and attitudes regarding appearance. This preoccupation with physical appearance leads to an increase in self-consciousness and persistent monitoring of appearance, facilitating an increase in body dissatisfaction, the emergence of body shame, and disordered eating (Dakanalis et al., 2014; McKinley & Hyde, 1996). According to Objectification Theory, a discrepancy between the

perceived self and the unattainable thin ideal, leads to feelings of failure and inadequacy that can produce body shame (McKinley & Hyde, 1996).

Several studies have investigated the role of body objectification in the development of body shame and disordered eating. Dakanalis and colleagues (2014) examined the internalisation of media ideals, eating disordered behaviours, body surveillance, and body shame (using the Bodily Shame Scale) in a sample of 408 women. The researchers found that the internalisation of media ideals regarding physical appearance led to an increase in self-consciousness and negative evaluations which led to body shame. Additionally, the researchers found that body shame was a strong predictor of women's eating disordered behaviours and drive for thinness. In another study, the Body Shame subscale of the Objectified Body Consciousness Scale was utilised to examine the relationship between body shame and recovery from an eating disorder (Fitzsimmons, Bardone, & Kelly, 2011). More specifically, Fitzsimmons and colleagues (2011) examined the relationship between objectification and body shame in a sample of eating disordered women at varying stages of recovery ($n = 96$) and a group of female controls ($n = 67$). The researchers found that eating disordered participants, at all stages of recovery, had higher levels of self-objectification and body shame compared to the control group. The results of this study provide support for the role of self-objectification and body shame in the maintenance of eating disorders.

Beyond eating disorders, the role of body shame has also been examined in the obesity context, which has relevance for BED given the elevated rates of overweight/obesity among individuals with BED. In the Cyclic Obesity/Weight-Based Stigma (COBWEBS) model, Tomiyama (2014) describes a vicious cycle in which the pervasive occurrence of obesity-related stigma is experienced as a stressor

that prompts the specific emotion of shame (presumably general and body shame), which in turn leads to increased eating. This increased eating leads to further weight gain and failed attempts to lose weight, leaving the individual vulnerable to further experiences of obesity-related stigma and feelings of shame. Thus according to this model, shame plays a pivotal role in the highly prevalent problem of obesity, which further underscores the need for research focused on this construct.

Limitations in the Assessment of Shame and Body Shame in Eating Disorders

Shame (external and internal) and body shame are most frequently examined with the use self-report measures. There are two main measures of external shame: the Experience of Shame Scale (ESS; Andrews, Qian, & Valentine, 2002) and the Other as Shamer Scale (OAS; Allan et al., 1994; Goss, Gilbert, & Allan, 1994). The three main measures for internal shame include: the Test of Self-Conscious Affect (TOSCA; Tangney, Wagner, & Gramzow, 1989), the Internalised Shame Scale (Masheb, et al., 1999), and the Personal Feelings Questionnaire (PFQ-2; Harder & Zalma, 1990). For body shame, there are two measures that are used in the eating disorder literature: the Bodily Shame Scale (BSS; Troop, Sottrilli, Serpell, & Treasure, 2006) and the Objectified Body Consciousness Scale, which includes a Body Shame subscale (McKinley & Hyde, 1996). The Body Image Shame Scale (BISS; Duarte, et al., 2014) is a new assessment tool that assesses an external and internal dimension of body shame, but at present the research on this scale has been on validating the measure, and it has not yet been used in clinical studies.

A difficulty with all of these measures in eating disorder research is that although they provide information about the relationship between shame and disordered eating, they do not examine the role of shame and body shame as an antecedent for emotional eating behaviour. Hence they provide only limited

evaluation of the hypothesis that shame and body shame act as triggers for disordered eating. The Emotional Eating Scale (EES; Arnow, et al., 1995) overcomes this limitation as it assesses a dimension of eating (emotional eating) that is related to binge eating. It explores the role of emotion as an antecedent and coping strategy for emotional eating and it has the potential to capture the role of shame and body shame as a trigger for binge eating. In its current form it is used to measure eating in response to different emotions such as anger, frustration, anxiety, and boredom. Binge eating in response to negative emotions has been examined with the EES in a variety of populations such as BED and the obese (Zeeck, et al., 2011) and has been adapted for use with children (Tanofsky-Kraff et al., 2007). However, the EES does not address the role of shame.

Summary

Shame and body shame have been found to be associated with eating disordered pathology, including BED. While there are several instruments that assess shame (both internal and external) and body shame, there are no such instruments that measure either construct as antecedents for emotional eating. There is thus a need for a psychometrically sound instrument that can capture the role of shame and body shame in eating behaviour. Given the prominent role of the self-conscious emotion shame in eating disordered behaviour, and that the EES is frequently used to examine emotion in binge eating, modification could be made to this instrument to include shame and body shame. This would allow researchers to more comprehensively investigate the emotional experiences of people who regulate negative emotion with eating.

CHAPTER 8.
REVISION OF THE EMOTIONAL EATING SCALE WITH A FOCUS ON
SHAME

This chapter examines the addition of shame-specific subscales to the Emotional Eating Scale (EES). Affect dysregulation and negative mood states are associated with the development and maintenance of binge eating problems and other eating disordered pathology (Sanftner, Crowther, Crawford, & Watts, 1996). The negative mood states of shame and body shame are emerging as especially potent correlates and predictors of disordered eating (Fitzsimmons et al. 2011; Gupta et al. 2008; Kelly & Carter, 2013). However, current measures of eating and associated affect do not examine the role of shame as an antecedent for dysfunctional eating behaviour. Thus improvements in existing measures of eating pathology to include this construct are required.

The primary aim of this study is to ascertain whether eating when feeling shame is a unique construct compared to eating in response to other emotions by revising the EES (EES-R) to include separate Shame and Body Shame subscales. Several research questions will be investigated:

1. Is eating when feeling shame a unique construct, assessed by adding shame and body shame items to the EES and examining its factor structure?
2. Are shame and body shame correlated with related measures of general and eating disorder psychopathology?

3. Are shame and body shame better predictors of general and eating disorder psychopathology than other aspects of emotion-triggered eating ?
4. Is emotional eating (including shame and body shame) more prominent for individuals with probable BED compared to individuals with minimal or no eating disorder psychopathology?
5. Are urges to eat in response to shame and body shame better predictors of clinical levels of binge eating than other emotions?

Method

Participants

The study involved 373 participants who were recruited using the following methods: (a) eating disorder websites, (b) email snowballing, (c) internet advertisements, (d) postings on online forums and message boards, and (e) Amazon's Mechanical Turk. Participants included any adult (18+ years) who viewed the research advertisement and was interested in participating in the study. Participation in the study was anonymous and individual responses were not identifiable. Participants who completed the survey via Mechanical Turk received payment of US \$1 for their participation. Mechanical Turk is an online crowdsourcing platform, often used by behavioural researchers who are engaged in survey research (Mason & Suri, 2012). It provides researchers with access to a large pool of participants who respond to an open call to participate in the research and are then monetarily compensated for their participation. Research suggests that the quality of data collected via Mechanical Turk is reliable and meets acceptable psychometric standards associated with published research (Buhrmester, Kwang, & Gosling, 2011).

Measures

The following measures were administered in the study (copies are included in the Qualtrics online survey contained in Appendix B).

Revised Emotional Eating Scale with Shame and Body Shame Subscales.

The original Emotional Eating Scale (EES; Arnow, Kenardy, & Agras, 1995) is a 25-item questionnaire that measures the extent to which a range of emotions lead to urges to eat. The EES categorises emotions into three subscales: Depression (i.e., worn out, blue, sad, lonely, and bored); Anxiety (i.e., shaky, excited, jittery, uneasy, worried, on edge, confused, nervous, and upset); and Anger/Frustration (i.e., resentful, discouraged, inadequate, rebellious, irritated, jealous, frustrated, furious, angry, guilty, and helpless). Items are rated on a 5-point scale, ranging from 1 (*no urge to eat*) to 5 (*overwhelming urge to eat*). The psychometric properties of the original EES demonstrate good internal consistency and adequate temporal stability (Safer, et al., 2010). In terms of validity, the EES has good construct, criterion, and discriminant validity.

For this study, the EES Boredom subscale (Koball, et al., 2012) was added to the original EES, given that boredom has been linked to overeating (Caldwell, Smith, & Weissinger, 1992). The Boredom subscale consists of six items (i.e., blah, nothing to do, unstimulated, unexcited, restless, and disinterested), and has been found to have sound psychometric properties including internal consistency and construct validity.

The present study developed an additional 12 items that tap shame and body shame for a total of 43 items on the revised EES (EES-R). Items for the two shame subscales were developed on the basis of theoretical conceptualisations of these constructs and existing measures. Selection of the Shame subscale items was

informed by thesaurus-guided synonyms (a method similar to that used by Koball and colleagues [2012] in their construction of the Boredom Subscale), with the final subscale consisting of the items disgraced, embarrassed, shame, humiliated, bad, and self-disgust. The Body Shame subscale items were constructed from modifications made to the Body Shame subscale of the Objectified Body Consciousness Scale (McKinley & Hyde, 1996), with the final subscale items including: “When I can’t control my weight, I feel like something must be wrong with me”; “Feeling ashamed of my body when I haven’t made the effort to look my best”; “Feeling like I must be a bad person when my body I does not look as good as it could”; “Feeling ashamed when people see my body”; “Feeling like I’m not an okay person when I can’t control my weight”; and “Feeling ashamed when I’m not the size I think I should be”.

Eating Disorder Examination Questionnaire. The Eating Disorder Examination Questionnaire (EDE-Q; Fairburn & Beglin, 1994) is a 41-item self-report version of the Eating Disorder Examination, a well-established semi-structured interview. The EDE-Q consists of questions that concern the frequency in which respondents engage in behaviours indicative of an eating disorder over the previous 28-day period, as well as four subscales assessing the severity of eating concerns, shape concerns, weight concerns, and dietary restraint, respectively. Frequency and severity items are rated on a 6-point scale, ranging from 0 (*no days*) to 6 (*every day*) for frequency, and 0 (*not at all*) to 6 (*markedly*) for severity of behaviours over the past 28 days. The psychometric properties of the EDE-Q demonstrate high internal consistency and good test-retest reliability (Luce & Crowther, 1999).

As well as providing continuous measures of eating disorder symptomatology, the EDE-Q was also used to create categorical groups related to binge eating. First, items from the EDE-Q that assess for binge eating were used to create a no eating

disorder group and a probable BED group. For the probable BED group, the key criterion was the regular occurrence of objective binge eating episodes defined as: (a) eating an unusually large amount of food and (b) experiencing a sense of loss of control whilst eating, occurring at least once a week over the past 28 days, in accordance with the *DSM-5* criteria (APA, 2013). Participants whose behaviours were considered to be indicative of a subthreshold form of bulimia nervosa, as per Harrison, Mond, Rieger, and Rodgers' (2015) method, were excluded. This consisted of engaging in weight control behaviours (i.e., self-induced vomiting or laxative use, extreme dietary restriction, and driven exercise) occurring more than twice a month. For the no eating disorder group, the key criterion was the absence of regular extreme weight-control behaviours as well as the absence of clinical levels of binge eating (i.e., less than three episodes over the past 28 days).

Second, in order to examine the predictive relationship between the Shame and Body Shame subscales and binge eating, three sub-groups were created following the method utilised by Dondzilo, Rieger, Palermo, Byrne, and Bell (in press). Specifically, the three categories consisted of: (a) non binge eating, (b) occasional binge eating (i.e., engaging in objective binge eating episodes no more than twice per month), and (c) recurrent binge eating (i.e., engaging in objective binge eating episodes at least once per week).

Loss of Control Over Eating Scale. As an additional measure of eating disorder symptomatology that is more specifically related to binge eating, the Loss of Control Over Eating Scale (LOCES; Latner, personal communication, 2013) was administered, which measures loss of control over eating during the previous three-month period. It is a 59-item self-report questionnaire that asks respondents to think about typical episodes of eating where loss of control was experienced, and

indicate to what extent they relate to items such as “I felt I had lost control over eating” and “I kept eating despite feeling bloated”. Items are rated on a 5-point scale, ranging from 1 (*not at all true for me*) to 5 (*extremely true for me*). All 59 LOCES items were retained for this study. At the time of conducting this study, psychometric properties for the LOCES had not been established. Despite this issue, the measure was chosen because loss of control over eating is a central feature of BED, and is an indicator of clinically significant disturbances regardless of the quantity of food eaten (Latner, Mond, Kelly, Haynes, & Hay, 2014). For example, research suggests that the loss of control over eating in BED is associated with more comorbid psychopathology, psychological distress, and body image concerns compared to individuals who experience recurrent overeating without loss of control (Latner & Clyne, 2008).

Positive and Negative Affect Schedule. The Positive and Negative Affect Schedule (PANAS; Watson, Clark, & Tellegen, 1988) is a 20-item self-report instrument that comprises two, 10-item mood scales, one measuring positive affect (e.g., enthusiastic, proud, and excited) and the other measuring negative affect (e.g., hostile, distressed, and nervous). Respondents are asked to indicate to what extent they feel certain feelings and emotions right now. Items are rated on a 5-point scale, ranging from 1 (*very slightly, or not at all*) to 5 (*extremely*). The PANAS has been found to have sound psychometric properties including internal consistency and convergent and discriminant validity.

Rosenberg Self Esteem Scale. The Rosenberg Self Esteem Scale (Rosenberg, 1965) is a 10-item self-report questionnaire that measures trait self-esteem by asking respondents to reflect on their overall evaluation of their self-worth (i.e., “On the whole, I am satisfied with myself” [reverse scored] and “I certainly feel useless at

times”). Items are rated on a 4-point scale, ranging from 1 (*strongly agree*) to 4 (*strongly disagree*), and the scale score ranges from 0-30, with 30 reflecting the highest rating of self-esteem. The psychometric properties of the RSES have been well established, including the fact that it has good internal consistency ($\alpha = .77 - .88$)

Other as Shamer Scale. The Other as Shamer Scale (OAS; Allan, Gilbert, & Goss, 1994; Goss, et al., 1994) is an 18-item self-report questionnaire that measures external shame by assessing one’s self-perception (global judgements) about how one is evaluated by others. Respondents are asked to rate how frequently they feel that people perceive them in a certain way (e.g., “Other people see me as somehow defective as a person” and “Others see me as empty and unfulfilled”). Items are rated on a 5-point scale, ranging from 0 (*never*) to 4 (*almost always*). The psychometric properties of the OAS demonstrate good internal consistency ($\alpha = .92$) as well as good construct and convergent validity.

Personal Feelings Questionnaire. The Personal Feelings Questionnaire (PFQ2; Harder & Zalma, 1990) is a 22-item self-report instrument that measures proneness to shame and guilt, and is therefore a measure of internal shame and guilt. Respondents are asked to rate how often they have experienced particular feelings that tap shame and guilt, over the last few days. Items are rated on a 5-point scale ranging from 0 (*never*) to 4 (*continuously or almost continuously*). Examples of items used to assess shame-proneness are “feeling humiliated” and “feeling disgusting to others”, and guilt-proneness item examples include “remorse” and “feeling you deserve criticism for what you did”. The PFQ2 has adequate internal consistency ($\alpha = .72$ for guilt and $.78$ for shame) and good construct validity.

Procedure

Qualtrics Online Survey Software was used to develop a survey that consisted of demographic questions and the aforementioned measures that assessed emotional eating, eating disorder psychopathology, positive and negative affect, self-esteem, and internal and external shame. The survey took approximately 30 minutes to complete. Participants gave informed consent at the information page of the study and were informed that their responses were confidential and anonymous. The study was approved by the Human Research Ethics Committee (Protocol: 2012/327) of the Australian National University (see Appendix B for copies of the Information Sheet, and the Consent Form).

Statistical Analysis

Confirmatory factor analysis (CFA) and exploratory structural equation modeling (ESEM) were conducted to examine the factor structure of the revised EES. CFA is a procedure that is often used in the development and evaluation of psychological measures. Its primary aim is to confirm *a priori* hypotheses regarding the factors that should be represented in a given domain of enquiry (Floyd & Widaman, 1995). These hypotheses are influenced by relevant theory and/or previous research conducted in the domain of enquiry.

A six-factor model was specified and examined to ascertain whether it provided a good fit to the data. The six latent factors included anger, anxiety, depression, boredom, shame, and body shame. A series of alternative models were also tested to see if they were a better fit to the data. Residual values were examined to determine whether there were any discrepancies in model fit, and *post hoc* modifications were made to improve model fit.

Two categories of fit indices were examined to determine the goodness of fit between the hypothesised model and the data. These categories were 1) absolute fit and 2) incremental fit indices. Absolute fit indices provide the most fundamental indication of how well the proposed theory fits the sample data, compared to no model at all (Hooper, Coughlan, & Mullen, 2008). The main absolute fit indices of interest are the chi-square statistic (χ^2), standardised root mean square residual (SRMR), and the root mean square error of approximation (RMSEA). Matsunga (2010) suggests that an RMSEA smaller than .08 is considered acceptable under most circumstances and an SRMR less than .08 is indicative of good model fit. Regarding the chi-square statistic, it assesses model fit by comparing the observed sample correlation matrix with the correlation matrix predicted by the specified model (Brown, 2006). Hypothesised models are considered to fit the data if a non-significant chi-square ($p > .05$) is achieved. Although chi-square is regularly reported in CFA research, sole reliance on it as a measure of overall model fit is problematic because it is sensitive to, and often inflated by, large sample sizes and will often reject a model when a large sample is used (Brown, 2006). Due to these problems with the chi-square statistic, other fit indices were used to supplement model evaluation.

Incremental fit indices compare the chi-square value to a baseline model and assume that all variables are uncorrelated (Hooper et al., 2008). The incremental indices used to examine model fit in this study were the comparative fit index (CFI) and Tucker-Lewis index (TLI). Matsunga (2010) suggests that the conventional cut-off in the literature for CFI and TLI is about .90. Consistent with recommendations proposed by Hu and Bentler (1999), and Hooper and colleagues (2008), these fit indices were chosen because each taps into different aspects of model fit, and they are the least sensitive to issues such as sample size, parameter estimates, and model

misspecification. In addition to fit indices, modification indices and parameter estimates were examined to assess model fit.

In CFA models, each indicator loads onto only one factor with all non-target loadings constrained to zero (Marsh, Morin, Parker, & Kaur 2014). This is based on the premise that only certain factors in the model influence particular factor indicators, with no cross-loadings with other factors (Asparouhov & Muthen, 2009). Asparouhov and Muthen, 2009, suggest that although applications of CFA rely on strong measurement science, this is not always available when using real data. In practice, psychometric instruments can have (consistent with an underlying theory) factor indicators that will also be related to other latent factors, although to a much smaller degree. Asparouhov and Muthen (2009) assert that CFA can: (a) result in an overly restrictive model that does not fit the data; (b) require extensive modification to develop a well fitting model, and; (c) restrict item loading to only one factor can often result in inflated factor correlations. Given these limitations, an exploratory SEM model with six factors was also examined.

Exploratory Structural Equation Modeling is a relatively new form of model specification that is identical to Exploratory Factor Analysis (EFA) at the measurement level, however specifies an a priori structure similar to CFA (Guay, Morin, Litalien, Valois, & Vallerand, 2014). Although ESEM shares some of the features of CFA, it overcomes some of its previously mentioned limitations by allowing parameters (factor loadings across factors) to be freely estimated. Marsh and colleagues (2014) suggest that, in clinical psychology research, ESEM is preferable to CFA, writing that, “ESEM is most appropriate when it fits the data better than does a corresponding CFA model. Otherwise, the CFA factor structure is preferable, on the basis of parsimony” (p. 89).

Having specified the factor structure of the EES-R, zero-order correlations and hierarchical multiple regression analyses were conducted in order to examine how well the EES-R shame subscales predicted positive and negative affect, self-esteem, eating disorder psychopathology, and internal and external shame after the effect of the other EES subscales (i.e., anger/frustration, anxiety, depression, and boredom) were controlled for. In addition to these analyses independent-samples t-tests were conducted to compare the EES-R subscale scores for the probable BED and non-ED groups, and multinomial regression was conducted to examine the relationship between the EES-R subscales and occasional and recurrent binge eating.

Results

Demographic Information

Participants consisted of 373 men and women (72% female), with the majority aged between 26 and 35 years. Twenty-eight per cent of participants were Australian and the remaining 72% of participants were predominantly from the United States and India. Forty-eight per cent of participants had an undergraduate university degree. Mean scores on each of the self-report questionnaires are shown in Table 8.1.

Table 8.1

Minimum (MIN), Maximum (MAX), Mean (M) Scores, Standard Deviations (SD), and Cronbach's Alpha (α) for Each of the Measures (N = 370)

		<i>MIN</i>	<i>MAX</i>	<i>M</i>	<i>SD</i>	α
EES-R						
	Anger/Frustration	1.00	5.00	2.14	0.93	0.93
	Anxiety	1.00	5.00	2.62	1.13	0.89
	Depression	1.00	5.00	2.68	0.97	0.80
	Boredom	1.00	5.00	2.51	0.97	0.90
	Shame	1.00	5.00	2.10	1.12	0.94
	Body Shame	1.00	5.00	2.18	1.10	0.95
EDE-Q						
	Restraint	0.00	6.00	1.86	1.69	0.87
	Shape	0.00	6.00	2.72	1.70	0.90
	Weight	0.00	6.00	2.52	1.64	0.83
	Eating	0.00	5.60	1.58	1.50	0.84
	Global	0.00	5.65	2.18	1.44	0.68
PANAS						
	Positive	10.00	50.00	27.41	10.76	0.94
	Negative	10.00	48.00	16.76	8.51	0.94
PFQ-2						
	Guilt	0.00	22.00	8.64	4.94	0.84
	Shame	0.00	36.00	15.09	7.28	0.86
OAS		0.00	48.00	25.54	15.50	0.96
RSES		0.00	30.00	17.98	6.31	0.89
LOCES		56.00	262.00	141.30	52.00	0.98

Note. EES-R = Emotional Eating Scale Revised; EDE-Q = Eating Disorder Examination Questionnaire; PANAS = Positive and Negative Affect Scale; PFQ-2 = Personal Feelings Questionnaire; OAS = Other as Shamer Scale; RSES = Rosenberg Self-Esteem Scale; LOCES = Loss of control Over Eating Scale.

Factor Structure of the Revised Emotional Eating Scale (EES-R)

Prior to conducting the CFA, the data were screened for missing values and were replaced by inserting the value 999 for that variable. A six-factor measurement model consisting of latent variables for anger/frustration, anxiety, depression, boredom, shame, and body shame was specified. The CFAs were conducted using mean and variance adjusted weighted least squares procedures in Mplus version 7.2 (Muthen & Muthen, 2014).

Six-Factor Model. Based on prior evidence and theory regarding the role of shame in emotional eating and eating disorders generally, a six-factor model of the EES-R was specified. The chi-square value was significant $\chi^2(845) = 2843.960, p < 0.001$, indicating a poor fit to the data. As chi-square is sensitive to sample size and other factors, alternative fit indices were examined to determine whether the fit was adequate. Taken together, the alternative fit indices indicated an unacceptable fit, that is, CFI = 0.849, SRMR = 0.063, RMSEA = 0.080.

Respecified Six-Factor Model. Given that the fit indices did not provide support for the hypothesised model, the next step was to review the modification indices of all the parameters to examine whether revisions to the measurement model could be made to improve fit. A parameter's modification index provides an indication of how much the chi-square statistic would decrease if the parameter was freely estimated rather than fixed to zero (Brown, 2006).

On inspection, several parameters had large modification index values, highlighting potential to improve the model's fit. For example, the item 'discouraged' had a large modification index, suggesting that it could load on the Anxiety factor. Additionally, the items 'upset', 'worried', 'resentful', 'helpless', and 'bad' had large modification indexes, indicating their potential to load on the Depression factor. Similarly, 'worn out' and 'guilt' had dual loadings with the Shame factor. Modification indices also highlighted correlations between the unique variances of 'sadness' and 'blue', 'anger' and 'furious', 'upset' and 'sadness', 'disgust' and 'shame', 'humiliated' and 'embarrassed', 'nothing to do' and 'boredom', 'boredom' and 'lonely', 'bad' and 'upset', 'jittery' and 'discouraged', 'nervous' and 'on edge', 'furious' and 'resentment', 'upset' and 'helpless', and 'jittery' and 'discouraged'.

These loadings and correlations were considered to be conceptually and meaningfully significant, and were therefore included in a respecification of the six-factor model.

The fit indices of the revised six-factor model were examined (see Table 8.2), and although the TLI deviated slightly from a desirable cut-off of .90, the respecified six-factor model still provided an adequate fit to the data (CFI = 0.901; TFI = 0.893; RMSEA = 0.065; SRMR = 0.059). All item loadings (see Table 8.3) were significant and meaningful in terms of how well they represented the factors and were in an acceptable range of $>.30$. The item factor loadings ranged from 0.30 to 0.92 with 40 of the 43 factor item correlations larger than 0.60. Competing models were also tested to examine whether they could provide a better fit to the data, and are outlined below.

Alternative Models. A one-factor model (representing global emotional eating) evaluation was conducted, however, the fit indices indicated that the model was a poor fit to the data, $\chi^2(860) = 5515.95$, $p < 0.001$, CFI = 0.648, SRMR = 0.088. The three-factor model (which combined anxiety and anger indicators as one factor, depression and boredom indicators as a second factor, and shame and body shame indicators as a third factor), also proved a poor fit to the data, $\chi^2(857) = 4642.29$, $p < 0.001$, CFI = 0.648, SRMR = 0.106. The four-factor model (comprised of anger and anxiety indicators as one factor, depression indicators as a second, boredom indicators as a third, and shame and body shame indicators as a fourth factor) was a poor fit to the data, $\chi^2(853) = 4202.25$, $p < 0.001$, CFI = 0.747, SRMR = 0.089.

Table 8.2

Goodness-of-fit Indices for the Revised EES

Codes	Fit Indices						
	χ^2	df	CFI	TLI	RMSEA	SRMR	AIC
A	5515.95	860	0.648	0.630	0.120	0.088	43265.481
B	4642.29	857	0.714	0.698	0.109	0.106	42397.823
C	4202.25	853	0.747	0.732	0.103	0.089	41963.782
D	2843.96	845	0.849	0.838	0.080	0.063	40623.48
E	2138.37	833	0.901	0.893	0.065	0.059	39941.906

Note. Model A = single-factor model; Model B = three-factor model; Model C = four-factor model; Model D = six-factor model; Model E = six-factor model with *post hoc* modifications

Table 8.3

Standardised Revised EES Item Loadings for Confirmatory Factor Analysis

	Factor Loading
Factor 1 Anger/Frustration	
ANG3INAD Inadequacy	0.73
ANG4REB Rebellion	0.62
ANG5IRRI Irritation	0.81
ANG6JEAL Jealous	0.73
ANG7FRUS Frustration	0.81
ANG8FURI Furious	0.77
ANG9ANG Anger	0.77
Factor 2 Anxiety	
ANX1SHAK Shaky	0.44
ANX2EXCI Excitement	0.30
ANX3JIT Jittery	0.70
ANX4UNEA Uneasy	0.81
ANX6ONED On Edge	0.82
ANX7CONF Confused	0.80
ANX8NERV Nervous	0.75
ANG2DISC Discouraged	0.58
Factor 3 Depression	
DEP2BLUE Blue	0.73
ANX9UPSE Upset	0.77
ANX5WORR Worry	0.78
DEP3SAD Sad	0.75
ANG1RES Resentment	0.78
ANG1HEL Helpless	0.80
SHA5BAD Bad	0.82

Factor 4 Boredom		
BOR1BLAH	Blah	0.70
BOR2NOTH	Nothing to do	0.64
BOR3UNST	Unstimulated	0.86
ANG1HEL	Helpless	0.80
ANG1HEL	Helpless	0.80
BOR4UNEX	Unexcited	0.88
DEP5BORE	Bored	0.62
BOR5REST	Restless	0.75
DEP4LONE	Lonely	0.63
BOR6DISI	Disinterested	0.80
Factor 5 Shame		
SHA1SHAM	Shame	0.85
SHA2DISG	Disgraced	0.88
SHA3EMB	Embarrassed	0.80
SHA4HUM	Humiliated	0.80
DEP1WORN	Worn-out	0.81
SHA6SELF	Self-disgust	0.82
ANG10GUI	Guilt	0.76
Factor 6 Body Shame		
BODSHA1	When I can't control my weight I feel like something must be wrong with me	0.85
BODSHA2	Feeling ashamed of my body when I haven't made the effort to look my best	0.89
BODSHA3	Feeling like I must be a bad person when my body does not look as good as it could	0.92
BODSHA4	Feeling ashamed when people see my body	0.86
BODSHA5	Feeling like I'm not an okay person when I can't control my weight	0.90
BODSHA6	Feeling ashamed when I'm not the size I think I should be	0.89

Table 8.4

Factor Correlations for the Confirmatory Factor Analysis for the Revised Emotional Eating Scale (EES)

Factor	Anger/ Frustration	Anxiety	Depression	Boredom	Shame
Anxiety	0.89				
Depression	0.86	0.81			
Boredom	0.65	0.56	0.69		
Shame	0.84	0.77	0.95	0.60	
Body Shame	0.65	0.62	0.62	0.46	0.65

Note. All correlations are statistically significant ($p < .01$).

Although the respecified model provides a better fit to the data than the alternative models, there are several problems with this model. Firstly, a substantial number of modifications (using the modification indices as a guide) needed to be made to the model to improve model fit, and even with substantial modification, the results are marginally acceptable. As Hooper and colleagues (2008, p.56) point out, “allowing modification indices to drive the process is a dangerous game” due to the fact that substantial modification can allow even a poor fitting model achieve adequate fit. Additionally, excessive modification violates some of the guidelines around the use of modification indices, namely: modifications should be few in number and minor (Kline, 2005). Secondly, the correlations among factors are relatively high (i.e., .95 for depression and shame), calling into question whether they actually measure separate constructs. Some of these difficulties may relate to the CFA framework itself (i.e., CFA overestimating correlations among latent factors).

Exploratory Structural Equation Modeling. To address some of the problems with the CFA models, exploratory structural equation modeling (ESEM), was also used to examine the factor structure of the Revised EES. An exploratory

SEM model with six factors was examined (see Table 8.5). Results indicate acceptable goodness-of-fit indices (CFI = .93; TLI = .91; RMSEA = .06; SRMR = .02), which is an improvement on the respecified six-factor CFA model.

Table 8.5

Goodness-of-fit Indices for the ESEM Model of the Revised EES

χ^2	df	CFI	TLI	RMSEA	SRMR	AIC
1559.42	660	.93	.91	.06	.02	39708.95

The standardised loadings of the 43 items of the ESEM six-factor model are presented in Table 8.6. The first factor consists of five items with significant main loadings $>.30$ (i.e., worn-out, blue, sad, lonely, and bored) that reflect depression. The second factor consists of seven items with significant main loadings $>.30$ (i.e., excited, jittery, uneasy, worried, on edge, confused, and nervous) that reflect anxiety. The third factor comprises seven items with significant main loadings $>.40$ (i.e., inadequate, rebellion, irritated, jealous, frustrated, furious, and anger) reflecting anger. The fourth factor consists of all six body shame items that had significant main loadings $>.70$; and the fifth factor consists of all six items that reflect shame with significant main loadings ranging from .40 to .76. Lastly, the sixth factor contains all six boredom items with significant main loadings ranging from 0.55 to 0.82.

An examination of the cross-loadings revealed that most were small (i.e., $<.40$) and non-significant, with the exception of three items from the Anger factor (resentment, guilt, helpless) that had a significant cross-loading on the Depression factor. Additionally, another Anger factor item (discouraged) had a significant cross loading on the Anxiety factor. There were two Anxiety items, one of which (upset)

had a cross loading on the Depression factor, and the second (upset) did not significantly load on any of the factors.

The factor correlations (Table 8.7) were moderate (with the exception of the small correlation between anxiety and boredom) and statistically significant. The correlation between shame and depression was reduced from 0.95 in the CFA model to 0.56 in the ESEM model, suggesting that they are related but independent constructs. The reason for this is likely that cross-loadings assist with the estimation of associations between cross-factor indicators, whereas in CFA models, these associations are simply modelled by one parameter: factor correlations.

Table 8.6

Factor Loadings for the Revised EES from the ESEM Model

		Factor Loadings					
Factor Item		1	2	3	4	5	6
Anger/Frustration							
	Inadequacy	0.11*	0.01*	0.55	0.17	0.06*	-0.06*
	Rebellion	0.06*	0.18	0.41	0.08*	-0.04*	0.05*
	Irritation	0.26	0.06*	0.63	0.02*	-0.07*	0.04*
	Jealous	-0.03*	0.20	0.42	0.06*	0.16	0.11
	Frustration	0.34	0.14	0.33	0.05*	0.05*	0.13
	Furious	-0.02*	0.19	0.70	0.02*	0.04*	-0.01*
	Anger	0.03*	-0.06*	0.81	-0.05*	0.13	0.01*
	Guilt	0.35	-0.03*	0.13	0.03*	0.36	0.06*
	Discouraged	0.26	0.40	0.20	-0.01*	-0.17	-0.02*
	Resentment	0.57	-0.08*	0.13	0.14	0.11	0.08
	Helpless	0.45	0.16	-0.07*	0.04*	0.30	0.14
Anxiety							
	Shaky	0.29	0.04*	0.19	0.02*	-0.05*	0.09*
	Excitement	-0.41	0.44	0.07*	0.24	-0.01*	0.03*
	Jittery	0.20*	0.69	0.01*	0.04*	-0.90*	-0.03*
	Uneasy	0.25	0.38	0.28	-0.01	0.08*	-0.02*
	On Edge	0.08*	0.62	0.28	-0.05*	0.02*	0.02*
	Confused	-0.05*	0.43	0.31	0.01*	0.15	0.13
	Nervous	0.15*	0.67	-0.02*	0.03*	0.10*	0.02*
	Upset	0.60	0.11*	0.04*	-0.06*	0.20	0.04*
	Worry	0.47	0.31	0.12*	0.02*	0.07*	0.01*
Depression							
	Blue	0.80	0.09*	-0.01*	0.03*	-0.03*	0.01*
	Bored	0.34	-0.16	-0.02*	0.00*	-0.02*	0.54
	Lonely	0.50	0.00*	0.03*	0.02*	0.06*	0.29
	Sad	0.90	0.02*	-0.02*	-0.02*	0.02*	-0.07*
	Worn-out	0.54	0.04*	0.07*	0.12	0.23	-0.04
Boredom							
	Blah	0.27	0.05*	0.01*	0.08*	-0.16	0.55
	Nothing to do	0.03*	-0.10*	0.05*	0.03*	-0.10	0.71
	Unstimulated	0.16	-0.05*	0.03*	-0.08	0.02*	0.82
	Unexcited	-0.03*	0.10*	-0.00*	-0.01*	0.12	0.82
	Restless	0.02*	0.31	-0.10*	-0.02*	0.07*	0.64
	Disinterested	-0.05*	0.17	0.10*	0.10	-0.00*	0.67
Shame							
	Shame	0.29	0.00*	-0.04*	-0.01*	0.69	0.07
	Disgraced	0.24	0.03*	0.02*	-0.01*	0.76	-0.02*
	Embarrassed	-0.00*	0.18	0.10*	0.05*	0.69	0.01*
	Humiliated	0.06*	0.16	0.14	0.07*	0.63	-0.07
	Self-disgust	0.33	-0.10	0.09*	0.19	0.45	0.00*
	Bad	0.46	0.02*	0.04*	0.01*	0.40	0.05*

Body Shame							
BODSHA1	0.12	0.00*	0.04*	0.77	-0.05*	0.04*	
BODSHA2	0.07*	0.01*	0.00*	0.84	0.03*	-0.01*	
BODSHA3	-0.03*	-0.01*	0.04*	0.90	0.01*	0.01*	
BODSHA4	-0.02*	0.10	0.03*	0.82	0.00*	-0.03*	
BODSHA5	0.02*	0.01*	-0.07*	0.87	0.10	0.01*	
BODSHA6	0.01*	-0.00*	-0.04*	0.90	0.02*	0.02*	

Note. The main loadings of the items onto their a priori factor are in bold, cross loadings are in regular font. * non-significant parameter estimate.

Table 8.7

Factor Correlations for the ESEM Model of the Revised Emotional Eating Scale (EES)

Factor	Anger/ Frustration	Anxiety	Depression	Boredom	Shame
Anxiety	0.57				
Depression	0.56	0.44			
Boredom	0.43	0.28	0.46		
Shame	0.58	0.43	0.56	0.35	
Body Shame	0.53	0.42	0.46	0.36	0.49

Note. All correlations are statistically significant ($p < .01$).

Reliability

The internal consistency of each of the EES-R subscales was calculated using Cronbach's coefficient alpha. All scales had a high level of internal consistency: 0.928 for the Anger/Frustration subscale, 0.886 for the Anxiety subscale, 0.801 for the Depression subscale, 0.899 for the Boredom Subscales, 0.938 for the Shame subscale, and 0.954 for the Body Shame subscale. Average inter-item correlations were also calculated: 0.540 for the Anger/Frustration subscale, 0.468 for the Anxiety subscale,

0.442 for the Depression subscale, 0.597 for the Boredom Subscale, 0.719 for the Shame subscale, and 0.777 for the Body Shame subscale.

Validity

Zero-order correlation analyses were conducted to examine the convergent validity of the EES scale scores with the eating disorder pathology and related variables of general and eating disorder psychopathology (Table 8.8). In terms of general psychopathology there was a significant, strong, and positive relationship between negative affect, internal and external shame, guilt, and each of the EES subscales, with the exception of the Boredom subscale, which had a moderate, positive relationship with negative affect and shame. Positive affect was significantly and negatively related to the Depression, Boredom, and Shame subscales, however these associations were small. The associations between positive affect and the Anger and Body Shame subscales were not significant. The EES subscales were significantly and negatively related to self-esteem and these correlations were small to moderate. With regard to eating disorder psychopathology, there was a significant, moderate to strong, and positive relationship between the EES subscales and each of the severity of global eating disorder psychopathology, weight concerns, shape concerns, and eating concerns EDE-Q subscales. The relationships between dietary restraint and the EES subscales were positive and small to moderate. In terms of loss of control over eating there was a significant, strong, and positive relationship with each of the EES subscales, with the exception of the Boredom subscale, which had a moderate, positive relationship.

Table 8.8

Pearson Correlations for the Main Study Variables

	ANG	ANX	DEP	BOR	SHA	BOD/SHA
Pos Affect	-0.00	0.12*	-0.15**	-0.15**	-0.12*	0.09
Neg Affect	0.47**	0.50**	0.46**	0.32**	0.50**	0.41**
Ex/Shame	0.49**	0.44**	0.45**	0.37**	0.44**	0.44**
Int/Shame	0.50**	0.42**	0.47**	0.36**	0.48**	0.40**
Guilt	0.53**	0.47**	0.51**	0.40**	0.53**	0.46**
Self-Esteem	-0.31**	-0.28**	-0.28**	-0.24**	-0.32**	-0.23**
Shape	0.38**	0.33**	0.43**	0.36**	0.41**	0.45**
Weight	0.41**	0.37**	0.44**	0.33**	0.44**	0.48**
Eating	0.52**	0.47**	0.47**	0.36**	0.48**	0.54**
Restraint	0.27**	0.30**	0.27**	0.18**	0.27**	0.32**
Global	0.43**	0.41**	0.45**	0.35**	0.44**	0.50**
Loss of Control	0.56**	0.52**	0.49**	0.34**	0.50**	0.48**

Note. ANG = Anger/Frustration subscale; ANX = Anxiety subscale; DEP = Depression subscale; BOR = Boredom subscale; SHA = Shame subscale; BOD/SHA = Body Shame subscale; Pos Affect = Positive Affect; Neg Affect = Negative Affect; Ex/Shame = Externalised Shame; Int/shame = Internalised shame; Global = Severity of Eating Disorder Psychopathology. ** = statistically significant at $p < 0.01$ level.

Convergent validity was also assessed using hierarchical multiple regression analyses (HMRA). These analyses were used to determine whether shame and body shame account for additional variance in the criterion variables of interest (i.e., self esteem, internal guilt, internal and external shame, restrained eating, eating, weight, and shape concerns, dietary restraint, global severity of eating disordered pathology, and loss of control over eating), beyond the variance explained by the original EES subscales. Standardised beta weights, multiple correlation squared and change in multiple correlation squared are reported in Table 8.9.

Positive and Negative Affect. In the first analyses, positive affect as measured by the Positive Affect subscale of the PANAS comprised the criterion variable. The covariates (Anger/Frustration, Anxiety, Depression, and Boredom) accounted for a significant 16% of the variance in positive affect, $R^2 = .16$, $F(4, 339) = 15.92$, $p < .001$. Shame and Body Shame accounted for an additional 3% of the variance in positive affect, $\Delta R^2 = .03$, $\Delta F(2, 337) = 6.45$, $p < .001$. All of the subscales, with the exception of Anger/Frustration, were significant predictors of positive affect.

With regard to negative affect (measured by the Negative Affect subscale of the PANAS), the covariates accounted for a significant 27% of the variance, $R^2 = .27$, $F(4, 339) = 30.96$, $p < .001$. Shame and body shame accounted for an additional 2.8% of the variance $\Delta R^2 = .028$, $\Delta F(2, 337) = 6.75$, $p < .001$, and the final model explained 29.6% of the variance in negative affect, $R^2 = .296$, adjusted $R^2 = .283$, $F(6, 337) = 23.59$, $p < .001$. Anxiety and Shame were the only significant, independent predictors of negative affect.

Internal Guilt and Shame. With regard to internal guilt (as measured by the Guilt subscale of the Harder PFQ2), covariates explained 30% of the variance, with Shame and Body Shame accounting for an additional 2.7% of the variance in internal guilt. Anger, Shame, and Body Shame were the only significant predictors of internal guilt. Additionally, the covariates explained 26% of the variance in internal shame (as measured by the Shame subscale of the Harder PFQ2), with Shame and Body Shame accounting for an additional 1.3% of the variance. Anger was the only significant and independent predictor of internal shame.

External Shame. With regard to external shame (as measured by the Other as Shamer Scale), the covariates explained 25% of the variance, with Shame and Body Shame accounting for an additional 2.4% of the variance in external shame. Body Shame was the only significant and independent predictor of external shame.

Self-Esteem. The next analyses examined self-esteem as measured by the RSES. The covariates explained a significant 10.3% of the variance in self-esteem, however when Shame and Body shame were added to the regression equation they did not account for any additional variance in self-esteem. Shame was the only significant independent predictor of self-esteem.

Eating Disorder Psychopathology. With regard to eating disorder symptoms, the covariates accounted for a significant 9.4% of the variance in dietary restraint (as measured by the Restraint Subscale of the EDE-Q), $R^2 = .094$, $F(4, 310) = 8.054$, $p < .001$. Shame and Body Shame accounted for an additional 2.8% of the variance in restraint, $\Delta R^2 = .028$, $\Delta F(2, 308) = 4.493$, $p = .008$. Body Shame was the only significant and independent predictor of restrained eating.

The covariates explained a significant 19.4% of the variance in shape concern (as measured by the Shape Concern subscale of the EDE-Q), $R^2 = .194$, $F(4, 305) = 18.316$, $p < .001$. Shame and Body Shame accounted for an additional 5.7% of the variance in shape concern, $\Delta R^2 = .057$, $\Delta F(2, 303) = 11.506$, $p < .001$. Body Shame and Depression were the only significant predictors of shape concern.

With regard to concern about eating (as measured by the Eating Concern Subscale of the EDE-Q), the covariates accounted for a significant 27.8% of the variance in eating concern, $R^2 = .278$, $F(4, 307) = 29.569$, $p < .001$. Shame and Body Shame and accounted for an additional 6.9% of the variance in eating concern, $\Delta R^2 = .069$, $\Delta F(2, 305) = 16.105$, $p < .001$. Body Shame was the only significant and independent predictor of eating concern.

In terms of weight concern (as measured by the Weight Concern Subscale of the EDE-Q), the covariates accounted for a significant 20.3% of the variance in weight concern, $R^2 = .203$, $F(4, 305) = 19.417$, $p < .001$. Shame and Body Shame accounted for an additional 6.7% of the variance in weight concern, $\Delta R^2 = .067$, $\Delta F(2, 303) = 13.797$, $p < .001$. Body Shame was the only significant and independent predictor of weight concern.

With regard to the overall severity of eating disorder psychopathology (as measured by the Global EDE-Q score), the covariates accounted for a significant 22% of the variance, $R^2 = .220$, $F(4, 305) = 21.490$, $p < .001$, and Shame and Body Shame accounted for an additional 6.5% of the variance, $\Delta R^2 = .065$, $\Delta F(2, 303) = 13.769$, $p < .001$. As with other EDE-Q scales, Body Shame was the only significant and independent predictor of overall severity of eating disorder psychopathology.

Lastly, the covariates explained a significant 33% of the variance in loss of control over eating (as measured by the LOCES), $R^2 = .33$, $F(4, 165) = 20.32$, $p < .001$, and Shame and Body Shame accounted for an additional 2.4% of the variance, $\Delta R^2 = .024$, $\Delta F(2, 163) = 3.10$, $p < .048$. Body Shame and Anger were the only significant independent predictors of loss of control over eating.

Table 8.9

Summary of Hierarchical Regression Analyses Predicting Variables From Anger/Frustration, Anxiety, Depression, Boredom, Shame and Body Shame

	EES-R	EES-R	EES-R	EES-R		EES-R	EES-R	EES-R	EES-R	EES-R	EES-R		
	<u>Anger</u>	<u>Anxiety</u>	<u>Depressed</u>	<u>Bored</u>		<u>Anger</u>	<u>Anxiety</u>	<u>Depressed</u>	<u>Bored</u>	<u>Shame</u>	<u>Body Shame</u>		
	β	β	β	β	R ²	β	β	β	β	β	β	R ²	ΔR^2
PANAS													
Positive	0.10	0.50**	-0.52**	-0.15*	0.16	0.11	0.48**	-0.42**	-0.15*	-0.23*	0.20*	0.19**	0.03**
Negative	0.09	0.31**	0.15	0.02	0.27	-0.02	0.27**	-0.01	-0.00	0.26*	0.11	0.30**	0.03**
RSES	-0.20	-0.05	-0.02	-0.08	0.10**	-0.15	-0.04	0.10	-0.07	-0.21*	-0.01	0.12	0.01
PFQ													
Guilt	0.29*	0.06	0.17*	0.08	0.30**	0.20*	0.01	0.05	0.07	0.18*	0.16*	0.33**	0.03**
Shame 0.01*	0.32*	0.01	0.17	0.05	0.26**	0.26*	-0.02	0.74	0.04	0.13	0.11	0.28*	
OAS 0.02*	0.28*	0.10	0.08	0.10	0.25**	0.20	0.06	0.06	0.09	-0.01	0.21*	0.28*	
EDE-Q													
Restraint 0.03*	-0.00	0.22*	0.12	-0.01	0.09**	-0.08	0.18	0.05	-0.02	0.04	0.22*	0.12*	
Shape 0.06**	0.05	-0.01	0.32*	0.13	0.19**	-0.05	-0.08	0.22*	0.10	0.07	0.30**	0.25**	
Eating 0.07**	0.30*	0.13	0.10	0.03	0.28**	0.19	0.07	0.00	0.00	0.08	0.33**	0.35**	
Weight 0.07**	0.19	0.04	0.28*	0.05	0.20**	0.01	-0.03	0.15	0.02	0.12	0.32**	0.27**	

Global 0.07**	0.11	0.11	0.23*	0.07	0.22**	0.01	0.04	0.13	0.04	0.08	0.32**	0.29**	137
LOCES 0.02*	0.37**	0.20	0.70	-0.04	0.33**	0.30*	0.16	0.16	-0.05	0.06	0.19*	0.35*	

Note. EES-R = Revised Emotional Eating Scale; PANAS = Positive and Negative Affect Schedule; RSES = Rosenberg Self Esteem Scale; PFQ = Personal Feelings Questionnaire; OAS = Other as Shamer Scale; EDE-Q = Eating Disorder Questionnaire; LOCES = Loss of Control over Eating Scale. β = standardised beta weight. R^2 = amount of variance captured in each criterion measure by the EES-R factors. ΔR^2 = change in R^2 .

Binge Eating Disorder. Independent-samples t-tests were conducted to compare the EES-R subscale scores for the probable BED and non-ED groups. The data was examined and outliers were found on the Boredom, Depression, and Shame subscales. As a result, Mann-Whitney U Tests, a non-parametric version of the t-test, were performed on these scales.

There were significant differences between the probable BED and non-ED groups on each subscale of the EES-R, including the Shame and Body Shame subscales. Specifically, there was a significant difference in scores for the non-ED group ($M = 2.10, SD = 1.05$) and the probable BED group ($M = 2.84, SD = 1.24; t(310) = -4.02, p = .001$, two-tailed) on the Body Shame subscale. The magnitude of the differences in the means (mean difference = $-.74$, 95% *CI*: -1.10 to $-.38$) was small to moderate (eta squared = $.05$). Likewise, there was a significant difference in scores for the non-ED group ($M = 2.03, SD = .87$) and the probable BED group ($M = 2.76, SD = 1.02; t(310) = -4.80, p = .001$, two-tailed) on the Anger subscale. The magnitude of the differences in the means (mean difference = $-.73$, 95% *CI*: -1.03 to $-.43$) was large (eta squared = $.07$). For the Anxiety subscale, there was a significant difference in scores for the non-ED group ($M = 2.48, SD = 1.06$) and the probable BED group ($M = 3.34, SD = 1.24; t(310) = -4.80, p = .001$, two-tailed). The magnitude of the differences in the means (mean difference = $-.73$, 95% *CI*: -1.25 to $-.52$) was large (eta squared = $.07$).

Mann-Whitney U Tests were run to determine if there were differences on the Boredom, Depression, and Shame subscales between the probable BED and non-ED group. Median Boredom scores were significantly higher in the probable BED group (3.00) than in the non-ED group (2.33), $U = 3466, z = -3.53, p < .001$. Likewise, there were significant differences in depression as an urge to eat between the probable BED

and non-ED group $U=2383, z = -5.59, p <.001$, as well as significant differences in shame between the probable BED and non-ED group $U=2676, z = -5.08, p <.001$.

Next, the independent contributions of Shame and Body Shame on the frequency of binge eating behaviour was examined. Descriptive statistics regarding the frequency of binge eating (i.e., recurrent objective binge eating, occasional binge eating, and no binge eating episodes) over the previous 28 days are reported in Table 8.10. A multinomial logistic regression model was run. Anxiety was associated with an out of bounds parameter, likely due to multicollinearity. A new model was therefore re-specified without anxiety. The results are reported in Table 8.11 and indicate that none of the EES-R subscales predicted occasional objective binge eating versus no binge eating. However, the Body Shame subscale alone was a significant predictor of recurrent binge eating versus no binge eating, thus indicating its ability to predict clinical levels of binge eating.

Table 8.10.

Descriptive Statistics for Frequency of Objective Binge Eating Episodes

		Frequency (%)	Shame		Body Shame	
			<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>
OBEs	None	14.00	2.09	1.22	1.94	1.07
	Occasional Episodes	51.80	1.72	.92	1.85	.90
	Recurrent ¹	34.20	2.60	1.14	2.09	1.16

Note. OBE., Objective Binge Eating Episode. ¹Recurrent OBEs = on average at least once a week.

Table 8.11.

*Multinomial Logistic Regression Analysis Predicting Objective Binge Eating**Episodes.*

	<i>B (SE)</i>	Wald χ^2	<i>df</i>	Exp (<i>B</i>)	95% CI Exp (<i>B</i>)
<i>No OBEs vs. Occasional OBEs</i>					
Intercept	3.38 (.66)	26.29***	1		
Anger/Frustration	-.22 (.42)	.28	1	.80	.35 – 1.84
Depression	-.41 (.31)	1.72	1	.67	.36 – 1.22
Boredom	-.29 (.25)	1.40	1	.75	.46 – 1.21
Body Shame	.29 (.24)	1.46	1	1.34	.84 – 2.14
Shame	-.02 (.31)	.00	1	.96	.53 – 1.82
<i>No OBEs vs. Recurrent OBEs</i>					
Intercept	.12 (.72)	.03	1		
Anger/Frustration	.07 (.43)	.03	1	1.07	.46 – 2.48
Depression	.04 (.33)	.01	1	1.04	.54 – 1.98
Boredom	-.36 (.26)	1.90	1	.70	.42 – 1.17
Body Shame	.70 (.24)	8.48***	1	2.02	1.26 – 3.24
Shame	.10 (.32)	.10	1	1.10	.60 – 2.05

Note. Pseudo $R^2 = .20$ (Cox and Snell). Model $\chi^2(10) = 77.67, p < .001$. OBE =

Objective Binge Eating Episode. Occasional OBEs = no more than twice per month;

Recurrent OBEs = on average at least once a week.

* $p < .05$; ** $p < .01$; *** $p < .001$

Discussion

Various theoretical models converge in highlighting negative affect as the primary trigger of binge eating episodes for individuals with BED, and a growing body of empirical evidence highlights a key role of shame and body shame in this regard. Yet current measures of negative affect-induced eating do not include shame and body shame. The main objective of this study was to therefore examine the psychometric properties of a novel measure of emotional eating, the Revised Emotional Eating Scale (EES-R), which includes the constructs of shame and body shame. This was achieved by examining the factor structure of the EES-R, in addition to exploring the relationship between its subscales and theoretically related constructs.

Main Findings of the Present Study

Construct validity of the EES-R. Confirmatory factor analysis and exploratory structural equation modeling were performed to assess the factor structure of the EES-R. The CFA revealed that the original six-factor model was a questionable fit to the data, with many post-hoc modifications required to obtain adequate model fit. Additionally, the revised six-factor model resulted in severely elevated latent factor correlations, which called into question whether the subscales were measuring separate constructs. These results are not consistent with results from other factor analytic studies of the EES (Arnou, Kenardy & Agras, 1995; Koball et.al, 2012) that have supported the original subscales and the Boredom subscale in their factor solutions. It is possible that the ill fit of the CFA in the present study may have resulted from the addition of the shame and body shame items.

Further analysis of the EES-R using exploratory SEM identified six factors with acceptable model fit: Anger/Frustration, Anxiety, Depression, Boredom, Shame,

and Body Shame. Each of the six subscales of the EES-R were moderately correlated, suggesting that they tap into a core theme of emotional eating while still representing relatively separate constructs. Additionally, analyses that examined the reliability of the EES-R showed that each of the subscales had good internal consistency, including the new subscales of Shame (Cronbach's $\alpha = 0.94$) and Body Shame (Cronbach's $\alpha = 0.95$).

Convergent validity of the EES-R. This study also examined the convergent validity of the EES-R by examining the relationships between emotional triggers for eating (i.e., anger/frustration, anxiety, depression, boredom, shame, and body shame) and both general psychopathology (i.e., self-esteem, positive and negative affect, internal shame and internal guilt, and external shame) and eating disorder symptomatology (i.e., eating, weight, and shape concerns, dietary restraint, loss of control over eating, and severity of global eating disorder psychopathology). Overall, the results regarding the associations between the Shame and Body Shame subscales and related general psychopathology and eating disorder specific constructs provided support for the convergent validity of these subscales in that both the Shame and Body Shame subscales (as well as the other subscales of the EES-R) were significantly correlated with each of the related constructs (with the sole exception of the Positive Affect subscale of the PANAS), ranging from small to large effect sizes.

EES-R and negative and positive affect. Even stronger support for the Shame and Body Shame subscales emerged from the hierarchical regression analyses in which one or both of these subscales emerged as independent predictors more consistently than the other EES-R subscales, thus providing strong support for the role of shame in emotional eating. Beginning with negative affect (as measured by the Negative Affect subscale of the PANAS), the Shame subscale, along with the Anxiety

subscale, were the only significant predictors. The finding of anxiety as a trigger for eating as a significant predictor of negative affect is perhaps due to the measures used. That is, the Negative Affect subscale of the PANAS includes five out of 10 items that specifically tap anxiety (i.e., scared, nervous, jittery, afraid, and upset). These share considerable overlap with the eight words used in the EES Anxiety subscale (i.e., shaky, excited, jittery, uneasy, worried, on edge, confused, nervous, and upset). While the PANAS is one of the most commonly used measures of both positive and negative affect, in examining the Negative Affect subscale of the PANAS, it could be argued that it assesses anxiety and shame (ashamed, guilty, and distressed) more than general negative affect. Thus item-overlap may have also contributed to the finding that shame as a trigger for eating was a significant predictor of negative affect. Future research regarding affect-induced urges to eat should therefore include alternative measures of general negative affect that assess a broader range of negative affect (e.g., the Profile of Mood States [McNair, Lorr, & Droppleman, 1971]) to determine if the predictive relationship between anxiety and shame as a trigger for eating and negative affect is upheld.

Another tentative explanation of the predictive relationship of both anxiety- and shame-related eating is that, consistent with broader affect regulation models, anxiety is highly relevant to shame. Allan and Goss (2012), for example, argue that anxiety (along with anger, self-disgust, and self-contempt) is part of the emotional landscape of shame. From this perspective, it makes sense that both anxiety and shame were predictive.

For positive affect, all of the EES-R subscales (except Anger/Frustration) were significant predictors. In line with expectations, higher depression, boredom, and shame were associated with lower positive affect. An unexpected finding, however,

was that stronger urges to eat in response to body shame and anxiety were associated with higher positive affect. Other than constituting a chance finding, one highly speculative reason for this result is that the anticipation of pleasurable emotions whilst eating may account for positive affect increasing. The anticipated pleasure, and short-term relief from negative affect experienced while eating, could result in an immediate sense of positive affect, and may act as a distraction from the increased levels of anxiety and body shame. However, as Goss and Gilbert (2002) note, any improvements in positive affect in relation to binge eating are short-lived, and quickly replaced with more shame.

EES-R and self-esteem. The Shame subscale was the only significant and independent predictor of self-esteem. Given that both shame and self-esteem involve a belief that one is flawed, defective, and not good enough, the result that high levels of shame predicted lower self-esteem is to be expected. The finding that the Body Shame subscale did not predict self-esteem is somewhat surprising, although it is consistent with the Contingencies of Self-Worth model (Crocker & Wolfe, 2001), which proposes that self-esteem is only impaired by challenges in a domain (e.g., negative attitudes towards the body) to the degree to which the individual invests their self-worth in this domain. Thus body-contingent self-worth may moderate the relationship between body shame-induced eating and self-esteem, such that only those individuals who invest their self-worth in their body experience a deterioration in self-esteem when they experience body-shaming events.

EES-R and shame/guilt. Both the Shame and Body Shame subscales (as well as the Anger subscale) were significant and independent predictors of internal guilt. That shame and guilt were found to be associated may reflect the fact that while these are separate constructs, they are also highly related: shame and guilt share the core

element of self-criticism, with the focus of guilt on the behaviour and the focus of shame on the self.

In contrast to the findings on shame and guilt, the Body Shame subscale was the only significant predictor of external shame. This indicates that a stronger desire to eat as a result of experiencing shame about one's body predicts an increased perception that others view one as inferior. This suggests that eating in response to the negative view one has about their body also makes salient beliefs about one's social status in a cultural context in which thinness is highly valued and deviations from the thin ideal might trigger weight-based stigma. Kim et al. (2011) argue that a heightened perception of others' views of the self as inferior and unworthy (i.e., external shame) may be associated with more distress and psychological maladjustment than internal shame, thus underscoring the importance of the present finding that body shame may act as a trigger of external shame.

Contrary to expectations, neither the Shame nor Body Shame subscales were independent predictors of internal shame, with the Anger subscale the only significant and independent predictor of shame proneness. Anger as a sole predictor of internal shame (i.e., feeling ashamed rather than being shamed) is possibly related to perceived personal failure to live up to an internalised set of moral standards. Given that shame and body shame were moderately correlated with internal shame, it is difficult to understand why they were not predictors of internal shame in the current study. One possible explanation is that the Internalised Shame subscale of the PFQ-2 is more related to embarrassment, rather than shame *per se*, with six of the 11 items either directly measuring embarrassment or being synonymous with this emotion (i.e., embarrassment, feeling ridiculous, stupid, childish, feelings of blushing, and laughable). It is possible that the feelings of shame and body shame, as measured by

the EES-R subscales, are different to the feeling of embarrassment and shame measured by the PFQ-2 subscale.

EES-R and eating disorder symptomatology. While, with few exceptions, shame was an independent predictor of general psychopathology, this was not found to be the case in the prediction of eating disorder symptomatology. Here, eating in response to body shame (but not general shame) explained unique variance in restrained eating, eating concerns, weight concerns, and shape concerns, loss of control over eating, and the overall severity of eating disorder psychopathology above and beyond the contribution of the other EES-R subscales. The results highlight the role of body shame as a unique risk factor for eating disorder psychopathology and are consistent with prior research (see Burney & Irwin, 2000) indicating that body shame is a stronger predictor of eating disorder symptoms than general shame in clinical and non-clinical populations.

The finding of a uniquely predictive role of body shame for eating disorder symptomatology has both theoretical and clinical implications. Theoretically, this finding suggests that modifications of the shame-shame cycle of binge eating as proposed by Goss and Gilbert (2002) may be required. In this model, an individual experiences an intolerable feeling of shame, which triggers binge eating. Goss and Gilbert argue that the binge eating functions to manage the feeling of shame through being soothing, distracting, or reducing awareness of emotion. Whilst the episode of binge eating provides short-term relief, following the episode the individual experiences an increased feeling of shame. The individual then eats to reduce and/or avoid these additional feelings of shame, thus perpetuating the shame-shame cycle. The current findings that provide stronger support for the role of body shame than shame in relation to binge eating suggest that the shame-shame model be modified to

more explicitly focus on body shame in this cycle. In terms of its clinical implications, the evidence for body shame over other types of negative-affect induced eating such as general shame provides support for the contention of Dakanalis et al. (2014) that, with regard to eating disorders, it is preferable to focus on the aspects of the self that are the source of shame (such as one's own body) rather than focusing on shame more generally.

Emotional eating was also examined in individuals with probable BED and those without eating disorder symptoms. As predicted, individuals with probable binge eating had higher scores on all of the EES-R subscales compared to the non-ED group. This result suggests that the full spectrum of emotions (basic and complex) as triggers for eating is particularly problematic for individuals with probable BED than for individuals who do not eat large quantities of food, or experience loss of control over their eating. The role of binge eating as both an emotion coping and emotion avoidance strategy is well documented in the literature (Spoor, Bekker, Van Strien, & van Heck, 2007; Gianini, White, & Masheb, 2013) and these results provide additional support for the EES-R in terms of the capacity of each of its subscales to distinguish individuals with probably BED from healthy controls.

Providing further support for the Body Shame subscale particularly in this regard was the finding that this subscale was uniquely associated with clinical levels of binge eating in that, after controlling for the other EES-R subscales, it distinguished individuals who engage in recurrent objective binge eating episodes from those who do not engage in such episodes. The Body Shame subscale (nor any of the other EES-R subscales) did not distinguish between those who engaged in occasional versus no binge eating. Since occasional binge eating is relatively common among young adults (Schotte & Stunkard, 1987), body shame appears to be

specifically associated with clinically significant levels of binge eating. This indicates that a desire to overeat in response to body shame rather than other emotions is a more relevant construct for individuals with clinical levels of binge eating.

Limitations of the Present Study and Future Directions

In addition to the limitations and suggestions for future research noted above, the study had several noteworthy limitations that must be considered when interpreting the findings. Firstly, the analyses were conducted with data from a community sample and the results cannot be generalised to other populations. For instance, further investigation should be undertaken to see whether the factor structure of the EES-R could be successfully replicated in other samples, such as a clinical sample of individuals with eating disorders, especially BED. It would also be interesting to see if the results could be replicated using a more parsimonious approach (i.e., CFA) in these populations without the poor fitting model and inflated latent factor correlations.

Another limitation is that the temporal stability of the EES-R was not assessed in this study; therefore future studies should examine the test-retest reliability of the EES-R to further examine its reliability. Additional aspects of the validity of the EES-R also require examination such as its discriminant validity and its predictive validity (e.g., its sensitivity to change with treatment). Moreover, future research should examine the associations between the EES-R and other measures of emotional eating (e.g., the Dutch Eating Behaviour Questionnaire, Van Strien, Frijters, Bergers, & Defares, 1986) and examine whether the EES-R with its new shame-based subscales is a better predictor of eating disorder psychopathology than current measures of emotional eating. Additionally, although the Shame and Body Shame subscales

accounted for additional variance in the criterion variables of interest, it should be noted that this additional variance was small.

A further limitation relates to a potential methodological problem. Specifically, the construction of the Body Shame subscale was based on the Objectified Body Consciousness Scale such that these items were comprised of sentences instead of the single word synonyms that were used in the other subscales of the EES-R. While finding synonyms, or indeed single words to reflect body shame is a difficult task, future research could consider ways of addressing this or, alternatively, constructing sentences for the other EES-R subscales so as to have consistency in the item structure.

Although the results of this study indicated that body shame was an independent predictor of eating disorder symptoms, it is possible that eating-related shame (i.e., shame about eating behaviour such as binge eating) may also have a specific role in eating disorder psychopathology. Eating-related shame was not examined in this study and should be examined in future research.

Finally, the use of a self-report questionnaire rather than an interview schedule such as the Eating Disorder Examination (EDE) to identify a probable BED group and different categories based on the frequency of binge eating episodes is a limitation of this study. Research has found that the frequency of binge eating may be overestimated when using the EDE-Q relative to the EDE (Mond, Hay, Rodgers, Owen, & Beumont 2004). Hence some degree of caution is required in interpreting these findings and their replication in studies using interviewer-based diagnoses is warranted.

Summary

In summary, the results of this study provide converging psychometric support for the inclusion of the Shame and Body Shame subscales in the EES and provide further evidence for the role of shame, especially in the form of body shame, in eating disorder psychopathology. This has important clinical implications regarding the assessment and treatment of shame in individuals experiencing binge eating, which has heretofore been largely neglected due to its absence in eating disorder relevant measures.

CHAPTER 9. SUMMARY AND CONCLUSIONS

This program of research sought to investigate various novel constructs, namely, values and shame, in the context of binge eating and eating disorder psychopathology more broadly. More specifically, the first study aimed to build on and improve a DBT group program for BED by both incorporating a Values and Committed Action component drawn from Acceptance and Commitment Therapy. The second study sought to examine the utility of incorporating subscales that reflect self-conscious emotions (i.e., Shame and Body Shame) into an existing measure of emotional eating, that is, the Emotional Eating Scale, a commonly used self-report measure in binge eating research and clinical practice.

Summary of the Research Questions and Findings

The aim of the first study was to provide a preliminary evaluation of the efficacy, feasibility, and acceptability of a values-enhanced group DBT-BED program (DBT-Values-BED) over a shorter duration (14 weeks) than standard DBT-BED (20 weeks). This was achieved by adding a novel treatment component (Values and Committed Action) to a standard DBT group treatment program for BED. It was hypothesised that: (1) there would be significant reductions in binge eating, that would be at least comparable to that achieved using the longer, standard DBT programs for BED, (2) there would be a significant increase in tolerance of negative affect as well as an increased connection to personal values, acceptance, and committed action, and (3) there would be significant reductions in emotional eating following treatment.

All hypotheses for this study were supported. The results of the study showed substantial reductions in binge eating tendencies following treatment, with a large

treatment effect. There were also substantial reductions in emotional eating following treatment. Specifically, anger, anxiety, and depression as triggers for emotional eating were all substantially reduced, again with large treatment effects. Similarly, the capacity to tolerate distress significantly improved following treatment, as did acceptance of distress, ability to regulate distress, and capacity for one's attention not to become overly absorbed by distress. These effects were all large with the exception of the ability to regulate distress, which had a moderate effect.

The results also showed significant improvements in multiple domains of emotion regulation following treatment. The ability to focus and concentrate on doing and completing tasks while experiencing negative emotions substantially increased, with this change constituting a large effect size. Likewise, impulsiveness and loss of control over behavior when experiencing negative emotions substantially reduced following treatment, with a large effect size. Substantial increases in the capacity to acknowledge and focus on emotions, as well as the capacity to distinguish and name emotions were also evidenced, with large effect sizes. The belief that negative emotions can be effectively managed had substantially increased, whereas the tendency to experience negative secondary emotions in response to primary emotions had substantially decreased, both with large effect sizes. There were also substantial improvements in psychological flexibility and reductions in experiential avoidance, with large effect sizes. Finally, there was a substantial increase in connection to personal values in everyday life and the effect size was large, thus lending support to the effectiveness of the values component of the intervention.

A second aim of the first study was to elicit information regarding the participants' views about the acceptability and usefulness of the treatment as a whole, as well as the aspects of the treatment that they found useful and utilised. All of the

skills and skills modules were endorsed as highly useful and were reported to be used most of the time. Interestingly, the Values and Committed Action module was ranked at the top of the skills used, and in their qualitative comments patients highlighted the positive benefits of being able to reconnect with values among the components of the program that they found useful.

Overall, the findings of this pilot study suggest that the DBT-Values-BED group treatment program was effective in reducing the frequency and severity of binge eating symptoms as well as improving psychological functioning in a number of important domains related to binge eating. These promising results suggest that further research (particularly an RCT utilising a larger sample size) is warranted.

An important component of the DBT-Values-BED program (i.e., the at-home and in-session behavioural chain analyses) revealed a persistent theme of shame as an emotional trigger for binge eating behavior. Indeed, shame was identified by the participants as the primary emotional trigger of their binge eating episodes in more than 50% of such episodes as identified in the behavioural chain analyses. While the Emotional Eating Scale is commonly used to assess the construct of emotional eating in the literature on binge eating, in its original form the EES did not assess for shame as a trigger for emotional eating. Therefore, revising the EES to assess for shame provided the impetus for the second study.

In addition to the findings from the first study, there is a growing literature highlighting the association between shame and eating disorder symptoms, including binge eating. This literature suggests that general shame, as well as shame specific to eating disorder symptoms (e.g., body shame), may be relevant for eating disorder symptoms. The second study thus sought to examine the psychometric properties of a revised version of the Emotional Eating Scale (the EES-R) by adding two constructs

that have implications for the emotional eating that is a key trigger of binge eating, namely, Shame and Body Shame. The research questions were: (1) Is eating when feeling shame a unique construct, assessed by adding shame and body shame items to the EES and examining its factor structure; (2) Are shame and body shame correlated with related measures of general and eating disorder psychopathology; (3) Are shame and body shame better predictors of general and eating disorder psychopathology than other aspects of emotion-triggered eating; (4) Is emotional eating (including shame and body shame) more prominent for individuals with probable BED compared to individuals with minimal or no eating disorder psychopathology; and (5) Are urges to eat in response to shame and body shame better predictors of clinical levels of binge eating than other emotions?

Affirmative support was found for the first research question. More specifically, in analysing the EES-R, Confirmatory Factor Analysis did not result in an adequate model fit, and even with substantial model modification, the model was only a marginally adequate fit to the data. Furthermore, the correlations between the factors were very high which brought into question whether some of the factors (i.e., Shame and Depression) were measuring separate constructs. Therefore, to further examine the EES-R factor structure, Exploratory Structural Equation Modeling was conducted and resulted in a six-factor solution for the 43-item scale, including (1) Anger/Frustration, (2) Anxiety, (3) Depression, (4) Boredom, (5) Shame, and (6) Body Shame. In addition, the reliability of the EES-R subscales was assessed via an examination of the Cronbach's alpha coefficients, and the subscales were found to have high internal consistency. This suggests that the subscales reliably measure the aspects of emotional eating that they purport to measure.

In assessing the second research question, it was found that the EES-R subscales were related to theoretically relevant constructs in terms of both general and eating disorder specific psychopathology. That is, higher levels of emotional eating as indexed by each of the EES-R subscales (i.e., anger, anxiety, depression, boredom, shame, and body shame) were significantly correlated with higher levels of negative affect (all of a medium effect size external and internal shame (all of a medium effect size), internal guilt (of a medium to large effect size), eating, shape, and weight concerns (mostly of a medium effect size), dietary restraint (of a small to medium effect size), global eating disorder symptomatology (all of a medium effect size), loss of control over eating (of a medium to large effect size), and lower levels of self-esteem (all of a small to medium effect size). The sole exception to these supportive results was in terms of positive affect, for which there was weak to no support for a significant relationship with the EES-R subscales.

The third research question sought to determine if shame and body shame would emerge as independent predictors of general and eating disorder specific psychopathology after controlling for the other EES-R subscales, with several findings supportive of this. In terms of general psychopathology, shame emerged as an independent predictor of negative affect (together with anxiety), self-esteem, and guilt (along with body shame and anger), while body shame was found to be an independent predictor of guilt and external shame. These findings provide support for the association between shame and/or body shame over and above most other subscales of the EES-R, thus underscoring the importance of their inclusion in measures of emotion-induced eating.

In terms of eating disorder pathology, it was found that body shame independently predicted restrained eating, as well as concerns about weight, and

eating behavior, and overall eating disorder psychopathology. Body shame (as well as depression) also predicted concerns about body shape. Furthermore, Body shame (along with urges to eat in response to depression and anger) predicted loss of control over eating. The results therefore provided strong support for the role of body shame over other triggers of emotional eating (including general shame) in a wide range of eating disorder symptoms.

The fourth research question sought to examine the validity of the Shame and Body Shame subscales specifically in the context of BED. Here it was found that individuals with probable BED reported significantly higher levels of emotion-induced urges to eat on each of the subscales of the EES-R (including the Shame and Body Shame subscales) relative to those with no eating disorder symptoms. The role of body shame in binge eating was particularly supported in terms of its unique capacity (compared to the other EES-R subscales) to differentiate individuals who engaged in recurrent episodes of binge eating from those who did not engage in binge eating. This finding provides an affirmative response to the fifth research question.

Overall, the findings of the second study indicate that the EES-R has adequate factor structure and good reliability and validity. Shame and body shame appear to be unique constructs in the assessment of emotional eating and their inclusion as subscales of the EES is further supported by their consistent and often independent associations with related constructs in the form of general and eating disorder specific psychopathology.

Theoretical and Clinical Implications

Theoretically, the positive results of the DBT-Values-BED group treatment are consistent with the range of affect-based models of binge eating described in Chapter 3, given that a treatment approach with a central focus on emotion regulation

led to substantial reductions in core and associated features of BED. For instance, the Affect Regulation Model of binge eating postulates that emotion dysregulation is central to the development and maintenance of BED, with binge eating functioning to help the person distract from and avoid contact with aversive emotion. The findings from the second study are also consistent with affect-based models of binge eating, but help to expand these models to include a focus on shame and, especially, body shame. In addition, the study's results are in accordance with Objectification Theory, which highlights body shame as a consequence of perceived failure to meet the "thin ideal".

The findings from the current research program also have clinical implications. Specifically, the findings from the first study extend the work of Safer et al., (2010) in suggesting that DBT can be delivered as a group treatment for BED over a shorter duration (in that it was able to achieve comparable outcomes to longer DBT for BED interventions), at least in the format employed here (i.e., the addition of values and committed action). The inclusion of a values-based component was largely based on the rationale that making salient the personally meaningful reasons to modify binge eating behaviour can increase motivation for making this difficult change and tolerating the associated negative affect.

The preliminary support obtained for the effectiveness of the DBT-Values-BED program when delivered over 14 weeks may have implications for the greater reach of DBT-BED programs. At 20 weeks, current DBT-BED programs are double the length of sessions that are subsidised by the Australian Government (via the Better Access to Mental Health Care Initiative), thereby reducing their accessibility. The mental health literature is increasingly advocating that treatment outcome research extend its focus beyond an evaluation of treatment effectiveness to include aspects

such as treatment acceptability and scalability. Regarding the latter, Kazdin and Blase (2011) write that, “Most people with mental illness are not being served. Continued proliferation of treatments delivered in a way that cannot reach most people in need ought to be re-considered” (p. 34). Reducing the length of treatment so that it is more cost-effective is one strategy for increasing the reach of treatment for individuals with BED. The findings of the current program of research are promising in this regard.

The revised version of the EES, with its additional Shame and Body Shame subscales, also has several clinical implications: (1) The EES-R could serve as a useful screening tool for the presence of shame and body shame in individuals with eating disorders, such as those with BED, who struggle with emotional eating as a trigger for their binge eating; (2) the EES-R could help guide treatment to focus on shame and/or body shame if these are identified as triggers for emotional eating in individuals with eating disorders, including those with BED; and (3) the EES-R has the potential to be used as a treatment outcome measure to assess whether shame and body shame as triggers for emotional eating have been successfully ameliorated, and to assess shame and body shame as potential moderators and/or mediators of treatment outcome. Beyond eating disorders such as BED which have binge eating at their core, these clinical implications could extend to work with obese populations in which shame related to weight stigma has been implicated in obesity maintenance (Tomiyama, 2014).

Values and shame, the focus of the present research program, in combination could have clinical implications. The current findings suggest that there may be a role for training in valued living in BED treatment. Identifying and aligning with personal values that are broader and more meaningful sources of self-evaluation than weight and shape has two possible implications: (1) it may help to reduce the preoccupation

with weight and shape inherent in body shame, and (2) it may assist in tolerating strong emotions such as shame and body shame that trigger the urge to binge eat. In addition to enhancing post-treatment outcomes, targeting body shame using a values component could also assist individuals with eating disorders such as BED to maintain their treatment gains given that shape and weight concerns are among the strongest predictors of relapse following eating disorder treatment (Keel, Dorer, Franko, Jackson, & Herzog, 2005). In short, an emphasis on values could ameliorate the adverse effects of shame and body shame and thus potentially improve end of treatment and longer-terms outcomes for individuals with BED.

Given the evidence from the current research program that body shame is particularly relevant for eating disorder symptoms, utilising the EES-R in treatment contexts in the aforementioned ways may enhance treatment outcomes and the understanding of eating disorders. Yet there are several noteworthy considerations when administering the EES-R, with its shame subscales, in clinical settings. The first relates to the fact that people are less likely to reveal that they are experiencing shame compared to other emotions (Kelly et al., 2014). The second consideration is the suggestion in the research that identifying and addressing shame early in eating disorder treatment results in faster improvements in eating disorder symptoms (Kelly et al., 2014). Both of these considerations emphasise the potential benefits of employing the EES-R in eating disorder clinical settings in order to encourage the early identification of a construct that people may not readily divulge they are experiencing unless specifically asked.

Limitations and Directions for Future Research

In addition to the limitations noted for each specific study, the current research program as a whole has a number of noteworthy limitations that are important to

consider when interpreting the results. First, both studies are limited in their implications based on the samples utilised. The sample size for the first study was small as befits a pilot study for a novel treatment approach. Clearly, however, this study needs to be replicated with a larger sample. The fact that significant results were obtained across all of the outcome measures despite the small sample size suggests that this is indeed a promising approach worthy of further investigation. The sample size for second study was relatively large but, as a community sample, was limited in its application to clinical populations. Hence, this study too warrants replication among people with eating disorders such as BED to further specify the psychometric properties of the EES-R in these groups.

A second limitation of the research program pertains to the selected measures. In the first study, the BES (Binge Eating Scale) was the sole measure of binge eating tendencies and in the second study, BED symptoms were assessed using the EDE-Q and LOCES. As a self-report questionnaire, the EDE-Q is limited relative to investigator based interviews such as the EDE, although they are challenging to administer in large scale studies. Furthermore, the LOCES was selected as it is the sole measure assessing loss of control over eating in a comprehensive manner, yet was still under development at the time of its use in the present research. It has since been validated (Latner, et al., 2014), such that future research should employ the current version of the LOCES to further assess the psychometric properties of the EES-R.

Moreover, future research is needed to enhance our understanding of the role of shame and body shame as an antecedent for emotional eating (e.g., using prospective and experimental designs). Importantly, enhanced knowledge of shame

and body shame, as well as values, should inform the development of novel evidence based interventions for BED and other eating disorders.

Conclusion

Largely informed by affect-based models of BED and other forms of eating disorder pathology, the results of the studies undertaken in this program of research collectively provide support for the potential role that values identification and values consistent behaviour may have in the treatment of BED, and the role of shame and body shame in emotional eating. The identification of values-informed work in the treatment of individuals with BED and the development of a psychometrically-sound instrument for assessing a broader conceptualisation of forms of emotional eating (such as binge eating) in the form of the EES-R are the primary contributions of this program of research. A more accurate assessment of the emotional triggers implicated in binge eating, and additional strategies for more effectively overcoming binge eating (such as a focus on values), have the potential to improve the outcomes of the sizable proportion of individuals experiencing binge eating problems who are not responsive to current treatment approaches.

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Appendix A

Study 1: A Preliminary Investigation of a Modified DBT Group Program for Individuals With Binge Eating Disorder Symptomatology

Advertisement

Participant Information Sheet

Participant Consent Form

Telephone Screen

Eating Disorders Examination

Binge Eating Scale

Emotional Eating Scale

Difficulties in Emotion Regulation Scale

Distress Tolerance Scale

Acceptance and Action Questionnaire

Valued Living Questionnaire

DBT Diary Card

Program Evaluation Questionnaire

DBT Values Module Treatment Materials



Research Study

Group Treatment Program for BINGE EATING



*Do you ever feel out of control when eating?
Do you feel guilty or sad about your eating habits?
Do you eat large amounts of food in a short period of time?
Do you have trouble coping with strong feelings in general or feelings about
your eating in particular?*

The good news is there is something you can do about this!

You are invited to participate in a group treatment program for people 18+ years. The program is based on **Dialectical Behavioural Therapy (DBT)** and you will learn behavioural skills to manage your eating and strong emotions associated with eating.

The group treatment program is part of a doctoral research study, investigating group DBT in the treatment of binge eating

Duration: 14 weeks
Cost: Free

**For further information please email:
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Participant Information Sheet

Research Project

Group Dialectical Behaviour Therapy in the Treatment of Binge Eating

You are invited to take part in this research study. Before you decide, it is important for you to understand why the research is being done and what it will involve. Please take time to read the following information carefully, and discuss it with friends, family and your GP if you wish. Ask if there is anything that is not clear or if you would like more information. Take time to decide whether or not you wish to take part.

I would like you to consider participating in a research study that will be conducted by Lisa Knipe (Doctor of Clinical Psychology Candidate, Department of Psychology, Australian National University) and supervised by Dr Elizabeth Rieger (Department of Psychology, Australian National University).

This study aims to help people with binge eating problems learn skills to manage difficult emotions and urges that are associated with binge eating.

The focus of the research is to determine whether an enhanced DBT program has better clinical outcomes for individuals who binge eat, than the standard DBT program. Those individuals who meet eligibility criteria will be allocated to 15 sessions over 14 weeks of either:

- 1) Group Dialectical Behaviour Therapy for Binge Eating [standard]
- 2) Group Dialectical Behaviour Therapy for Binge Eating, with the addition of 'Values and Committed Action' skills training [enhanced]

Each session will last for 2 hours and 15 minutes and will be conducted in a group with 3-8 participants.

Dialectical Behaviour Therapy (DBT) is a form of cognitive-behaviour therapy (CBT) that aims to help people who have difficulty managing emotions that are associated with binge eating. DBT is designed to help emotion regulation difficulties such as the following:

- Painful emotions that are experienced as intolerable
- Quickly shifting between different emotions and moods
- Feeling controlled by your emotions
- Strong urges to eat to manage difficult emotions

Values and Committed Action aims to help people explore what is most important to them, and involves setting goals according to values and carrying them out consistently and responsibly.

Prior to the commencement of treatment, you will be required to attend an interview with the Researcher in which you will complete a series of questionnaires. This assessment will be undertaken again at the end of treatment and 12 weeks after treatment has ended.

Who can participate in this study?

People who are over 18 years of age, meet the criteria for binge eating, and are available to attend all sessions and assessments are eligible to participate in this study. To participate, individuals must not be suffering from severe psychiatric conditions (psychosis, depression, drug/alcohol dependence) or taking part in another current treatment for binge eating. Additionally, participants must have sufficient English skills to understand the questionnaires and the content of the group treatment sessions.

B. Do I have to take part?

You do not have to take part. Participation in this study is voluntary and you are free to withdraw at any time without giving any reason. If you decide not to take part or decide to withdraw at any time this will not affect your medical care, legal rights or relationship with the researcher(s) or treatment providers now or in the future.

What will the study involve?

Should you meet eligibility criteria, you will be invited to attend an assessment session with the Researcher. This session should take no more than 2 hours. During this session, you will receive an explanation of the study procedures and will be asked to give written informed consent. You will then be required to fill out several questionnaires.

If, after providing informed consent and participating in the assessment session you do not meet eligibility criteria, you will be provided with a list of services to contact for treatment if you desire. If, after providing informed consent and participating in the assessment session you do meet eligibility criteria, you will be allocated to either 15 sessions of DBT for Binge Eating, DBT for Binge Eating with the addition of Values and Committed Action or placed on a wait-list for treatment. During the course of treatment you will be required to complete a brief daily self-monitoring form.

How will the confidentiality of my personal details be ensured?

All data will be re-identifiable meaning that a research code (rather than your name) will alone appear on all of your assessment information but that this information can

be used to identify you by the research investigators by matching your research code to your name. All assessment information will be stored in a secure filing cabinet in the office of the Researcher. Any confidential data that would identify you (such as the list of names associated with each research code and copies of consent forms) will be stored separately from the assessment information and stored in a secure filing cabinet in the office of the researcher. Only the research investigators will have access to the data and electronic files will be password protected. Questionnaires and self-monitoring forms will be kept for at least 15 years after which they will be shredded and electronic information deleted. A report of this study will be submitted for publication but individual participants will not be identifiable in such a report. If, after providing informed consent and participating in part of the treatment you decide to withdraw from the study, the data collected will still be securely stored for at least 15 years and then destroyed. If requested you will be provided with a list of eating disorders services to contact for treatment.

Are there any benefits to my participation in this study?

You will receive an evidence-based psychological treatment, which will be administered to the highest possible standards by a registered psychologist, following published procedures in manuals. All sessions will be free of charge. It is expected that all treatments may confer significant benefits. However, should one treatment prove to be significantly superior to the other in improving emotion regulation and improving quality of life, then it would have implications for individuals with binge eating.

Are there any side effects and risks associated with this study?

The risks of psychological and/or physiological harm associated with this study are minimal. You will be treated by a Psychology Board of Australia (PBA) Registered Psychologist, who has undertaken specific training in these treatments. Should you become either psychiatrically or medically unwell during the study, you will be referred to the appropriate medical specialist or mental health professional.

What if I have any questions or concerns about the study?

If you have any questions or concerns about the study, please do not hesitate to discuss these with Lisa Knipe (6125 5585) or the research supervisor Dr Elizabeth Rieger (6125 4208), in the Department of Psychology at the Australian National University.

If you have any concerns about the way the study is conducted please contact the Secretary, Human Research Ethics Committee, Research Office, Level 3 Innovations Building (124), Australian National University ACT 0200; Tel: +61 2 6125 4807 or Email: human.ethics.officer@anu.edu.au

This copy of the Information Sheet is yours to keep. If you agree to take part, then you will be asked to sign a Consent Form and you will be given a copy of that form.



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Participant Consent Form

Research Study

Group Dialectical Behaviour Therapy in the Treatment of Binge Eating Disorder

I, _____, give consent to my participation in the above research study.

Name (please print)

In giving my consent I acknowledge that:

1. I have read the Participant Information Sheet and have been given the opportunity to discuss the information and my involvement in the study with the researcher.
2. The procedures required for the study and the time involved have been explained to me, and any questions I have about the study have been answered to my satisfaction.
3. I understand that my participation in this study is voluntary and that I am free to withdraw at any time, without giving any reason and without my legal rights or relationship with the researcher or treatment providers being affected now or in the future.
4. I understand that the study involves two different treatments and that I will be allocated to one of these treatments and cannot choose the treatment I will receive.
5. I understand that the study involves group work and as such I will be participating in the treatment in the presence of other people. I understand that participants will be sharing personal information and I agree to keep that information confidential.
6. I understand that my involvement in this study is confidential and that my assessment information will be labelled with a research code (rather than my

name), will be securely stored in the Department of Psychology at the Australian National University and will be stored in a separate location from any personal details. I understand that my assessment information will be kept for at least 15 years before being destroyed. If, after providing informed consent and participating in part of the treatment I decide to withdraw from the study, I understand that the data collected on me will still be securely stored for at least 15 years and then destroyed. A report of this study will be submitted for publication but individual participants will not be identifiable in such a report.

7. I understand that I will be referred to appropriate health care services if I become psychiatrically or medically unwell during the study.

_____ Name of Participant	_____ Date	_____ Signature
_____ Name of Witness	_____ Date	_____ Signature

Eating Disorder Examination

For a full description of this measure see http://www.rpsych.ac.uk/pdf/EDE_16.0.pdf

Binge Eating Scale

Instructions: Below are groups of numbered statements. Read all of the statements in each group and mark on this sheet the one that best describes the way you feel about the problems you have controlling your eating behaviour.

1.	I don't feel self-conscious about my weight or body size when I'm with others.
2.	I feel concerned about how I look to others, but it normally does not make me feel disappointed with myself.
3.	I do get self-conscious about my appearance and weight which makes me feel disappointed in myself.
4.	I feel very self-conscious about my weight and frequently, I feel intense shame and disgust for myself. I try to avoid social contacts because of my self-consciousness

1.	I don't have any difficulty eating slowly in the proper manner.
2.	Although I seem to "gobble down" foods, I don't end up feeling stuffed because of eating too much.
3.	At times, I tend to eat quickly and then, I feel uncomfortably full afterwards.
4.	I have the habit of bolting down my food, without really chewing it. When this happens I usually feel uncomfortably stuffed because I've eaten too much.

1.	I feel capable to control my eating urges when I want to.
2.	I feel like I have failed to control my eating more than the average person.
3.	I feel utterly helpless when it comes to feeling in control of my eating urges.
4.	Because I feel so helpless about controlling my eating I have become very desperate about trying to get in control

1.	I don't have the habit of eating when I'm bored.
2.	I sometimes eat when I'm bored, but often I'm able to "get busy" and get my mind off food.
3.	I have a regular habit of eating when I'm bored, but occasionally, I can use some other activity to get my mind off eating.
4.	I have a strong habit of eating when I'm bored. Nothing seems to help me break the habit.

1.	I'm usually physically hungry when I eat something.
2.	Occasionally, I eat something on impulse even though I really am not hungry.
3.	I have the regular habit of eating foods, that I might not really enjoy, to satisfy a hungry feeling even though physically, I don't need the food.
4.	Even though I'm not physically hungry, I get a hungry feeling in my mouth that only seems to be satisfied when I eat a food, like a sandwich, that fills my mouth. Sometimes, when I eat the food to satisfy my mouth hunger, I then spit the food out so I won't gain weight.

1.	I don't feel any guilt or self-hate after I overeat.
2.	After I overeat, occasionally I feel guilt or self-hate.
3.	Almost all the time I experience strong guilt or self-hate after I overeat.

1.	I don't lose total control of my eating when dieting even after periods when I overeat.
2.	Sometimes when I eat a "forbidden food" on a diet, I feel like I "blew it" and eat even more.
3.	Frequently, I have the habit of saying to myself, "I've blown it now, why not go all the way" when I overeat on a diet. When that happens I eat even more.
4.	I have a regular habit of starting strict diets for myself, but I break the diets by going on an eating binge. My life seems to be either a "feast" or "famine."

1.	I rarely eat so much food that I feel uncomfortably stuffed afterwards.
2.	Usually about once a month, I eat such a quantity of food, I end up feeling very stuffed.
3.	I have regular periods during the month when I eat large amounts of food, either at mealtime or at snacks.
4.	I eat so much food that I regularly feel quite uncomfortable after eating and sometimes a bit nauseous.

1.	My level of calorie intake does not go up very high or go down very low on a regular basis.
2.	Sometimes after I overeat, I will try to reduce my caloric intake to almost nothing to compensate for the excess calories I've eaten.
3.	I have a regular habit of overeating during the night. It seems that my routine is not to be hungry in the morning but overeat in the evening.
4.	In my adult years, I have had week-long periods where I practically starve myself. This follows periods when I overeat. It seems I live a life of either "feast or famine."

1.	I usually am able to stop eating when I want to. I know when "enough is enough."
2.	Every so often, I experience a compulsion to eat which I can't seem to control.
3.	Frequently, I experience strong urges to eat which I seem unable to control, but at other times I can control my eating urges.
4.	I feel incapable of controlling urges to eat. I have a fear of not being able to stop eating voluntarily.

1.	I don't have any problem stopping eating when I feel full.
2.	I usually can stop eating when I feel full but occasionally overeat leaving me feeling uncomfortably stuffed.
3.	I have a problem stopping eating once I start and usually I feel uncomfortably stuffed after I eat a meal.
4.	Because I have a problem not being able to stop eating when I want, I sometimes have to induce vomiting to relieve my stuffed feeling.

1.	I seem to eat just as much when I'm with others (family, social gatherings) as when I'm by myself.
2.	Sometimes, when I'm with other persons, I don't eat as much as I want to eat because I'm self-conscious about my eating.
3.	Frequently, I eat only a small amount of food when others are present, because I'm very embarrassed about my eating.
4.	I feel so ashamed about overeating that I pick times to overeat when I know no one will see me. I feel like a "closet eater."

1.	I eat three meals a day with only an occasional between meal snack.
2.	I eat 3 meals a day, but I also normally snack between meals.
3.	When I am snacking heavily, I get in the habit of skipping regular meals.
4.	There are regular periods when I seem to be continually eating, with no planned meals.

1.	I don't think much about trying to control unwanted eating urges.
2.	At least some of the time, I feel my thoughts are pre-occupied with trying to control my eating urges.
3.	I feel that frequently I spend much time thinking about how much I ate or about trying not to eat anymore.
4.	It seems to me that most of my waking hours are pre-occupied by thoughts about eating or not eating. I feel like I'm constantly struggling not to eat.

1.	I don't think about food a great deal.
2.	I have strong cravings for food but they last only for brief periods of time.
3.	I have days when I can't seem to think about anything else but food.
4.	Most of my days seem to be pre-occupied with thoughts about food. I feel like I live to eat.

1.	I usually know whether or not I'm physically hungry. I take the right portion of food to satisfy me.
2.	Occasionally, I feel uncertain about knowing whether or not I'm physically hungry. At these times it's hard to know how much food I should take to satisfy me.
3.	Even though I might know how many calories I should eat, I don't have any idea what is a "normal" amount of food for me.

Emotional Eating Scale

We all respond to different emotions in different ways. Some types of feelings lead people to experience an urge to eat. Please indicate the extent to which the following feelings lead you to feel an urge to eat by checking the appropriate box

	No Desire to Eat	A Small Desire to Eat	A Moderate Desire to Eat	A strong Desire to Eat	An Overwhelming Urge to Eat
Resentful					
Discouraged					
Shaky					
Worn Out					
Inadequate					
Excited					
Rebellious					
Blue					
Jittery					
Sad					
Uneasy					
Irritated					
Jealous					
Worried					
Frustrated					
Lonely					
Furious					
On Edge					
Confused					
Nervous					
Angry					
Guilty					
Bored					
Helpless					
Upset					

Difficulties in Emotion Regulation Scale (DERS)

Please indicate how often the following statements apply to you by writing the appropriate number from the scale below on the line beside each item:

1	2	3	4	5
almost never	sometimes	about half the time	most of the time	almost always

- _____ 1) I am clear about my feelings.
- _____ 2) I pay attention to how I feel.
- _____ 3) I experience my emotions as overwhelming and out of control.
- _____ 4) I have no idea how I am feeling.
- _____ 5) I have difficulty making sense out of my feelings.
- _____ 6) I am attentive to my feelings.
- _____ 7) I know exactly how I am feeling.
- _____ 8) I care about what I am feeling.
- _____ 9) I am confused about how I feel.
- _____ 10) When I'm upset I acknowledge my emotion.
- _____ 11) When I'm upset I become angry with myself for feeling that way.
- _____ 12) When I'm upset I become embarrassed for feeling that way.
- _____ 13) When I'm upset I have difficulty getting work done.
- _____ 14) When I'm upset I become out of control.
- _____ 15) When I'm upset I believe that I will remain that way for a long time.
- _____ 16) When I'm upset I believe that I'll end up feeling very depressed.
- _____ 17) When I'm upset I believe that my feelings are valid and important.
- _____ 18) When I'm upset I have difficulty focusing on other things.
- _____ 19) When I'm upset I feel out of control.
- _____ 20) When I'm upset I can still get things done.
- _____ 21) When I'm upset I feel ashamed with myself for feeling that way.
- _____ 22) When I'm upset I know that I can find a way to eventually feel better.

- _____ 23) When I'm upset I feel like I am weak.
- _____ 24) When I'm upset I feel like I can remain in control of my behaviours.
- _____ 25) When I'm upset I feel guilty for feeling that way.
- _____ 26) When I'm upset I have difficulty concentrating.
- _____ 27) When I'm upset I have difficulty controlling my behaviours.
- _____ 28) When I'm upset I believe that there is nothing I can do to make myself feel better.
- _____ 29) When I'm upset I become irritated with myself for feeling that way.
- _____ 30) When I'm upset I start to feel very bad about myself.
- _____ 31) When I'm upset I believe that wallowing in it is all I can do.
- _____ 32) When I'm upset I lose control over my behaviours.
- _____ 33) When I'm upset I have difficulty thinking about anything else.
- _____ 34) When I'm upset I take time to figure out what I'm really feeling.
- _____ 35) When I'm upset it takes me a long time to feel better.
- _____ 36) When I'm upset my emotions feel overwhelming.

DISTRESS TOLERANCE SCALE

Directions: Think of times that you feel distressed or upset. Select the item from the menu that best describes your beliefs about feeling distressed or upset.

1. Strongly agree
2. Mildly agree
3. Agree and disagree equally
4. Mildly disagree
5. Strongly disagree

1. Feeling distressed or upset is unbearable to me.	Strongly agree	Mildly agree	Agree & disagree equally	Mildly disagree	Strongly disagree
2. When I feel distressed or upset, all I can think about is how bad I feel.	Strongly agree	Mildly agree	Agree & disagree equally	Mildly disagree	Strongly disagree
3. I can't handle feeling distressed or upset.	Strongly agree	Mildly agree	Agree & disagree equally	Mildly disagree	Strongly disagree
4. My feelings of distress are so intense that they completely take over.	Strongly agree	Mildly agree	Agree & disagree equally	Mildly disagree	Strongly disagree
5. There's nothing worse than feeling distressed or upset.	Strongly agree	Mildly agree	Agree & disagree equally	Mildly disagree	Strongly disagree
6. I can tolerate being distressed or upset as well as most people.	Strongly agree	Mildly agree	Agree & disagree equally	Mildly disagree	Strongly disagree
7. My feelings of distress or being upset are not acceptable.	Strongly agree	Mildly agree	Agree & disagree equally	Mildly disagree	Strongly disagree
8. I'll do anything to avoid feeling distressed or upset	Strongly agree	Mildly agree	Agree & disagree equally	Mildly disagree	Strongly disagree
9. Other people seem to be able to tolerate feeling distressed or upset better than I can.	Strongly agree	Mildly agree	Agree & disagree equally	Mildly disagree	Strongly disagree
10. Being distressed or upset is always a major ordeal for me.	Strongly agree	Mildly agree	Agree & disagree equally	Mildly disagree	Strongly disagree
11. I am ashamed of myself when I feel distressed or upset.	Strongly agree	Mildly agree	Agree & disagree equally	Mildly disagree	Strongly disagree
12. My feelings of distress or being upset scare me.	Strongly agree	Mildly agree	Agree & disagree equally	Mildly disagree	Strongly disagree

13. I'll do anything to stop feeling distressed or upset.	Strongly agree	Mildly agree	Agree & disagree equally	Mildly disagree	Strongly disagree
14. When I feel distressed or upset, I must do something about it immediately.	Strongly agree	Mildly agree	Agree & disagree equally	Mildly disagree	Strongly disagree
15. When I feel distressed or upset, I cannot help but concentrate on how bad the distress actually feels.	Strongly agree	Mildly agree	Agree & disagree equally	Mildly disagree	Strongly disagree

Scoring: Item 6 is reverse scored. Subscale scores are the mean of the items. The higher-order DTS is formed from the mean of the four subscales.

ACCEPTANCE AND ACTION QUESTIONNAIRE-2

Below you will find a list of statements. Please rate how true each statement is for you by circling a number next to it. Use the scale below to make your choice.

1	2	3	4	5	6	7
never true	very seldom true	seldom true	sometimes true	frequently true	almost always true	always true

1. Its OK if I remember something unpleasant.	1	2	3	4	5	6	7
2. My painful experiences and memories make it difficult for me to live a life that I would value.	1	2	3	4	5	6	7
3. I'm afraid of my feelings.	1	2	3	4	5	6	7
4. I worry about not being able to control my worries and feelings.	1	2	3	4	5	6	7
5. My painful memories prevent me from having a fulfilling life.	1	2	3	4	5	6	7
6. I am in control of my life.	1	2	3	4	5	6	7
7. Emotions cause problems in my life.	1	2	3	4	5	6	7
8. It seems like most people are handling their lives better than I am.	1	2	3	4	5	6	7
9. Worries get in the way of my success.	1	2	3	4	5	6	7
10. My thoughts and feelings do not get in the way of how I want to live my life.	1	2	3	4	5	6	7

Valued Living Questionnaire

Part 1

Below are areas of life that are valued by some people. This questionnaire will help clarify your own quality-of-life in each of these areas. One aspect of quality-of-life involves the importance you put on different areas of living. Rate the importance of each area (by circling a number) on a scale of 1-10. A “1” means that area is *not at all important*. A “10” means that area is *very important*. Not everyone will value all of these areas, or value all areas the same. Rate each area according to **your own personal sense of importance**.

<u>Area:</u>	not at all important					extremely important				
1) Family (other than marriage or parenting)	1	2	3	4	5	6	7	8	9	10
2) Marriage/couples/ intimate relationships	1	2	3	4	5	6	7	8	9	10
3) Parenting	1	2	3	4	5	6	7	8	9	10
4) Friends/social life	1	2	3	4	5	6	7	8	9	10
5) Work	1	2	3	4	5	6	7	8	9	10
6) Education/training	1	2	3	4	5	6	7	8	9	10
7) Recreation/fun	1	2	3	4	5	6	7	8	9	10
8) Spirituality/meaning & purpose in life	1	2	3	4	5	6	7	8	9	10
9) Citizenship/ Community Life	1	2	3	4	5	6	7	8	9	10
10) Physical self-care (nutrition, exercise/ movement, rest/sleep)	1	2	3	4	5	6	7	8	9	10

Valued Living Questionnaire Part 2

In this section, please give a rating of how **consistent** your actions have been with each of your values. Please note that this is **not** asking about your ideal in each area, **nor** what others think of you. Everyone does better in some areas than in others. People also do better at some times than at others. **Please just indicate how you think you have been doing during the past week.** Rate each area (by circling a number) on a scale of 1-10. A “1” means that your actions have been *completely inconsistent with your value*. A “10” means that your actions have been *completely consistent with your value*.

During the past week...

<u>Area:</u>	<u>not at all</u> consistent					<u>completely</u> consistent				
1) Family (other than marriage or parenting)	1	2	3	4	5	6	7	8	9	10
2) Marriage/couples/ intimate relationships	1	2	3	4	5	6	7	8	9	10
3) Parenting	1	2	3	4	5	6	7	8	9	10
4) Friends/social life	1	2	3	4	5	6	7	8	9	10
5) Work	1	2	3	4	5	6	7	8	9	10
6) Education/training	1	2	3	4	5	6	7	8	9	10
7) Recreation/fun	1	2	3	4	5	6	7	8	9	10
8) Spirituality/meaning & purpose in life	1	2	3	4	5	6	7	8	9	10
9) Citizenship/ Community Life	1	2	3	4	5	6	7	8	9	10
10) Physical self-care (nutrition, exercise/ movement, rest/sleep)	1	2	3	4	5	6	7	8	9	10

How did this treatment program go for you?

In what way has your life changed as a result of participating in this program?

In what ways did the treatment help?

In what ways did the treatment fail to help you?

What has been important for you about the group?

Would you have preferred to receive treatment on a one-to-one basis?

In your opinion, were there too little, too many, or just the right number of skills taught?

Did you find the in-session practice exercises to be helpful to you? If yes, which exercises were most helpful?

Which skills helped you the most?

Do you have any ideas that would help improve the treatment program?

Any other comments?

CHAIN ANALYSIS

Name: _____ Date filled out: _____ Date of problem behaviour: _____

WHAT EXACTLY IS THE MAJOR **PROBLEM BEHAVIOUR** THAT I AM ANALYSING?

WHAT **PROMPTING EVENT** IN THE ENVIRONMENT STARTED ME ON THE CHAIN TO MY PROBLEM BEHAVIOUR? Start Day:

WHAT THINGS IN MYSELF AND MY ENVIRONMENT MADE ME **VULNERABLE**? Start Day:

WHAT EXACTLY WERE THE **CONSEQUENCES** IN THE ENVIRONMENT?

- 1.
- 2.

AND IN MYSELF?

- 1.
- 2.

WAYS TO REDUCE MY **VULNERABILITY** IN THE FUTURE

WAYS TO PREVENT **PRECIPITATING EVENT** FROM HAPPENING AGAIN

WHAT **HARM** DID MY PROBLEM BEHAVIOUR CAUSE?

PLANS TO **REPAIR, CORRECT, AND OVERCORRECT** THE HARM

MY DEEPEST THOUGHTS AND FEELINGS ABOUT THIS (THAT I WANT TO SHARE)

INSTRUCTIONS FOR FILLING OUT A DIARY CARD

Completing your diary card on a daily basis is an essential component of your treatment. “Mindful” completion of the diary card (i.e., paying attention without judging) increases awareness of what is going on for you. Therefore, completing the diary card is a skilful behaviour. You will get the greatest benefit if you complete the diary card on a daily basis. We suggest that you complete it at the end of the day, but if another time is more convenient for you, that is fine.

Here’s how you complete the card:

Initials/ID: Write in your initials.

How often did you fill out this side? Place a check mark to indicate how frequently you filled in the diary card during the past week.

Day and date: Write in the calendar date (day/month/year) under each day of the week.

Urge to binge: Refer to the legend and choose the number from the scale (0-6) that best represents your highest rating for the day. The key characteristics of the urge to consider when making your rating are intensity (how strongly you felt the urge) and duration (how long the urge lasted).

Urge to vomit: Refer to the legend and choose the number from the scale (0-6) that best represents your highest rating for the day. The key characteristics of the urge to consider when making your rating are intensity (how strongly you felt the urge) and duration (how long the urge lasted).

S-H: Self-harm (S-H) refers to your urge to deliberately hurt yourself. Refer to the legend and choose the number from the scale (0-6) that best represents your highest rating for the day. The key characteristics of the urge to consider when making your rating are intensity (how strongly you felt the urge) and duration (how long the urge lasted).

Binge episodes: Write the number of binge episodes you had each day, if any. A binge refers to an eating episode in which you felt a loss of control while eating, as if you could not stop. Large (or “**objective**”) binge episodes refer to amounts of food that are unquestionably larger than most people would eat under similar circumstances. Some guidelines include eating two full meals or more or three or more entrees/main courses. Other examples would include one-half box of biscuits and a tub of ice-cream. Small (or “**subjective**”) binge episodes involve feeling out of control when eating an amount of food that most people would not consider large or excessive, even if you would (e.g., chocolate bar, one-half bag of microwave popcorn).

Vomit and other episodes: Write the number of episodes in which you used vomiting or other behaviours (e.g., laxatives, diuretics, diet pills, dieting).

Mindless eating: Write in the number of “mindless” eating episodes that you had each day. Mindless eating refers to not paying attention to what you are eating, although you do not feel the sense of loss of control that you do during binge episodes. A typical example of mindless eating would be sitting in front of the TV and eating a bag of microwave popcorn or chips without any awareness of the eating (i.e., somehow, the food was gone, and you were only vaguely aware of having eaten it). Again, however, you didn’t feel a sense of being out of control during the eating.

Capitulating?: Refer to the legend and choose the number from the scale (0-6) that best represents your highest rating for the day. The key characteristics to consider when making your rating are intensity (strength of the capitulating) and duration (how long it lasted). Capitulating refers to giving up on your goals to stop binge eating and to skilfully cope with emotions. Instead, you capitulate or surrender to bingeing, acting as if there is no other way to cope than with food.

Emotion columns: On a scale of 0-6 rate the intensity of the emotions you experience each day. A rating of 0 means that the emotion was not experienced and a rating of 6 means that the intensity of the emotion is the highest you have experienced.

Skills: Refer to the legend and choose the number from the scale (0-7) that best represents your attempts to use the skills each day. When making your rating, consider whether or not you thought about using any of the skills, that day, whether or not you actually used any of the skills, and whether or not the skills helped.

R: Refers to whether you reinforced yourself for using skills; reinforcers are like rewards.

Urge to quit therapy & Belief in ability to self-control: Indicate the strength of your urge to quit therapy before the session and after the session each week. Also indicate the extent to which you believe you can control your emotions thoughts and behaviours.

Completing the skills side of the diary card:

How often did you fill out this side? Place a check mark to indicate how frequently you filled out the skills side of the diary card during the week.

Skills practice: Go down the column for each day of the week and circle each skill that you practices or used that day.

Dialectical Behavior Therapy Diary Card			Initials	ID#	How often did you fill out this side? ___ Daily ___ 2-3x ___ Once										Date Started						
Day & Date	Highest Urge To:			Highest Daily Rating of Emotion					Eating Disordered Behaviours							Capitulation?	Skills **	R			
	Binge	Vomit	S-H	Joy	Sad	Shame	Anger	Fear/ Anxiety	Objective Binge (lg)	Subjective Binge (sm)	Vomit	Lax., diur, diet pills	Dieting	Mindless Eating							
	0-6	0-6	0-6	0-6	0-6	0-6	0-6	0-6	#	Specify	#	Specify	#	Y/N	#	Fast or Restrict	# episodes	0-6	0-7		
Mon																					<input checked="" type="checkbox"/>
Tues																					
Wed																					
Thur																					
Fri																					
Sat																					
Sun																					
= Use the following 0 = urge/thought/feeling not experienced 1 = urge/thought/feeling experienced slightly and briefly 2 = urge/thought/feeling experienced moderately and briefly 3 = urge/thought/feeling experienced intensely and briefly 4 = urge/thought/feeling experienced slightly and endured 5 = urge/thought/feeling experienced moderately and endured 6 = =urge/thought/feeling experienced intensely and endured									**USED SKILLS 0 = Not thought about or used 1 = Thought about, not used, didn't want to 2 = Thought about, not used, wanted to 3 = Tried but couldn't use them						4 = Tried, could do them but they didn't help 5 = Tried, could use them, helped 6 = Didn't try, used them, didn't help 7 = Didn't try, used them, helped						
Urge to:				Before		After		Belief in ability to self regulate/self-control		Before session (0-6)		After session (0-6)		Chain Analysis Notes:							
Quit therapy (0-5):								Emotions:						Medication Changes/ Other:							
Objective binge (0-5):								Behaviors:													
Subjective binge (0-5):								Thoughts:													

Dialectal Behavior Therapy Diary Card	Instructions: Circle the days you worked on each skill			Filled out in session? Y N		How often did you fill out this side?			
						___ Daily ___ 2-3x ___ Once			
1. Wise mind	Mon	Tues	Wed	Thurs	Fri	Sat	Sun		
2. Observe: just notice (Urge Surfing)	Mon	Tues	Wed	Thurs	Fri	Sat	Sun		
3. Describe: put words on	Mon	Tues	Wed	Thurs	Fri	Sat	Sun		
4. Participate: enter into the experience	Mon	Tues	Wed	Thurs	Fri	Sat	Sun		
5. Nonjudgmental stance	Mon	Tues	Wed	Thurs	Fri	Sat	Sun		
6. One-mindfully: in-the-moment	Mon	Tues	Wed	Thurs	Fri	Sat	Sun		
7. Effectiveness: focus on what works	Mon	Tues	Wed	Thurs	Fri	Sat	Sun		
8. Mindful Eating	Mon	Tues	Wed	Thurs	Fri	Sat	Sun		
9. Reduce vulnerability: PLEASE	Mon	Tues	Wed	Thurs	Fri	Sat	Sun		
10. Build MASTERY	Mon	Tues	Wed	Thurs	Fri	Sat	Sun		
11. Build positive experiences	Mon	Tues	Wed	Thurs	Fri	Sat	Sun		
12. Opposite-to-emotion action	Mon	Tues	Wed	Thurs	Fri	Sat	Sun		
13. Distract	Mon	Tues	Wed	Thurs	Fri	Sat	Sun		
14. Self-soothe	Mon	Tues	Wed	Thurs	Fri	Sat	Sun		
15. Improve the moment	Mon	Tues	Wed	Thurs	Fri	Sat	Sun		
16. Pros and cons	Mon	Tues	Wed	Thurs	Fri	Sat	Sun		
17. Radical Acceptance	Mon	Tues	Wed	Thurs	Fri	Sat	Sun		
18. Identifying Values	Mon	Tues	Wed	Thurs	Fri	Sat	Sun		
19. Values Consistent Committed Action	Mon	Tues	Wed	Thurs	Fri	Sat	Sun		
20. Urge Surfing	Mon	Tues	Wed	Thurs	Fri	Sat	Sun		
21. Alternate Rebellion	Mon	Tues	Wed	Thurs	Fri	Sat	Sun		
22. Burning your bridges	Mon	Tues	Wed	Thurs	Fri	Sat	Sun		
23. Coping ahead	Mon	Tues	Wed	Thurs	Fri	Sat	Sun		
24. Observing your breath	Mon	Tues	Wed	Thurs	Fri	Sat	Sun		
25. Awareness exercises	Mon	Tues	Wed	Thurs	Fri	Sat	Sun		
26. Identify your emotions	Mon	Tues	Wed	Thurs	Fri	Sat	Sun		

VALUES MODULE

*Adapted From "ACT Made Simple" by Russ Harris (2009)
& "A CBT Practitioner's Guide to ACT" by Joseph Ciarrochi & Ann Bailey (2008)*

Session Content

- Review Homework from last session
- Review Diary Cards
- Introduction to Values
- Clarifying and Contacting Values

Orientation to Values

- Commence introduction to values with the following discussion: *we know a lot about what you don't want in your life, your struggles, your upsets, wanting to get rid of binge eating, wanting to lose weight. However, we don't know a lot about what each of you does want. What sort of person do you want to be, what sort of relationships you want to build, and what you want to do with your life to make it richer, fuller, and more meaningful.*
- The Values Module is exactly about that, finding out what gives your life a sense of meaning and purpose, and to use these values as an ongoing guide for your actions.

What are Values??

- Values are your heart's deepest desires for the way you want to interact with the world, other people, and yourselves. They are what you want to stand for in life, how you want to behave, what sort of person you want to be, what sort of strengths and qualities you want to develop.
- There are a number of important things that we need to understand about values
 1. Values are about ongoing action. They are not something you get or have or complete. They are something you do on an ongoing basis; if you can't do it it's not a value. For example, having a thin body is not a value it is a goal.
 2. Values are desired qualities of ongoing action; they are statements about how you want to behave, how you desire to act, what matters to you and what's important to you. They are not about what you should do or what you have to do.
 3. Values are different from goals. Values are like directions in which we want to move throughout our lives, whereas goals are things we want to complete or achieve.
- *Compass Metaphor*
- Values are beyond right or wrong, good or bad, morals, ethics so on and so forth.
- *Values are in the here and now, goals are in the future:*
 1. People who lead a very goal-focused life (such as I want to lose 15kgs) find that it often leads to a sense of chronic frustration. Why, because

- they are always looking into the future, continuously striving for the next goal under the illusion that it will bring them lasting happiness.
2. In a values focused life, we still have goals, but the emphasis is on living by our values in each moment. This approach leads to a sense of fulfilment and satisfaction because our values are always available to us.
 3. Values never need to be justified, they are simply statements about what is meaningful to you, they never need to be justified.
 4. Values are best held lightly, resist the urge to turn them into rigid rules, they are more like flexible guides.
 5. Values are also freely chosen, you don't have to act in particular ways you choose to do so because it's meaningful to you.

Clarifying Values

Exercise: 80th Birthday

I invite you to get into a comfortable position, and either close your eyes or fix them on a spot...and for the next few breaths, focus on emptying your lungs...pushing all the air out...and allowing them to fill by themselves...Notice the breath flowing in and flowing out...in the nostrils...down into the lungs...and back out...Notice how, once the lungs are empty, they automatically refill.

And now, allowing your breath to find its own natural rate and rhythm...no need to keep controlling it...I'd like you to do an exercise in imagination...to create a fantasy of your ideal 80th birthday...not to try and realistically predict it but to fantasize how it would be in the ideal world, if magic could happen and all your dreams came true... It's your 80th birthday, and everyone who truly matters to you...friends, family, partner, parents, children, colleagues...and anyone whom you truly care about, even if they are no longer alive, is gathered there in your honour...This might be a small intimate affair in a family home or a huge affair in a classy restaurant...it's your imagination, so create it the way you want it...

Now imagine that one person you care about – a friend, child, a partner, parent, you choose-stands up to make a speech about you...a short speech, no more than 3 or 4 sentences...and they talked about what you stand for in life...what you mean to them...and the role that you have played in their life...and imagine them saying whatever it is deep in your heart you would most love to hear them say.

Pause 40-50 seconds

Now repeat this for 2 other people (allow 2 minutes in total)

Most people find that this exercise brings up a whole range of feelings, some warm and loving, and some very painful. Take a moment to notice what you're feeling...and consider what these feelings tell you...about what truly matters to you...what sort of person you want to be...and what if, anything, you're currently neglecting (*pause for 30 seconds*).

And now bringing the exercise to an end...notice your breathing...and notice your body in the chair...and notice the sounds you can hear...and open your eyes and notice what you can see...take a stretch...and welcome back!

Debrief:

What happened? What did people say about you? What does this tell you about what matters to you, what do you want to stand for, and what sort of person you want to be. Take a few moments to write this down on the paper in front of you.

Bull's Eye: How connected with these values are you in your day-to-day living?

Homework: Between now and next session, would you be willing to do 2 things?

1. Notice when you're acting on your values
2. Notice what it is like to do so, what a difference it makes

Committed Action

- Committed Action means taking larger and larger patterns of action that are guided and motivated by your values
- The aim of the session today is to help you translate the values you identified last week into clear goals and specific actions. We are also going to be problem solving any barriers that might get in the way of you getting into action.

Committed Action: Step by Step

- 1) Choose an area of your life that is high priority for change (such as binge eating)
- 2) Choose the values you want to pursue in this area
- 3) Develop goals, guided by these values
- 4) Take action mindfully



Willingness and Commitment Worksheet

- *Work through the sheet then share value/s guided goals with the rest of the group*
- *Be careful about big long-term goals, they can pull you out of living in the present and suck you into the mindset of "I'll be happy once I've achieved that goal"*
- *Focus instead on identifying the smallest, simplest, easiest step you can take in the next 24hrs that will take you just that bit further in the direction you want to head.*
- *Our values are a never ending journey and every step we take is a valid and meaningful part of the journey.*



Barriers to Action – White Board Exercise

- On the whiteboard brainstorm common barriers under the following headings
Thoughts/Memories
Feelings
Sensations
Urges
- Problem solve ways of managing these barriers using DBT skills learnt thus far

Homework: Complete the Values and Action Practice Sheet every day this week

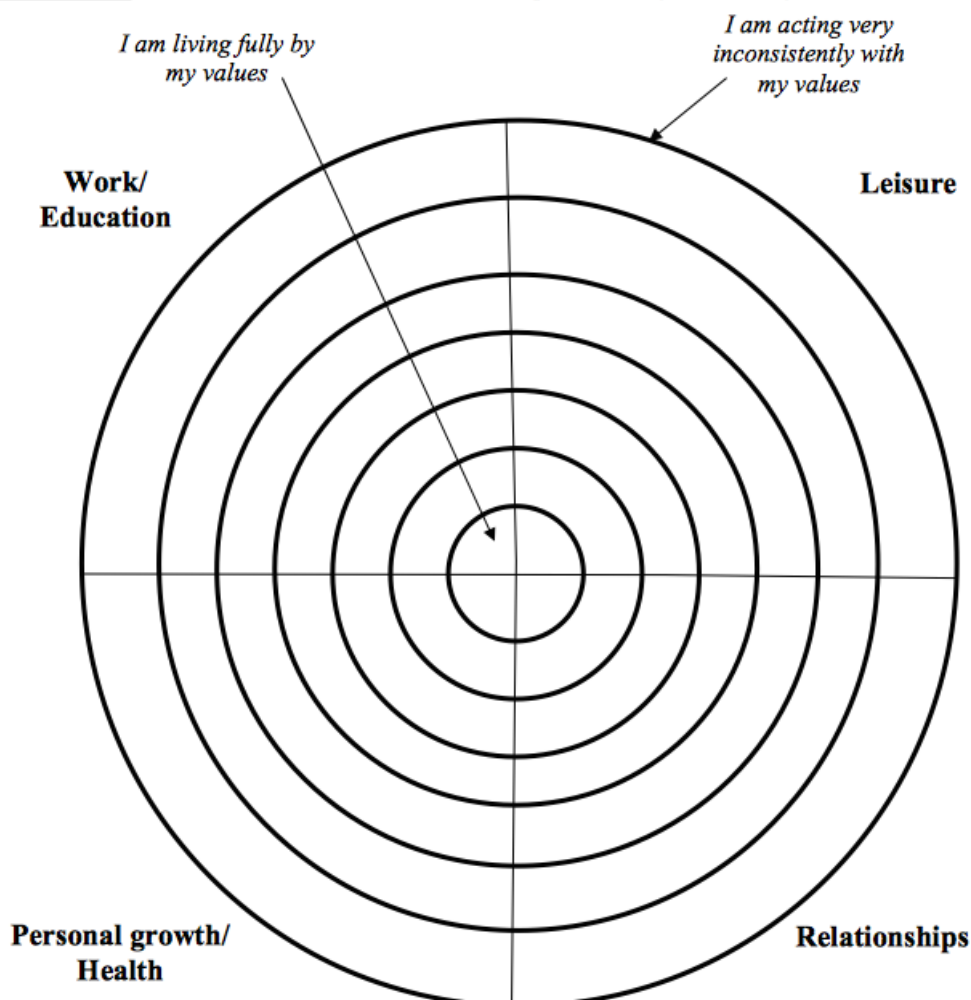
VALUES AND COMMITTED ACTION

From "ACT Made Simple" by Russ Harris (2009)

YOUR VALUES: What really matters to you, deep in your heart? What do you want to do with your time on this planet? What sort of person do you want to be? What personal strengths or qualities do you want to develop?

1. **Work/Education:** includes workplace, career, education, skills development, etc.
2. **Relationships:** includes your partner, children, parents, relatives, friends, co-workers, and other social contacts.
3. **Personal Growth/Health:** may include religion, spirituality, creativity, life skills, meditation, yoga, nature; exercise, nutrition, and/or addressing health risk factors like smoking, alcohol, drugs or overeating etc
4. **Leisure:** how you play, relax, stimulate, or enjoy yourself; activities for rest, recreation, fun and creativity.

THE BULL'S EYE: make an X in each area of the dart board, to represent where you stand today.



Adapted with permission from Tobias Lundgren's Bull's Eye
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www.newharbinger.com

WILLINGNESS & COMMITMENT

From "A CBT Practitioner's Guide to ACT" by Ciarrochi & Bailey 2008

What value do you want to put into play (or more into play) in your life? Values are like guiding stars; you set your course by them, but you never actually reach them or permanently realize them.

Now pick a goal that you would like to achieve, with respect to the value, which would let you know that you are "on track."

Now pick an action(s) that will lead you to accomplish that goal.

What internal "stuff" seems to stop you from achieving that goal?

Emotions & Sensations?

Unhelpful rules (musts, shoulds) and evaluations (such as "It's awful, "I'm not good enough")?

The key here is to look at this private stuff as what it is-just stuff-not what it says it is. Private stuff seems more powerful than reality sometimes. It often says it is something that is dangerous or something that is literally true. Notice how you can have thoughts and feelings and still do what you value.

Are you willing to make room for the thoughts and feelings that show up as a result of your committed action?

YES: Go forward with your journey and experience it!

NO: Go back, choose a different valued action, and repeat this exercise.

VALUES & ACTION PRACTICE SHEET

From "A CBT Practitioner's Guide to ACT" by Ciarrochi & Bailey 2008

Date:

Beginning of the Day

On this day, what value would you like to put into play?

What concrete action(s) would you like to take to put the value into play?

What thoughts and feelings come to mind that might seem like barriers to this action?

Are you willing to make room for the thoughts and feelings that show up as a result of your committed action?

YES: Go forward with your journey today and experience it!

NO: Go back, choose a different valued action, and repeat this exercise.

End-of-the-Day Rating

During this day, I have acted consistently with my values direction:

1	2	3	4	5
Not at all	A little bit	Moderately so	Quite a bit	Very much so

Appendix B

Study 2: Revision of The Emotional Eating Scale With a Focus on Shame

Participant Information Form

Qualtrics Online Survey

Participant Information Sheet

Researcher:

My name is Lisa Knipe, I am a Clinical PhD Candidate from the Research School of Psychology, (College of Medicine, Biology and Environment) at the Australian National University.

Project Title: The Role of Emotions in Eating Behaviour

General Outline of the Project:

The aim of this study is to investigate the role of different emotions in prompting urges to eat and how these factors relate to how you feel about yourself and how much control you have over your eating behaviour.

It is anticipated that several hundred participants will complete this online survey, the data is collected anonymously from survey responses and participants cannot be identified from their responses. The results from this survey will be published in both thesis form and in a peer reviewed journal. Funding for this project is provided by the Research School of Psychology at The Australian National University.

Participant Involvement:

Participation in this project is **voluntary**. You may, without any penalty, decline to take part or withdraw from the research at any time without providing an explanation, or refuse to answer a question. If you do withdraw, your data will be destroyed.

Participation in the study involves completing a series of questionnaires in an online survey that ask you to provide information about your eating behaviours, emotional experiencing, self-esteem and sense of control over eating. The questionnaires take approximately 20 – 30 minutes to complete. You are only required to complete the survey once. You will be offered \$0.80 for the time and effort involved in completing the survey. At the end of the survey, you'll be asked to make up a five-digit completion code number and enter it on the back page. In order for you to be compensated, you are required to enter the same number in Mechanical Turk after completing the survey.

It is possible that you may find some questions psychologically distressing. If you feel distressed as a result of completing these questionnaires and would like assistance and support, please contact the primary researcher at Lisa.Knipe@anu.edu.au (Telephone: 61 2 6125 5043) or Elizabeth Rieger (Telephone: 61 2 6125 4208). Alternatively, the following support is available: ANU Counselling Centre (Telephone: 61 2 6125 2442), ACT Mental Health Crisis and Assessment Service (Telephone: 1800 629 354) Lifeline 24 hour service (National Service - Telephone: 13 11 14) ACT Eating Disorders Program (Telephone: 02 6205 1519) The Butterfly Foundation (Eating Disorders – 1800 334 673) Eating Disorders Victoria (Telephone: 1300 550 236). Outside of Australia, the following support is available: www.mentalhealthamerica.net and <http://www.mentalhealthsupport.co.uk/>.

Exclusion criteria:

Participation in this study is limited to persons over 18 years of age. Please do not complete the survey if you are under the age of 18.

Confidentiality:

Participation in this study is anonymous. In completing the survey you will **not** be asked to provide identifying information and you will not be able to be identified from the information you provide.

Data Storage:

All data collected is stored in locked facilities at The Research School of Psychology at The Australian National University. All data will be analysed using secure computing facilities at The Australian National University. Only the primary researchers have access to this information. The data will be stored for a period of five years from publication of the research. Following this period, the electronic data will be deleted, and hard copies will be destroyed using secure document recycling facilities at ANU.

Queries and Concerns:

Concerns or queries about this project can be directed to Lisa.Knipe@anu.edu.au (Telephone: 61 2 6125 3972) or Elizabeth Rieger (Telephone: 61 2 6125 4208).

Ethics Committee Clearance:

The ethical aspects of this research have been approved by the ANU Human Research Ethics Committee. If you have any concerns or complaints about how this research has been conducted, please contact:

Ethics Manager
The ANU Human Research Ethics Committee
The Australian National University
Telephone: +61 2 6125 3427
Email: Human.Ethics.Officer@anu.edu.au

Qualtrics Online Survey

Default Question Block

The Role of Emotions in Eating Behaviour Information Page

Investigators: Lisa Knipe; Elizabeth Rieger, PhD

Project Expiry Date: 20/12/2013

Thank you for considering participating in this study. The aim of the study is to investigate the role of different emotions in prompting urges to eat and how these factors relate to how you feel about yourself and how much control you have over your eating behaviour.

Participating in the study involves completing a series of questionnaires that ask you to provide information about your eating behaviours, emotional experiencing, self-esteem and sense of control over eating. The questionnaires take approximately 20 - 30 minutes to complete.

Participation in this study is voluntary. You do not have to participate in the study and you can withdraw from the study at any stage before you submit your survey responses, without penalty. You will not be asked to provide identifying information and you will not be able to be identified from the information you provide. Any information collected will be kept confidential and stored in locked facilities. Only the primary researchers will have access to this information. Any person over the age of 18 years is able to participate in the study. Please do not complete the questionnaires if you are under the age of 18 years.

It is possible that you may find some questions psychologically distressing. If you do find this survey please contact the primary researcher at Lisa.Knipe@anu.edu.au (Telephone: 02 6125 3972) or Elizabeth Rieger (Telephone: 02 6125 4208).

Alternatively, the following support is available.

ACT Contacts:

ANU Counselling Centre - 02 6125 2442

ACT Mental Health Crisis and Assessment Service - 1800 629 354

ACT Eating Disorders Program - 02 6205 1519

National Contacts:

Lifeline 24 hour service - 13 11 14

The Butterfly Foundation National Support Line - 1800 ED HOPE / 1800 33 4673

The Butterfly Foundation provides confidential support for people with eating disorders, people with body image issues, carers, partners, family members, friends, teachers, counsellors, employers, health professionals or anyone with a question about eating disorders or negative body image.

Eating Disorders Victoria (Telephone: 1300 550 236).

Should you have any concerns regarding the manner in which this research is being conducted, please contact the Human Research Ethics Committee:
Human Ethics Officer
Australian National University ACT 0200
Tel: (02) 6125 3427
Email: Human.Ethics.Officer@anu.edu.au

By clicking the arrow below, you indicate that you have read and understood the above information and give your consent to participate in this study.

I have read and understand the above information and I give my consent for participation in this study.

What is your gender?

- Male
 Female

What is your age?

- 18 - 25 years 56 - 65 years

- 26 - 35 years
- 36 - 45 years
- 46 - 55 years

- 66 - 75
- 76+ years

What is your highest level of education?

- Year 10
- Year 12
- TAFE / CIT

- University: Undergraduate Degree
- University: Postgraduate Degree
- Other (please describe)

In which country were you born?

- Australia
- Other - please state:

We all respond to different emotions in different ways. Some types of feelings lead people to experience an urge to eat. Please indicate the extent to which the following feelings lead you to feel an urge to eat by checking the appropriate box.

	No Desire to Eat	A Small Desire to Eat	A Moderate Desire to Eat	A strong Desire to Eat	An Overwhelming Urge to Eat
Resentful	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Discouraged	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Shaky	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Worn Out	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Inadequate	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Excited	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Rebellious	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Blue	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Jittery	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Sad	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Please continue to indicate the extent to which the following feelings lead you to feel an urge to eat by checking the appropriate box.

	No Desire to Eat	A Small Desire to Eat	A Moderate Desire to Eat	A strong Desire to Eat	An Overwhelming Urge to Eat
Uneasy	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Irritated	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Jealous	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Worried	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Frustrated	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Lonely	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Furious	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
On Edge	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Confused	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Nervous	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Please continue to indicate the extent to which the following feelings lead you to feel an urge to eat by checking the appropriate box.

	No Desire to Eat	A Small Desire to Eat	A Moderate Desire to Eat	A strong Desire to Eat	An Overwhelming Urge to Eat
Angry	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Guilty	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Bored	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Helpless	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Upset	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Shame	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Disgraced	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Embarrassed	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Humiliated	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Bad	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Self-disgust	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Please continue to indicate the extent to which the following feelings lead you to feel an urge to eat by checking the appropriate box.

	No Desire to Eat	A Small Desire to Eat	A Moderate Desire to Eat	A strong Desire to Eat	An Overwhelming Urge to Eat
Blah	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Nothing to do	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Unstimulated	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Unexcited	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Restless	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Disinterested	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

We all respond to different emotions in different ways. Some types of feelings lead people to experience an urge to eat. Please indicate the extent to which the following feelings lead you to feel an urge to eat by checking the appropriate box.

	No desire to eat	A small desire to eat	A moderate desire to eat	A strong desire to eat	An overwhelming urge to eat
When I can't control my weight, I feel like something must be wrong with me.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Feeling ashamed of my body when I haven't made the effort to look my best.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Feeling like I must be a bad person when my body does not look as good as it could.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Feeling ashamed when people see my body.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Feeling like I'm not an okay person when I can't control my weight.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Feeling ashamed when I'm not the size I think I should be.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

This scale consists of a number of words that describe different feelings and emotions. Read each item and then mark the appropriate answer in the space next to that word. Please indicate to what extent you feel this way right now, that is, at the present moment.

	Very slightly or not at all	A little	Moderately	Quite a bit	Extremely
Interested	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Distressed	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Excited	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Upset	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Strong	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Guilty	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Scared	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Hostile	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Enthusiastic	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Proud	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Please continue to indicate to what extent you feel this way right now, that is, at the present moment.

	Very slightly or not at all	A little	Moderately	Quite a bit	Extremely
Irritable	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Alert	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Ashamed	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Inspired	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Nervous	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Determined	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Attentive	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Jittery	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Active	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Afraid	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

We are interested in how people think others see them.
Below is a list of statements describing feelings or experiences about how you may feel other people see you.

Read each statement carefully and indicate the frequency with which you find yourself feeling or experiencing what is described in the statement.

	Never	Seldom	Sometimes	Frequently	Almost Always
I feel other people see me as not good enough	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I think that other people look down on me	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Other people put me down a lot	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I feel insecure about others opinions of me	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Other people see me as not measuring up to them	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Other people see me as small and insignificant	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Other people see me as somehow defective as a person	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
People see me as unimportant compared to others	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Other people look for my faults	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Please continue to read each statement carefully and indicate the frequency with which you find yourself feeling or experiencing what is described in the statement.

	Never	Seldom	Sometimes	Frequently	Almost Always
People see me as striving for perfection but being unable to reach my own standards	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I think others are able to see my defects	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Others are critical or punishing when I make a mistake	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
People distance themselves from me when I make mistakes	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Other people always remember my mistakes	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Others see me as fragile	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Others see me as empty and unfulfilled	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Others think there is something missing in me	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Other people think I have lost control over my body and feelings	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

For each of the following listed feelings indicate how common the feeling is for you.

	Never	Rarely	Some of the time	Frequently but not continuously	Continuously or almost continuously
Embarrassment	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Mild guilt	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Feeling ridiculous	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Worry about hurting or injuring someone	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Sadness	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Self-consciousness	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Feeling humiliated	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Intense guilt	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Euphoria	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Feeling "stupid"	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Regret

For each of the following listed feelings indicate how common the feeling is for you.

	Never	Rarely	Some of the time	Frequently but not continuously	Continuously or almost continuously
Feeling "childish"	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Mild happiness	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Feeling helpless, paralyzed	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Depression	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Feelings of blushing	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Feeling you deserve criticism for what you did	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Feeling laughable	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Rage	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Enjoyment	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Feeling disgusting to others	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Remorse	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Below is a list of statements dealing with your general feelings about yourself.
For each of the following statements please indicate how much you agree with the statement.

	Strongly agree	Agree	Disagree	Strongly disagree
I feel that I'm a person of worth, at least on an equal plane with others.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I feel that I have a number of good qualities.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
All in all, I am inclined to feel that I am a failure.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I am able to do things as well as most other people.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I feel I do not have much to be proud of.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I take a positive attitude toward myself.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
On the whole, I am satisfied with myself.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I wish I could have more respect for myself.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I certainly feel useless at times.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
At times I think I am no good at all.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

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

Remember that the questions only refer to the past four weeks (28 days) only.

	No Days	1-5 days	6-12 days	13-15 days	16-22 days	23-27 days	Every day
Have you been deliberately trying to limit the amount of food you eat to influence your shape or weight (whether or not you have succeeded)?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
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?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Have you tried to exclude from your diet any foods that you like in order to influence your shape or weight (whether or not you have succeeded)?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
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)?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Have you had a definite desire to have an empty stomach with the aim of influencing your shape or weight?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Have you had a definite desire to have a totally flat stomach?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
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)?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
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)?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Have you had a definite fear of losing control over eating?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Have you had a definite fear that you might gain weight?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Have you felt fat?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Have you had a strong desire to lose weight?

**Please select the appropriate number in the boxes on the right.
Remember that the questions only refer to the past four weeks (28 days).**

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)?

On how many of these times did you have a sense of having lost control over your eating (at the time that you were eating)?

Over the past 28 days, on how many DAYS have such episodes of overeating occurred (i.e., you have eaten an unusually large amount of food and have had a sense of loss of control at the time)?

Over the past 28 days, how many times have you made yourself sick (vomit) as a means of controlling your shape or weight?

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

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

Over the past 28 days, on how many days have you eaten in secret (i.e. furtively)?
(Do not count episodes of binge eating).

No days 1-5 days 6-12 days 13-15 days 16-22 days 23-27 days Every day

On what proportion of the times that you have eaten have you felt guilty (felt that you've done wrong) because of its effect on your shape or weight?
(Do not count episodes of binge eating).

None of the times A few of the times Less than half Half of times More than half Most of the time Every time

Over the past 28 days, how concerned have you been about other people seeing you eat?
(Do not count episodes of binge eating).

Not at all Slightly Moderately Markedly

**Please select the appropriate circle on the right.
Remember that the questions only refer to the past four weeks (28 days).**

Over the past 28 days

	Not at all (0)	(1)	Slightly (2)	(3)	Moderately (4)	(5)	Markedly (6)
Has your weight influenced how you think about (judge) yourself as a person?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Has your shape influenced how you think about (judge) yourself as a person?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
How much would it have upset you if you had been asked to weigh yourself once a week (no more, or less, often) for the next four weeks?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
How dissatisfied have you been with your weight?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
How dissatisfied have you been with your shape?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
How uncomfortable have you felt seeing your body (for example, seeing your shape in the mirror, in a shop window reflection, while undressing or taking a bath or shower)?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
How uncomfortable have you felt about others seeing your shape or figure (for example, in communal changing rooms, when swimming, or wearing tight clothes)?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

What is your weight at present? (Please give your best estimate in kilograms - e.g. 70.5)

What is your height? (Please give your best estimate in metres - e.g. 1.68)

Over the past three-to-four months have you missed any menstrual periods?

- Yes
- No

How many?

1 2 3 4 Other

Have you been taking the "pill"?

- Yes
- No

Many people report that they experience some loss of control over eating on at least some occasions.

In the past three months, have there been any times when you have felt some degree of loss of control over eating?

- Yes
- No

Please think of a typical episode when you felt some loss of control over eating.
 During your typical episode of loss-of-control eating, how much did each of the following statements apply to you?

	Not at all true for me	Slightly true for me	Moderately true for me	Very true for me	Extremely true for me
I felt I had lost control over eating.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I felt I had to keep on eating.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I felt I could not stop myself from eating.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I felt I could not prevent myself from starting to eat.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I felt driven or compelled to eat.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I felt I needed to keep tasting the food I was eating.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I felt full but still continued to eat.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I felt I had to continue eating even though I didn't want to.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I felt I had to continue eating even though I hadn't planned to.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I felt I had to continue eating even though I knew I'd regret it later.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I felt I had to finish what I was eating.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I felt I had to keep eating even though I told myself to stop.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I felt like the food was "calling to me."	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I felt like my hand movements (e.g., bringing food to my mouth) were automatic and out of my control.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Please think of a typical episode when you felt some loss of control over eating.
 During your typical episode of loss-of-control eating, how much did each of the following statements apply to you?

	Not at all true for me	Slightly true for me	Moderately true for me	Very true for me	Extremely true for me
I felt like my mouth movements (e.g., chewing, swallowing) were automatic and out of my control.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I felt like there was no point in trying not to eat because nothing could stop me eating.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
While eating, I felt "zoned out" or "tuned out" from the outside world.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
While eating, I felt like I was watching or looking at myself from "outside".	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I felt like the craving to eat overpowered me.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

My eating felt like a ball rolling down a hill that just kept going and going.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I tried to stop eating but couldn't do it.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I felt I was eating more than I should.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I felt I was eating faster than normal.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
While eating, I felt my thoughts were racing.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
While eating, I had a feeling of "fuzziness".	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
All I was thinking about was the sensation of eating (e.g., chewing, tasting, swallowing).	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
While eating, I felt a sense of relief or release.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
While eating, I felt a physical rush or high.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Please think of a typical episode when you felt some loss of control over eating.
 During your typical episode of loss-of-control eating, how much did each of the following statements apply to you?

	Not at all true for me	Slightly true for me	Moderately true for me	Very true for me	Extremely true for me
While eating, I had a feeling of being elated.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
While eating, I felt "numb".	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
While eating, I felt detached from everyday life.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
While eating, I felt I was stuffing myself.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I kept eating even though I was no longer hungry.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I felt helpless about controlling my eating.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I felt like I had "blown it" and might as well keep eating.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I ate alone because I was embarrassed.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
While eating, I felt disgusted.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
While eating, I felt guilty.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
While eating, it didn't seem real.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
While eating, I felt like I was dreaming.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I kept eating despite feeling sick.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I kept eating despite feeling bloated.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Please think of a typical episode when you felt some loss of control over eating.
 During your typical episode of loss-of-control eating, how much did each of the following statements apply to you?

	Not at all true for me	Slightly true for me	Moderately true for me	Very true for me	Extremely true for me
I felt like I wasn't really tasting the food I was eating.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I felt like I couldn't do anything other than eat.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I ate and ate all day long.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I could not stop grazing.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I kept picking at food constantly.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I kept nibbling all the time.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Eating as quickly as possible seemed to be the only thing that mattered.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Eating as much as possible seemed to be the only thing that mattered.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I lost track of what and how much I was eating.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
While eating, I felt like I was in my own little world.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
While eating, my mind was blank.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I couldn't concentrate on anything other than eating.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

While eating, I couldn't feel anything.

While eating, I had feelings of shame.

Please think of a typical episode when you felt some loss of control over eating.

During your typical episode of loss-of-control eating, how much did each of the following statements apply to you?

	Not at all true for me	Slightly true for me	Moderately true for me	Very true for me	Extremely true for me
Eating as much as possible seemed to be the only thing that mattered.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I lost track of what and how much I was eating.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
While eating, I felt like I was in my own little world.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
While eating, my mind was blank.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I couldn't concentrate on anything other than eating.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
While eating, I couldn't feel anything.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
While eating, I had feelings of shame.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Please continue to think of a typical episode when you felt some loss of control over eating.

On average during such episodes, how large was the amount of food you consumed?

- Very small (e.g., a couple of bites)
- Small (e.g., a small snack)
- Moderately small (e.g., a medium snack or small meal)
- Medium sized (e.g., a normal meal)
- Slightly large (e.g., a large meal)
- Large (e.g., a large meal with dessert)
- Very large (e.g., two full meals with dessert)

Over the past month (4 weeks), during how many eating episodes have you felt some loss of control over eating?
(Please select one number only)

Over the 3 months, during how many eating episodes have you felt some loss of control over eating?
(Please select one number only)

Thank you for filling out this survey.

If you experienced any distress as a result of completing this questionnaire and would like assistance and support, please contact the primary researcher at Lisa.Knipe@anu.edu.au (Telephone: 02 6125 3972) or Elizabeth Rieger (Telephone: 02 6125 4208).

Alternatively, the following support is available.

ACT Contacts:

ANU Counselling Centre - 02 6125 2442

ACT Mental Health Crisis and Assessment Service - 1800 629 354

ACT Eating Disorders Program - 02 6205 1519

National Contacts:

Lifeline 24 hour service - 13 11 14

The Butterfly Foundation National Support Line - 1800 ED HOPE / 1800 33 4673

The Butterfly Foundation provides confidential support for people with eating disorders, people with body image issues, carers, partners, family members, friends, teachers, counsellors, employers, health professionals or anyone with a

question about eating disorders or negative body image.

Eating Disorders Victoria (Telephone: 1300 550 236).

Should you have any concerns regarding the manner in which this research is being conducted, please contact the Human Research Ethics Committee:
Human Ethics Officer
Australian National University ACT 0200
Tel: (02) 6125 3427
Email: Human.Ethics.Officer@anu.edu.au