Mindfulness and Binge Eating from a Transdiagnostic Framework: Findings from a Randomised Control Trial

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Submitted in fulfilment of the requirements of the degree of Doctor of Philosophy in Clinical Psychology, August 2008
Abstract

Bulimia Nervosa and Binge Eating Disorder are chronic disorders which significantly impact on the quality of life of individuals who suffer from them. There remains considerable diagnostic, etiological and treatment uncertainty regarding them and the ED-NOS category, which is thought to be the most common clinical presentation. This thesis has introduced a Transdiagnostic Process Model of Binge Eating which has provided a parsimonious explanation for the development and maintenance of BN, BED and ED-NOS. This thesis has identified the need for more effective group treatments for BN and BED, as current group treatments have demonstrated modest success. The relatively new area of mindfulness-based treatments has shown encouraging findings on bingeing and psychological variables for BED. There are as yet no known mindfulness-based treatment studies for BN. Further, proposed mindfulness components target the processes outlined in the Transdiagnostic Process Model of Binge Eating. The aim of the thesis was to investigate the effectiveness of a mindfulness group treatment for BN, BED, and ED-NOS. Measures of both primary (eating disorder behaviours) and secondary (psychological factors) variables were included, and clinical significance was assessed. A randomised-controlled trial was conducted, in which 126 females (aged 19 to 66 years) were randomly assigned to an eight session group-mindfulness treatment \( n = 61 \) or waitlist condition \( n = 65 \), of which 45 women completed the active treatment. Results showed that the mindfulness treatment resulted in significant reductions on both primary and secondary variables, with large effect sizes, compared to a Waitlist control group, with the exception of purging behaviours. A substantial proportion of participants evidenced clinically significant change, and mean post-treatment frequencies of bingeing and compensatory behaviours no longer met
diagnostic criteria. These improvements were maintained at one-month follow-up. Pre
to post treatment increases in mindfulness significantly predicted symptom change,
whereas group cohesion and homework mindfulness practice was not significantly
related to outcome. The findings of the current study have suggested that mindfulness
may be an effective treatment for binge eating, and tentative support has been
provided for the Transdiagnostic Process Model of Binge Eating.
Declaration

This work has not been previously submitted for a degree or diploma in any university. To the best of my knowledge and belief, the thesis contains no material previously published or written by another person except where due reference is made in the thesis itself.

____________________________

Angela Morgan

July 2008
Acknowledgements

My very first encounter with mindfulness was as a second year undergraduate student, undergoing training as a volunteer telephone counsellor. During this training, I spoke of becoming aware of the urge to give advice before I proceeded to do so. My trainer, John Beck, replied “That’s called being mindful”. I was intrigued by this concept, and unbeknownst to either myself or John, this moment marked the beginning of my journey with mindfulness. This journey has been profound. Little did I know that John’s simple statement would subsequently alter the course of my life, shape my career, and assist many women struggling with eating disorders to find peace. Namaste, John.

This thesis has in itself been a journey. A journey with many steep hills and scary monsters, unexpected obstacles, unavoidable delays, but also with many moments of flow, of insight, the joy of discovery, and the privilege of witnessing the power of mindfulness unfold in others.

Like many journeys, the truly special moments lie not with the landscape, but with the people that are encountered on the path. Some have waved me off and patiently awaited my return; others have joined me at various places along the way. Only one person has been beside me for each and every step. And to this person, my supervisor Dr. Analise O’Donovan, I wish to unreservedly express my deepest gratitude. It is difficult to convey just how important and supportive this relationship has been, and how fundamental Analise’s intuitive understanding, sensitivity and encouragement have been to my capacity to not only survive, but thrive. I cannot imagine this journey without her.

Thankyou to my Associate Supervisor Dr. Stefano Occhipinti for his statistical guidance, maintaining calm in response to my many and sometimes frantic e-mails,
containing my analysis-related angst, and for not rolling his eyes too often. I would like to extend my appreciation to my co-facilitators, Michelle Hanisch, Vivien King and Kim Stalidzans, and Malcolm Huxter and Dale Martin for providing earlier training. I am also grateful to Professor Sharon Dawe and the Griffith Psychological Health Research Centre for providing a completion scholarship.

Thankyou to my parents Geoff Morgan and Delle Morgan, firstly for providing me with a very secure, loving and stable foundation from which I could explore an unpredictable world, secondly for instilling in me a sense of curiosity and faith in myself, and finally for providing me with the necessary supplies and equipment when my own meagre resources became depleted.

Thankyou to my dear friends Tracy Oliver, Louise Duffy, Rhonda Stoertebecker and Leisa Peterson, who waved me off at the beginning of my journey. They were very patient and understanding when contact was sporadic, and did not once ask me if I was finished yet.

Thankyou to those that I have met along the way. To Phil ‘Hoff’ Hoffmann, whose generosity and kindness brought tears to my eyes (sorry about that), and who provided me with shelter in difficult terrain. To Michelle Hanisch, who travelled with me for a time, and who co-authored the treatment manual; an experience which was a true gift, and one which I will not forget. To my fellow Friday afternoon ‘clubbers’, Hannah Gill, Kely Lapworth and Julie Nos, who joined the trek at a relatively late stage, but whose camaraderie provided welcome and delightful respite.

Finally, this thesis could not have come to fruition without the marvellous women who took part in this program, who had the courage to make contact with the present moment. It was a privilege to witness their journey.
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This thesis presents the findings of a mindfulness-based group treatment for women with eating disorders that are characterised by binge eating, including Bulimia Nervosa, Binge Eating Disorder, and Eating Disorder Not Otherwise Specified. This research project is timely, as it investigates current issues in the domains of eating disorders and mindfulness-based treatments. With planning for the DSM-V underway, vital questions are addressed regarding the blurry definitions of a ‘binge’, the diagnostic validity of binge frequency criteria, and the long neglected Eating Disorder Not Otherwise Specified category. In the burgeoning area of mindfulness-based treatments, this project begins an empirical inquiry into mechanisms of change, and contributes a randomised treatment study to further build the efficacy of mindfulness treatments. Transdiagnostic processes provide a bridge to link both areas. Etiological models of eating disorders are reconsidered from a transdiagnostic perspective, as are the underlying mechanisms of mindfulness. A Transdiagnostic Process Model of Binge Eating is developed, based on these mechanisms, which thus informs the mindfulness treatment program.

This thesis is divided into four chapters. The first chapter presents the symptomatology and features of binge-eating related disorders, the diagnostic challenges, an etiological overview, proposed transdiagnostic processes, the introduction of a Transdiagnostic Process Model of Binge Eating, and a review of treatment outcome studies. This chapter concludes with the argument that current group-based treatments are limited in their effectiveness, and proposes mindfulness-based treatments as an alternative approach.

Chapter Two explores the construct of mindfulness and possible mechanisms of change, and reviews the body of mindfulness-based treatment research to date.
Mindfulness is conceptualised from a transdiagnostic framework, and is proposed as being a promising treatment approach for eating disorders. Chapter Three presents the procedure and findings from the randomised control trial of a mindfulness treatment for binge eating, and Chapter Four discusses the impact of these findings, limitations of the current research and highlights future research directions.
CHAPTER ONE

Binge Eating

“For the last forty years I have been totally obsessed with food. I don’t want to think about food anymore.” Sue, 56 years.

“My whole life has been food versus me.” Janine, 32 years.

“I am totally at the mercy of eating.” Caroline, 28 years.

(Participants reflecting on their struggle with binge eating in Session 1 of the Mindfulness Program, 2007. Identifying details have been changed).

Eating disorders feature prominently in the media, are controversial, and their etiological pathways are elusive (Fairburn & Harrison, 2003). Treatment is challenging, comorbidity is complex, and relapse is common. There are suggestions of an emerging epidemic in eating disorders, with some research suggesting that the incidence of Bulimia Nervosa has increased three-fold in women aged 10 to 39 years, from 1988 to 1993 (Soundy, Lucas, Suman, & Melton, 1995). These rates are widely considered to be underestimated, due to associated secrecy and stigma, and bulimia nervosa being less easily identifiable or obvious than anorexia nervosa (Soundy et al., 1995). Whereas eating disorders were once considered to be a ‘Western’ phenomenon, there is mounting evidence to suggest that they may transcend cultural boundaries, with increased reports from Asian and African societies (Lee & Katzman, 2002).

Eating disorders cause significant distress for the individuals who suffer from them. These disorders impact profoundly on social, emotional, and physical aspects of their lives, as well as the lives of their families and partners. Males and females who
report bingeing or purging behaviours experience significantly increased functional impairment compared to the general population, reflected in self-reported number of days that they were unable to complete work, study or domestic roles (Mond & Hay, 2007). Partners of people with bulimia nervosa have reported feeling frustrated and helpless, and they struggle to understand the disorder (Huke & Slade, 2006). Research on the quality of life of women with eating disorders has found that compared to normative controls, these women reported significant deterioration in terms of their perceived quality of life, social functioning, emotional roles and reactivity, decreased vitality, energy levels and sleep quality, and increased sense of social isolation (Abraham, Brown, Boyd, Luscombe, & Russell, 2006; Padierna, Quintana, Arostegu, Gonzalez, & Horcajo, 2000).

“I don’t want to be sick anymore. Because it really has affected my well-being. I just want peace. I want to stop the self-loathing and self-hatred that goes just before a binge and just after a binge. Instead of the love of food, I want the love of me”. Diane, 48 years

**Diagnostic and Clinical Features**

An eating disorder has been defined as “a persistent disturbance of eating behaviour or behaviour intended to control weight, which significantly impairs physical health or psychosocial functioning” (Fairburn & Walsh, 2002, p. 171). Eating disorders include Anorexia Nervosa (AN), Bulimia Nervosa (BN), and Eating-Disorder Not Otherwise Specified (ED-NOS), which encompasses Binge Eating Disorder (BED). This thesis will focus on those disorders that are characterised by recurrent binge eating, hence excluding AN.
While historical accounts of binge eating date back for centuries, the diagnostic entity known as Bulimia Nervosa (BN) emerged in 1979, and first appeared in the DSM-III in 1980 (Vanderycken, 2002). Eating disorders which are of clinical severity, but do not meet criteria for BN or AN, fall within the ED-NOS diagnostic category (American Psychiatric Association, 2000). BED was first described in 1959 (Stunkard, 1959) but only emerged in the 1990s as a proposed new category of eating disorder requiring further study (American Psychiatric Association, 2000; Walsh & Kahn, 1997), and is currently incorporated within ED-NOS criteria. (Please refer to Appendix A for the diagnostic criteria for BN and ED-NOS, and the research criteria for the provisional category of BED).

The Nosological Debate

The nosology of eating disorders has been – and continues to be – subject to debate (Walsh & Kahn, 1997). This debate has centred upon three main areas: the distinction between BN and BED, the status of ED-NOS, and the validity of the current classification and diagnostic scheme for eating disorders in general.

Distinctions between Bulimia Nervosa and Binge Eating Disorder

The overlap of symptoms between BN and BED has led to disagreements over whether BED is a separate diagnostic entity, or whether it can be subsumed within BN-nonpurg ing type (Bulik, Sullivan, & Kendler, 2000; Z. Cooper & Fairburn, 2003; Vervaet, van Heeringen, & Audenaert, 2004). Some research has found differences between these diagnostic groups in terms of demographic and personality factors, course of illness and body mass index (BMI; Vervaet, van Heeringen, & Audenaert, 2004). However, a recent multi-site study found more similarities than
differences on measures of dietary restraint, shape and weight concern, comorbidity, age and BMI (Le Grange et al., 2006), with a treatment seeking bias possibly accounting for the commonly reported higher BMI in BED (Barry, Grilo, & Masheb, 2003).

While there have been contradictory findings regarding age and binge severity between the groups (Barry et al., 2003; Le Grange et al., 2006; Wilfley, Schwartz, Spurrell, & Fairburn, 2000), there is converging evidence to suggest that these diagnostic categories share similarities in underlying psychological and attitudinal factors (Barry et al., 2003; Bulik et al., 2000). These diagnostic distinctions appear to be of less relevance in terms of treatment; as binge eating is seen as the central feature of both disorders, BN treatments are considered to be generalisable to BED (Telch, Agras, & Linehan, 2000).

Eating Disorder Not Otherwise Specified

A growing debate centres upon the current diagnostic status (or lack thereof) of ED-NOS. Although ED-NOS is the most common clinical eating disorder presentation, there is currently limited knowledge regarding etiology, prevention, course and outcome, comorbidity and treatment response, as research studies systematically exclude these participants (Rockert, Kaplan, & Olmstead, 2007; Striegel-Moore & Wonderlich, 2007). This has consequences beyond clinical knowledge, as these individuals may be prevented from receiving benefits from third party payers if diagnostic criteria are not met (Rockert et al., 2007). Findings from a review of four adult samples has revealed that the ED-NOS category has a weighted average prevalence of 60% in outpatient samples, compared to 14.5% for AN, and 25.5% for BN (Fairburn & Bohn, 2005). Within the ED-NOS category, between 5.8%
and 9.7% met BED criteria (Fairburn & Bohn 2005), indicating that despite the emergence of this provisional category, a substantial proportion of individuals with clinically significant eating disturbance remains outside current diagnostic categories.

The very recent focus on ED-NOS has seen the proposition of various combinations of sub-groups. One study has proposed three sub-types: a) a ‘sub-threshold’ group where symptoms fail to meet diagnostic thresholds of AN or BN; b) a ‘mixed’ group, which reflects a combination of AN/BN symptoms which are distinguishable from existing DSM-IV diagnostic features; and c) a ‘binge eating disorder’ group, consistent with the current DSM-IV criteria (Fairburn & Bohn, 2005). Latent profile analysis has elsewhere identified five clusters, two of which resemble sub-threshold AN and BN categories, a third that was similar to sub-threshold AN but with a higher BMI and increased bingeing and purging, followed by ‘obese’ and ‘BED’ sub-groups (Mitchell et al., 2007). Analysis of ED-NOS cases has indicated that 35% of a sample appeared to be ‘sub-threshold’ AN, in that the underweight or amenorrhea criteria were not met, while another 37% were ‘sub-threshold’ BN, due to less regular binge frequency and absence of compensatory behaviours (Turner & Bryant-Waugh, 2004). There were no significant differences between BN and ED-NOS participants in terms of restrained eating, although the BN participants had higher levels of eating concern, shape and weight concern, and fear of weight gain than the ED-NOS participants (Turner & Bryant-Waugh, 2004). Other research has indicated that these two groups share similar levels of psychopathology and psychosocial impairment (Fairburn & Bohn, 2005; Rockert et al., 2007). Apart from the BED subtype of ED-NOS, there have been no treatment studies on what is the most common clinical presentation of eating disorder psychopathology (Fairburn & Bohn, 2005).
Three potential resolutions to this debate were identified: the relaxation of diagnostic criteria, particularly for binge frequency as optimum frequency thresholds remain unclear (Fairburn, Cooper, & Shafran, 2003), the reclassification of ED-NOS into BED and a ‘mixed eating disorder’, and the transdiagnostic solution (Fairburn et al., 2003) discussed below.

Diagnostic Dilemmas: The Transdiagnostic Solution

A suggested solution to this diagnostic problem is a transdiagnostic theory of eating disorders, rather than the maintenance of discrete categories and sub-types (Fairburn et al., 2003). This proposed solution is supported by research findings which emphasise similarities in underlying psychopathology for eating disorders, along with the observation that many individuals migrate between disorders over time (Fairburn et al., 2003). Demonstrating this migration, a large prospective study of eating disorder stability found that over 12 years, 7.7% of the BN sample and 17.9% of the BED sample progressed to ED-NOS, 16.4% of the BED sample migrated to BN, while of the ED-NOS sample, 21% progressed to BN, and 3.2% developed BED (Fichter & Quadflieg, 2007). Results from a 30-month prospective study found that, excluding those participants who recovered, 53% of the sample migrated between diagnoses, with the highest rate of stability for AN. Of the BN and ED-NOS participants, 37% and 31% respectively retained their initial diagnosis, with 26% of BN participants migrating to ED-NOS, and 3.4% of ED-NOS participants migrating to BN (Milos, Spindler, Schnyder, & Fairburn, 2005). This data supports the argument by Fairburn and colleagues (2003) that ED-NOS is an important diagnostic entity, which requires further understanding and research attention. Correspondingly, the argument is thus made that treatment interventions should focus on a range of
eating disorders (Fairburn & Harrison, 2003), to provide an opportunity for all individuals suffering from eating disorders to experience positive outcomes.

**Epidemiology**

Survey research indicates that as many of 19% of young females report bulimic symptoms. Early studies suggested that the lifetime prevalence of binge eating is approximately 23.6%, with 4.8% also vomiting, while the lifetime prevalence of the BN diagnosis is only 0.5% (Sullivan, Bulik, & Kendler, 1998). The average prevalence of BN diagnosis amongst young females is estimated to be approximately 1% (Fairburn & Beglin, 1990; Hoek, 2002), although one study of a random community sample reported a prevalence rate of 4.1% in females aged between 18 and 30 years (Rand & Kuldau, 1992). While the majority of empirical and anecdotal reports suggest that occurrence of BN is increasing, one study has found that the symptom presentation has changed, in that dietary restraint had decreased in college students from 1993 to 2003. As this change paralleled BMI increases in the general population, it was theorised to be due to changes in comparisons between self and others (Vaught, Agras, Bryson, Crow, Halmi, & Mitchell, 2008).

Epidemiological research has indicated that the prevalence of BED in adult women ranges between 1% and 3% (Striegel-Moore & Franko, 2003; van Hoeken, Seidell, & Hoek, 2003). However, these prevalence rates may be influenced by assessment measures, whereby larger estimates are derived from self-report measures, which tend to report more false positives, possibly due to subjectivity and ambiguity surrounding the term ‘binge eating’ amongst lay people (Striegel-Moore & Franko, 2003).
There has been considerably less epidemiological research on the prevalence of ED-NOS. Despite this, most research reports that between 20% and 61% of individuals seeking outpatient treatment actually meet criteria for ED-NOS (Fairburn & Bohn, 2005). Clearly, the levels of ED-NOS are considerably higher than BN, with some prevalence estimates of ‘sub-clinical’ BN, which would fall within the ED-NOS category, being as high as 5.4% (van Hoeken et al., 2003).

Course and Outcome

BN and BED both tend to be chronic disorders, and while spontaneous remission can occur, many individuals continue to experience residual symptoms, or as mentioned above, migrate into other eating disorder diagnostic categories. The average duration of BN prior to treatment is five years, and up to ten years later, between one third and one half of individuals continue to report clinically significant eating disorder symptomatology (Fairburn & Harrison, 2003).

Less is known about BED, particularly long-term outcome, due to the recency of its’ inclusion in the DSM-IV (Keel & Herzog, 2004), however anecdotal evidence suggests that individuals experience extensive histories of binge eating, with recurring phases that tend to be triggered by stress (Fairburn & Harrison, 2003). Aside from the aforementioned studies of migration across diagnostic boundaries (Fichter & Quadflieg, 2007; Milos et al., 2005), little is known about the course and outcome of ED-NOS.

Rates of Relapse

Relapse rates for BN range from 26% to 50%, depending on the definition of ‘recovery’ used (Keel & Herzog, 2004), which is influenced by variability in follow-
up periods and abstinence stringency. For example, ‘abstinence’ can be defined as absolute abstinence from binge/purge behaviours, but also as the presence of one symptom per week over a four week period (Olmstead, Kaplan, & Rockert, 2005). The definition of ‘remission’ is particularly important, as the presence of residual symptoms have been associated with increased risk of relapse. The most conservative definition of ‘relapse’ is meeting diagnostic criteria over three months, while the least conservative could be one binge or purge episode a week (Olmstead et al., 2005).

Empirical data suggests that relapse is common. Of 140 participants who completed individual Cognitive Behaviour Therapy (CBT) for BN, 41% reported abstinence by the end of treatment, however more than half of these participants experienced relapse. After 17 weeks, 37% had resumed bingeing and purging, while an additional 16% of participants had relapsed after 12 months (Mitchell, Agras, Wilson, Halmi, Kraemer, & Crow, 2004). Other research has reported that 37.4% of participants relapsed 2.5 years after treatment, with those who had achieved partial remission at higher risk (Richard, Bauer, & Kordy, 2005). A salient finding was that none of these participants engaged in further accessible treatment, despite this treatment being free and available with the same therapist. The reasons for this were not provided, although one suggestion was treatment dissatisfaction (Mitchell et al., 2004). If this were to be the case, these findings highlight the importance of effective treatment that achieves client satisfaction, particularly if less than optimal results potentially prevent individuals from obtaining further treatment. However, as the literature has not explored this possibility, this remains speculative.

Studies of relapse in BED have shown that 28% of participants who achieved abstinence following Dialectical Behaviour Therapy (DBT) had relapsed within 6 months (Safer, Lively, Telch, & Agras, 2002), while in other research, 17.9% of
females with BED reported binges at least twice per week post-treatment, and 34% of the sample reported this frequency of binges six years later (Fichter, Quadflieg, & Gnutzmann, 1998).

In summary, eating disorders characterised by binge eating are widespread and chronic, particularly in young females, and have an enormously detrimental impact on the quality of life of individuals who suffer from them. Relapse is common, as is diagnostic migration, and treatment gains are difficult to maintain. Uncertainty and debate surround the diagnostic status of eating disorders, particularly in terms of binge eating frequency, and much remains unknown about the features, course and outcome of the most common clinical presentations. The following section will also demonstrate that etiological pathways are complex and multi-faceted, with no etiological model being conclusively supported by empirical evidence.

**Etiology and Maintenance**

Numerous etiological models have been constructed to explain how eating disorders develop and are maintained. Some of these models share overlapping features, while others consider distinct pathways. Some are based on specific theoretical approaches (e.g. cognitive-behavioural model), while others adopt a more integrated perspective (e.g. biopsychosocial models; Jacobi, Morris, & de Zwaan, 2004), or consider eating disordered behaviour to exist upon a continuum (e.g. continuity models). While theories abound, few are confirmed by empirical data. This is partly due to the difficulties inherent in conducting research where purported causal variables cannot be experimentally manipulated (Polivy & Herman, 2002). Other methodological issues include the widespread use of correlational, retrospective and cross-sectional research designs (Schmidt, 2002), and non-clinical undergraduate
samples, from which generalisations to eating-disordered populations have been extrapolated (Polivy & Herman, 2002). The plethora of models serves to highlight the complexity, individual variability and treatment difficulties which are characteristic of these disorders, leading to some suggestions that the search for a single cause may in fact be futile (Kiang & Harter, 2006; Polivy & Herman, 1993). The migration between disorders is rarely addressed by existing models (Striegel-Moore & Cachelin, 2001). An exhaustive review of etiological models and their supporting evidence is beyond the scope of this thesis, and thus the following sections will present an overview of the major etiological models for BN and BED. Models that have been selected for this review are those which provide integrated conceptualisations of etiological and maintaining factors, and provide explanations for how these factors interact to produce eating disorder symptoms, rather than identify risk factors such as early abuse (Wonderlich, Brewerton, Jocic, Dansky, & Abbott, 1997) or personality variables such as impulsivity (Wonderlich, Connolly, & Stice, 2004). Also excluded are models which have been developed through statistical procedures, such as the multidimensional model, which was constructed following factor analysis (Tobin, Johnson, Steinberg, Staats, & Dennis, 1991).

**Bulimia Nervosa**

Etiological models for BN share a number of similarities, although the relative importance of each component varies. To date, the cognitive-behavioural model is the only theory which has informed a treatment approach for BN. Table 1.1 presents a summary of the main components of etiological models of BN. Each of the major models will then be outlined.
Table 1.1

*Overview of Proposed Etiological and Maintaining Factors in Bulimia Nervosa*

<table>
<thead>
<tr>
<th>Component</th>
<th>Cognitive-behavioural Model</th>
<th>Cognitive Model</th>
<th>Integrated Model</th>
<th>Dual-pathway Model</th>
<th>Interactive Model</th>
</tr>
</thead>
<tbody>
<tr>
<td>Early experience</td>
<td>x</td>
<td>x</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Dietary Restraint</td>
<td>x</td>
<td>-</td>
<td>-</td>
<td>x</td>
<td>-</td>
</tr>
<tr>
<td>Self-esteem</td>
<td>x</td>
<td>-</td>
<td>x</td>
<td>-</td>
<td>x</td>
</tr>
<tr>
<td>Negative Affect</td>
<td>-</td>
<td>x</td>
<td>x</td>
<td>x</td>
<td>-</td>
</tr>
<tr>
<td>Sociocultural Pressure</td>
<td>-</td>
<td>-</td>
<td>x</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Perfectionism</td>
<td>x</td>
<td>-</td>
<td>x</td>
<td>-</td>
<td>x</td>
</tr>
<tr>
<td>Attachment</td>
<td>-</td>
<td>-</td>
<td>x</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Body Dissatisfaction</td>
<td>x</td>
<td>x</td>
<td>x</td>
<td>x</td>
<td>-</td>
</tr>
<tr>
<td>Perceived Weight</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>x</td>
</tr>
<tr>
<td>Body Mass</td>
<td>-</td>
<td>-</td>
<td>x</td>
<td>x</td>
<td>-</td>
</tr>
<tr>
<td>Over-Evaluation of weight/shape</td>
<td>x</td>
<td>x</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Sociotropy</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>x</td>
<td>-</td>
</tr>
<tr>
<td>Impulsivity</td>
<td>-</td>
<td>-</td>
<td>x</td>
<td>-</td>
<td>-</td>
</tr>
</tbody>
</table>

The *cognitive-behavioural model* places emphasis on the combination of low self-esteem and the importance of weight and body shape as predominant etiological factors in the development of BN (Fairburn, 2002). While low self esteem may
represent an increased vulnerability to socio-cultural pressures for thinness, attention to and over-emphasis on eating, shape and weight as a means of self-evaluation is identified as the predominant cognitive disturbance (Fairburn, 2002). In response to this over-emphasis, as well as underlying perfectionism, restrictive dietary rules are established. Minor transgressions of rules then trigger all-or-nothing reactions, such as binges and compensatory behaviours. Binges can also be triggered by negative mood or adverse events, and become negatively reinforced through their capacity to alleviate negative affect (Fairburn, 2002). Purging occurs as a means to prevent weight gain and to alleviate abdominal discomfort, providing further negative reinforcement (Fairburn, Z. Cooper, & P. J. Cooper, 1986). Ensuing emotions of disgust and self-loathing further decrease self-esteem, and perpetuate the cycle (Fairburn, 2002).

An extension of the cognitive-behavioural theory has included four additional maintaining mechanisms which may exist in sub-groups of individuals, and potentially represent obstacles to treatment (Fairburn et al., 2003). Clinical perfectionism refers to the over-evaluation and persistent striving to achieve personally demanding standards. Core low self-esteem is a pervasive negative self-evaluation beyond that which is outlined in the original model, which is less responsive to treatment. Mood intolerance refers to an inability to cope with aversive affective states, and ‘dysfunctional mood modulatory behaviour’ such as substance use of self-harm (Fairburn et al., 2003, p. 517). The addition of interpersonal difficulties addresses the interpersonal challenges which are commonly experienced. There is no explicit Interpersonal etiological model of eating disorders; this addition was influenced by research findings indicating that Interpersonal Therapy (IPT) can be effective in the treatment of eating disorders (Fairburn et al., 2003).
Structural equation modelling has been employed to test the cognitive-behavioural model. Drive for thinness was found to be the most important predictive factor - weight/shape concern, body dissatisfaction and dietary restraint did not directly predict bulimic behaviours (Byrne & McLean, 2002). Other research indicated that 37% of participants meeting BN criteria reported bingeing on average four years prior to the onset of dieting (Brewerton, Dansky, Kilpatrick & O’Neil, 2000).

The developmental phase of the cognitive model posits that early negative experiences result in negative self-beliefs, which trigger further compensatory beliefs that dieting and thinness will lead to self and other acceptance (M. J. Cooper, Wells, & Todd, 2004). Socio-cultural factors are identified as a possible context in which compensatory beliefs may develop (M. J. Cooper, 2003), but are not an integral part of this model. The maintenance phase is initiated by a triggering event (which may or may not be food or weight-related), thus activating negative beliefs, and subsequent negative affect (M. J. Cooper, 2003). Two interacting but contrasting food-related beliefs are then simultaneously activated. On the one hand, eating is perceived positively as a distraction from negative cognitions and affect, however, it also produces aversive consequences such as potential weight gain (M. J. Cooper et al, 2004). The dissonance inherent in this interplay of positive and negative beliefs leads to further distress, which is relieved through the activation of permissive beliefs about eating, and/or the perception that eating is ‘uncontrollable’, after which personal responsibility is relinquished, resulting in a binge. Once this distress is alleviated or avoided, additional negative beliefs about bingeing transpose, leading to a spiral of further negative self-appraisals and affect (such as self-loathing, guilt and disgust), for which purging becomes a compensatory behaviour (M. J. Cooper et al., 2004).
Attention to interoceptive cues such as hunger following dietary restraint, and the perception of fullness following a binge, can also trigger binge and purge behaviours, respectively (M. J. Cooper et al., 2004).

In support of the cognitive model, research has found that participants with BN have higher levels of maladaptive core beliefs than control participants (Leung, Waller & Thomas, 1999). Experimental research using the Stroop colour-naming paradigm has repeatedly demonstrated that participants with BN selectively process information related to eating, weight and shape (Fairburn, P. J. Cooper, M. J. Cooper, McKenna, & Anastasiades, 1991). However, there are currently no known empirical findings to directly support the relationship between early experiences and the development of core beliefs, nor that dichotomous thoughts and beliefs about food would result in bingeing (M. J. Cooper, 2005).

The integrated (sociocultural) model considers two causal pathways in the development of eating disorders: the awareness of sociocultural values of appearance, and attachment processes (Kiang & Harter, 2006). Via the first pathway, a greater awareness of sociocultural values that idealise thinness, transmitted through family, media and peer influences (Stice, 1994), would lead to decreased satisfaction with appearance, thus resulting in low self-esteem, dietary restriction in an attempt to attain the thin ideal, and hence the binge-purge cycle. The second pathway hypothesises that an insecure attachment style would lead to psychological symptoms associated with eating disorders, such as ineffectiveness, interpersonal distrust, and perfectionism. These symptoms in turn would contribute to low self-esteem and then behavioural symptoms. Path analysis has revealed significant correlations, in the hypothesised directions, between all variables, with slightly stronger support for the socio-cultural pathway. However, this analysis did not distinguish between anorexic and bulimic
symptoms, and correlation cannot establish temporal relationships (Kiang & Harter, 2006).

The dual-pathway model focuses on the roles of affect regulation and dietary restraint (Stice, Shaw, & Nemeroff, 1998). Dietary restraint stems from body dissatisfaction, and binges result from the disinhibition of eating due to the ensuing failure to restrain. Body dissatisfaction itself stems from increased body mass and social pressure, and causes negative affect, which is further amplified in the presence of increased body mass. Dietary restraint and failure to restrain also produce negative affect, and binge eating becomes an affect regulation strategy, both to distract and self-soothe. Compensatory behaviours represent another affect regulation strategy and a means of preventing weight gain (Stice et al., 1998).

Sociotropy has been recently proposed as an addition to the dual pathway model (Duemm, Adams & Keating, 2003). Sociotropy refers to dependency on others approval, and the desire to maintain personal attachments and avoid social rejection. This is an explanation for the vulnerability to social pressure for thinness. Sociotropy may also be implicated in the role of interpersonal stress as a binge precipitant (Duemm et al., 2003).

A nine month longitudinal study, found that both the negative affect and restraint pathways between body dissatisfaction were significant, and accounted for a third of the variance in bulimic symptoms (Stice et al., 1998). However, other research has found that after following stringent analysis, restraint did not increase the likelihood of later bulimic symptoms, and there was not a temporal relationship between negative affect and symptoms (Leon, Fulkerson, Perry, & Early-Zald, 1995; Stice, 1998).
The interactive model considers the roles of perfectionism and self-esteem (Vohs, Bardone-Cone, Joiner, Abramson & Heatherton, 1999; Vohs et al., 2001). Perfectionism has been defined as the desire and relentless striving to achieve ambitious and rigorous standards, which may be personal or socially prescribed (Garner, 2004; Vohs et al., 1999, 2001). This model suggests that perfectionists with low self-esteem with perceptions of being overweight would be more inclined to regard unattained goals as reflective of inadequacy, resulting in maladaptive strategies, such as strict dietary restraint and purging (Bardone-Cone, Abramson, Vohs, Heatherton & Joiner, 2006).

Results of hierarchical regression analysis revealed a significant three-way interaction between perfectionism, perceived weight status and self-esteem, in predicting the development of bulimic symptoms (Vohs et al., 1999). An independent group of researchers failed to replicate these findings (Shaw, Stice & Springer, 2004). While there was a significant main effect for body dissatisfaction on bulimic symptoms, the main effects for self-esteem and perfectionism were not significant, nor did the interaction between perfectionism and body dissatisfaction significantly predict bulimic symptoms (Shaw et al., 2004).

The continuity model does not outline particular relationships between potential etiological factors, but instead posits that bulimic symptoms are severe and extreme manifestations of weight and shape concerns that are shared by many women, and that there is a proportionate relationship between the degree of eating disorder risk factors, such as body dissatisfaction and restrained eating, and the extent of subsequent bulimic symptoms (Gleaves, Lowe, Snow, Green & Murphy-Ebernez, 2000). By contrast, the discontinuity model suggests that bulimia only develops in the presence of other predisposing factors, such as impulsivity (Lowe et al., 1996).
Mixed support has been found for both models. On one hand, research has found an increase in weight/restraint concerns for current dieters versus non-dieting restrained eaters, suggestive of the continuity model (Lowe et al., 1996). However there was a non-linear trend for binge eating, whereby bulimic participants evidenced higher binge eating behaviours than current dieters, or non-dieting restrained eaters, which is more suggestive of the discontinuity model (Lowe et al., 1996). Further investigation used taxometric procedures to test both models on a sample of bulimic and non-clinical participants, and found greater support for a discontinuity model (Gleaves et al., 2000).

Thus, despite the numerous etiological models, identification of risk factors, and empirical attempts to provide validation, no consensus as yet emerged to conclusively explain the development of eating disorders (Kiang & Harter, 2006; Polivy & Herman, 2002), nor to provide a parsimonious integration of existing theories.

_Binge Eating Disorder_

Just as the preceding section has highlighted an absence of definitive etiological pathways for BN, the BED literature also lacks integration; although a similar proliferation of competing etiological models has not yet emerged due to the relative infancy of BED as a diagnostic entity. Early theories focused on similar pathways to BN, such as dietary restraint leading to disinhibition, however current psychological opinion is centred on the roles of negative affect and poor affect regulation strategies (Heatherton & Baumeister, 1991; Kristeller, Baer, & Quillian-Wolever, 2006). The literature has also addressed heritability (Bulik, Sullivan, & Kendler, 2003) and biological factors such as body mass. Table 1.2 presents a
summary of the main components of etiological models of BED. Each of these models will then be outlined.

Table 1.2

Overview of Proposed Etiological and Maintaining Factors in Binge Eating Disorder

<table>
<thead>
<tr>
<th>Component</th>
<th>Dietary Restraint</th>
<th>Negative Affect</th>
<th>Biological processes</th>
<th>Interoceptive Awareness</th>
<th>Cognitive Distortions</th>
<th>Narrowed Attention</th>
</tr>
</thead>
<tbody>
<tr>
<td>Restraint Theory</td>
<td>x</td>
<td>x</td>
<td>x</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Escape from Self-Awareness</td>
<td>-</td>
<td>x</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>x</td>
</tr>
<tr>
<td>Masking Hypotheses</td>
<td>-</td>
<td>x</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Trade-off Theory</td>
<td>-</td>
<td>x</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Dysregulation Model</td>
<td>x</td>
<td>x</td>
<td>-</td>
<td>x</td>
<td>x</td>
<td>-</td>
</tr>
</tbody>
</table>

Restraint theory is based on early research which proposed a genetic weight ‘set point’, which was thought to be relatively higher in obese individuals. Individuals who aimed to reach a weight below their set-point needed to work against underlying biological processes. Restraint was employed but subsequently undermined due to the physical and psychological distress experienced during deprivation, eventually leading to the abstinence violation effect and disinhibited eating (Howard & Krug Porzelius, 1999; Stein et al., 2007). While research does support some role for dietary restraint in BED, a significant proportion of individuals with BED report that bingeing precedes the onset of dieting, which is inconsistent with this model. Most estimates of
binge-first rates range from 35% to 55% of individuals, although a recent study reported that binge-first occurred in 81% of participants (Manwaring et al., 2006).

Three theories highlight the primary role of negative affect in BED: escape from self-awareness theory, the masking hypotheses and the trade-off theory. The *escape from self-awareness* theory suggests that binge eating serves as a distraction from other negative emotions by narrowing attention to food and eating-related stimuli (Heatherton & Baumeister, 1991). This model posits that binges are precipitated by the presence of negative affect or an unwelcome emotional experience (Heatherton & Baumeister, 1991; Wiser & Telch, 1999), and that binges temporarily provide both a distraction and a decrease in negative affect. Anecdotal descriptions of pleasant feelings of rebellion prior to, or during a binge, suggest that they may counterbalance whatever negative/painful emotions may be present (Wiser & Telch, 1999). This is supported by findings which examined emotional experiences before, during and after bingeing. Results showed that BED participants reported experiencing negative affect prior to and following the binge, but decreased negative affect during the binge (Deaver, Miltenberger, Smyth, Meidinger, & Crosby, 2003). However, other research using Ecological Momentary Assessment (EMA) has found that although negative mood was significantly higher on binge versus non-binge days, there were no reliable changes in mood post-binge (Wegner, Smyth, Crosby, Wittrock, Wonderlich, & Mitchell, 2002).

The *masking hypothesis* suggests that binges provide a more acceptable focus for negative affect, allowing it to be attributed to the binge, rather than aspects of life which may seem more aversive or less controllable (Polivy & Herman, 1999), whereas the *trade-off theory* maintains that guilt following the binge is preferable to more aversive states which may have preceded the binge (Kenardy et al., 1996).
Partial support has been provided for the masking hypothesis, in that after a failure-inducing task which was followed by the consumption of ice-cream, restrained eaters were more likely than non-restrained eaters to attribute negative affect to the ice-cream than task failure (Polivy & Herman, 1999).

A more recent etiological model incorporates key aspects of the restraint and affect regulation models to explain the development of binge eating (Kristeller et al., 2006). The dysregulation model posits that chronic dieting increases vulnerability to a variety of binge triggers, including hunger, cognitive distortions and negative affect, although there may be considerable individual variability in terms of the relative contribution of these precipitants. Ongoing dietary restraint can lead to feelings of frustration, deprivation and dysphoria, for which the binge can provide temporary relief. The breaking of dietary rules contributes to the abstinence violation effect and a binge, leading to further negative self-evaluation and restraint. Binge eating is also compounded by physiological components such as a lack of interoceptive awareness (Kristeller et al., 2006).

The dysregulation model has informed Mindfulness-based Eating Awareness Training (MB-EAT), and while this treatment has received some empirical support, the relationships between components of this model have not been directly tested. Indirect support has been derived from a prospective study using EMA technology, which found that increases in negative affect, hunger, and restraint were present prior to the binge, with significantly greater negative affect post-binge (Stein et al., 2007).

Thus, while the clear etiological pathways with conclusive empirical support have yet to emerge for BED, opinion converges on the centrality of negative affect, and maladaptive strategies for managing it, as a significant etiological and maintaining factor.
Etiological Uncertainty: A Transdiagnostic Solution?

The above review of etiological models indicates that there is no established pathway for the onset or maintenance of BN or BED that is conclusively supported by empirical evidence. Indeed, it is possible that no singular etiological pathway may exist, and theoretical frameworks - and hence, treatment approaches, will need to be informed by multiple determinants and risk factors (Brownley, Berkman, Sedway, Lohr, & Bulik, 2007).

Just as a transdiagnostic solution has been proposed in response to debate surrounding diagnostic boundaries (Fairburn et al., 2003), a parallel approach to etiological and maintenance processes may have considerable utility in terms of understanding the underlying processes of eating disorders (Harvey, Watkins, Mansell, & Shafran, 2004). This transdiagnostic approach identifies common underlying cognitive and behavioural processes across a spectrum of disorders, rather than discrete diagnostic categories (Harvey et al., 2004). These proposed transdiagnostic processes include attention, memory, reasoning, thought/metacognition, and escape/avoidance behavioural tendencies. In this section, these processes will be outlined, and related to eating disorders. It will then be shown how the previously reviewed etiological models can be accommodated within this framework.

Attention

Attention includes selective and self-focused attention. Selective attention refers to a filtering of attention toward certain stimuli, often that which is personally significant, to the exclusion of others. Sustained filtering can result in an attentional bias; a more systematic tendency to attend to a particular type of stimuli (Harvey et
Self-focused attention refers to increased awareness of internal, self-referent stimuli (such as physical sensations, thoughts, and emotional states), as distinct from external stimuli. This attentional process has often been associated with negative affect and is more likely to be maladaptive when it is sustained, excessive and rigid (Harvey et al., 2004).

Evidence for the role of selective attention in eating disorders comes from experimental research which shows that participants with eating disorder symptomatology demonstrate attentional biases to stimuli associated with food, weight and shape concerns, along with social isolation/rejection, and threats to self-esteem (Harvey et al., 2004). In research using eye movement analysis whilst viewing photos of their own bodies, participants with eating disorder symptoms directed significantly more visual attention to self-identified unattractive body parts versus self-identified attractive body parts. In contrast, attention was directed to attractive body parts of others more often than to others’ unattractive body parts. Control participants demonstrated an opposite pattern of findings (Jansen, Nederkoorn, & Mulkens, 2005). In a study using visual probe detection to investigate attentional biases towards particular words, participants with eating disorders directed attention away from positive body shape/weight-related words, and towards negative body/weight-related words, versus emotionally-valenced or control words (Rieger et al., 1996). Results from a study utilising the Stroop test found an attentional bias toward words related to self-criticism and threats to personal control, for bulimic versus comparison participants (McManus, Waller, & Chadwick, 1996). Research using a dot-probe task, which is considered to be a stronger methodological test of attentional bias, examined the impact of fasting on attentional bias, in participants with low and high scores on the Eating Disorder Inventory (EDI). Results showed that
while both groups of participants demonstrated an attentional bias toward high calorie eating-related words after fasting, only the high-EDI participants showed an attentional bias toward low-calorie foods when not fasting (Placanica, Faunce, & Soames Job, 2002). Recent research has also shown that attentional biases in eating disordered participants decreased following cognitive-behavioural treatment (Shafran, Lee, Cooper, Palmer, & Fairburn, 2008).

Self-focused attention toward internal physiological states, such as hunger and satiety, and attention toward negative affect, are particularly salient for individuals with eating disorders. Attentional biases in the presence of physiological states such as hunger are not unusual (Mauler, Hamm, Weike, & Tuschen-Caffier, 2006). Indeed, research from a non-clinical sample using a dot-probe task show that attention to an internal physiological stimuli, such as hunger, results in an attentional bias toward external stimuli consistent with that state (food-related versus non food-related words; Mogg, Bradley, Hyare, & Lee, 1998). Indirect support for attention to negative affect comes from the body of research which points to heightened negative affect prior to a binge (Stein et al., 2007). Most etiological models of BN and BED also highlight the role of self-focused attention toward negative affect, and regard binge eating to be a method to distract from, or alleviate this affect (Deaver et al., 2003; Kenardy et al., 1996; Wegner et al., 2002). Research has shown that for female participants with bulimic symptoms, negative affect and dissociation increased the likelihood of binge eating, rather than a meal/snack (Engelberg, Steiger, Gauvin, & Wonderlich, 2007). Women with BED and BN reported significantly greater negative affect prior to a binge compared with levels of negative affect in non-eating disordered women prior to a normal meal (Hilbert & Tuschen-Caffier, 2007), while binge-eaters have reported a greater degree of negative affect prior to a binge than a normal meal (Deaver et al.,
However, while there is considerable evidence to demonstrate the presence of negative affect prior to a binge, research has not yet demonstrated the existence of an attentional bias toward negative affect.

**Memory**

Memory processes appear to be less relevant for the development and maintenance of eating disorders than for disorders such as PTSD, but some experimental studies have demonstrated a selective memory bias for food related words in eating-disordered versus non-eating disordered participants (Harvey et al., 2004), although this could also be explained by selective attention toward these stimuli. Etiological models also give less weight to the role of memory processes in the development and maintenance of eating disorders, therefore memory processes will not be included in further discussion.

**Elaborative Processing: Thinking and Reasoning**

Thinking as a transdiagnostic process encompasses three aspects: negative thought content, metacognitive processes such as worry, rumination and thought suppression, and metacognitive regulation, which refers to attempts to monitor and control cognition, such as allocation of attention, planning, and discrepancy based processing (Harvey et al., 2004). Reasoning processes refer to interpretations, expectations, and attributions, which can lead to cognitive distortions emphasised in cognitive theories and treatments (Harvey et al., 2004). These processes often result from attentional biases, whereby selective attention to particular stimuli leads to reasoning, worry, or ruminating regarding that stimuli (Harvey et al., 2004). Thus, in
relation to eating disorders, selective attention to weight and shape cues may result in the over-evaluation and preoccupation with shape and weight.

These thinking, metacognitive and reasoning processes have been collectively referred to elsewhere as *elaborative processing*. Elaborative processing is characterised by an over-engagement with cognitive processes and content, along with other facets of experience, such as affective and physiological sensations, although the proposed transdiagnostic processes focus more on cognitive and behavioural components (Bishop et al., 2004; Harvey et al., 2004). In relation to cognition, it involves becoming entangled with cognitive processes such as rumination and worry, and an over-identification with thought content; believing thoughts to be accurate representations of reality that require a behavioural response (Bishop et al., 2004; Kabat-Zinn, 2003; Teasdale, Segal, & Williams, 1994). In terms of affect and physiological sensations, elaborative processing involves interpretations, evaluations and reactions to this experience (A.M. Hayes & Feldman, 2004). This could mean that physiological sensations of hunger or satiety could be evaluated negatively, resulting in behavioural responses to alleviate them. Affective elaborative processing may involve identification with and evaluations of affect as negative, and interpretation of it lasting forever, or being overwhelming. Once negative affect is selectively attended to, it may be interpreted as being aversive during the elaborative processing phase, resulting in behaviours to escape from the experience, which shall be explained further.

In relation to eating disorders, an important facet of elaborative processing is discrepancy-based processing. This refers to ongoing comparisons between one’s present state and an ideal or preferred state, prompting subsequent attempts to reduce this discrepancy (Bishop et al., 2004; Teasdale, Segal, & Williams, 2003). This
process may underlie the low self-esteem and perfectionism which is included in some etiological models (Fairburn, 2002; Kiang & Harter, 2006; Stice, 1994; Vohs et al., 1999). Discrepancies between an individual’s current body shape or weight and their ideal would result in negative self-evaluations (Heatherton & Baumeister, 1991), and striving to achieve ideal standards (Gleaves et al., 2000). Heatherton and Baumeister (1991) have suggested that the desire to escape from self-awareness through binge eating begins with this comparison process. This style of processing would serve to perpetuate aforementioned selective and self-focused attentional biases, due the continued monitoring of the perceived discrepancy, and progress toward the ideal. Elaborative processing may also be implicated in the post-binge period, which is characterised by rumination, self-judgements and critical thought processes, which perpetuate distress and existing negative self-evaluations, subsequently leading to behavioural attempts to alleviate this.

*Experiential Avoidance: Escape and Safety Behaviours*

*Escape* and avoidance behaviours are those whereby an individual attempts to prematurely leave, distract their attention, or not experience a particularly situation or stimulus. A related behaviour is *safety seeking*, which are strategies designed to avoid a feared outcome (Harvey et al., 2004). Although they are immediately reinforcing, these behaviours all serve to perpetuate psychopathology through exposure prevention, and restriction of activities and interests, which serves to reduce the availability of a range of external stimuli, thus, exacerbating self-focused and selective attentional processes (Harvey et al., 2004).

This is conceptualised elsewhere as being within the realm of *experiential avoidance*; the non-willingness to remain in contact with a particular experience, and
subsequent attempts to change, suppress or avoid the experience - despite these attempts themselves causing harm (S. C. Hayes, Wilson, Gifford, Follette, & Strosahl, 1996). This is consistent with models which conceptualise binge eating as a strategy to alleviate negative affect and/or escape burdensome self-awareness, despite its potential to lead to weight gain, and subsequent negative self-focus (Cooper, 2003; Duemm et al., 2003; Fairburn, 2002; Heatherton & Baumeister, 1991; Kenardy et al., 1996; Kristeller et al., 2006; Polivy & Herman, 1999; Stice, 1994; Vohs et al., 1999).

Experiential avoidance is not restricted to the domain of eating disorders; it has been conceptualised as being a functionally important factor in the etiology and maintenance of several disorders, including substance use, obsessive-compulsive disorder, panic disorder with agoraphobia, borderline personality disorder (S. C. Hayes et al., 1996), and deliberate self-harm (Chapman, Gratz, & Brown, 2006).

Along with attempts to avoid the present experience, experiential avoidance may be used to prevent future aversive experiences (Forsyth, Eifert & Barrios, 2006). Compensatory behaviours and dietary restraint may thus be conceptualised as safety seeking behaviours to prevent future weight gain (Fairburn, 2002; Cooper, 2003; Duemm et al., 2003; Stice, 1994; Vohs et al., 1999), which temporarily relieve negative affect, as renewed attempts to regain control.

Elaborative processing has been hypothesised as being a function of experiential avoidance (Cribb, Moulds, & Carter, 2006), and empirical evidence which highlights this link is beginning to emerge. In a carbon-dioxide inhalation task with a non-clinical sample, participants who were high in experiential avoidance (measured by the Acceptance and Avoidance Questionnaire) reported greater cognitive-affective distress compared to low-experiential avoidance participants, although there were no significant group differences in heart rate (Feldner, Zvolensky,
Eifert, & Spira, 2003). These findings were interpreted as the tendency for individuals high in EA to experience greater distress as a consequence of their perception of an experience, rather than their actual physiological experience (Feldner et al., 2003).

Participants in a non-clinical sample with increased levels of dysphoria were found to be higher in both experiential avoidance and rumination. High-experiential avoidance also significantly predicted depression, beyond the variance accounted for by anxiety (Cribb et al., 2006). A significant correlation between behavioural avoidance and rumination has also been found in participants reporting depression, independent of anxiety (Moulds, Kandris, Starr, & Wong, 2007).

As mentioned, all of the components of previously reviewed etiological models can be accommodated within this transdiagnostic framework. This transdiagnostic conceptualisation provides the first known integration and synthesis of the etiological models of BN and BED. Table 1.3 presents a summary of the comparison between these transdiagnostic process, and components of these models.
<table>
<thead>
<tr>
<th>Model</th>
<th>Attentional Processes</th>
<th>Elaborative Processing</th>
<th>Experiential Avoidance</th>
</tr>
</thead>
<tbody>
<tr>
<td>BN</td>
<td>Attentional biases toward food, shape/weight cues; Self-focused attention to negative affect due to low self-esteem</td>
<td>Over-evaluation of shape/weight. Discrepancy-based processing Negative evaluation of self; low self-esteem; Negative affect evaluated as intolerable; Body dissatisfaction</td>
<td>Dietary restraint: safety behaviour to reduce discrepancy, prevent weight gain &amp; ensuing negative affect. Disinhibition following restraint. Purge: safety behaviour to prevent weight gain</td>
</tr>
<tr>
<td>Cognitive-behavioural model</td>
<td>As above; Attention to interoceptive cues. Negative affect due to dissonance from beliefs</td>
<td>Dichotomous beliefs (permissive&amp; control) regarding eating; beliefs that eating will alleviate negative affect</td>
<td>Binge/purge: as above</td>
</tr>
<tr>
<td>(Fairburn et al., 1986; Fairburn 2002)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Cognitive Model</td>
<td>Selective attention to socio-cultural values that idealise thinness; Self-focused discrepancy-based processing; attention to negative affect; Attentional biases related to body dissatisfaction</td>
<td>Hyper-internalisation of thin ideal, resulting in body dissatisfaction, low self-esteem</td>
<td>Dietary restraint: safety behaviour to reduce discrepancy, prevent weight gain and associated negative affect. Binge/purge: as above</td>
</tr>
<tr>
<td>(Cooper, 2003; Cooper et al., 2004)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Socio-cultural (integrated) model</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>(Kiang &amp; Harter, 2006; Stice, 1994)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Dual pathway model</td>
<td>Attentional biases toward body mass, social pressure, interpersonal threats; Self-focused attention to negative affect</td>
<td>Body dissatisfaction; Discrepancy-based processing; Sociotropy</td>
<td>Dietary restraint: as above; Binge: affect regulation &amp; distraction. Purge: as above</td>
</tr>
<tr>
<td>(Duemm et al., 2003; Stice et al., 1998)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Model</td>
<td>Attentional Processes</td>
<td>Elaborative Processing</td>
<td>Experiential Avoidance</td>
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<tr>
<td>Interactive Model</td>
<td>Attentional biases towards shape/weight; Self-focused attention to negative affect</td>
<td>Perception of being overweight; Perfectionism, leading to discrepancy-based processing; low self-esteem</td>
<td>Binge: as above</td>
</tr>
<tr>
<td>(Vohs et al, 1999; 2001)</td>
<td></td>
<td></td>
<td>Purge: as above</td>
</tr>
<tr>
<td><strong>BED</strong></td>
<td></td>
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</tr>
<tr>
<td>Escape from Self-awareness Theory</td>
<td>Attentional biases toward food &amp; eating-related stimuli; Self-focused attention to negative affect</td>
<td>Evaluation of negative affect as aversive</td>
<td>Binge: distraction and alleviation from negative affect</td>
</tr>
<tr>
<td>(Heatherton &amp; Baumeister, 1991)</td>
<td></td>
<td></td>
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</tr>
<tr>
<td>Masking Hypothesis</td>
<td>Self-focused attention to negative affect</td>
<td>Evaluation of aspects of life as aversive or uncontrollable</td>
<td>Binge: distraction from aversive/uncontrollable experiences</td>
</tr>
<tr>
<td>(Polivy &amp; Herman, 1999)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Trade-off Theory</td>
<td>Self-focused attention to negative affect</td>
<td>Evaluation of negative affect as aversive</td>
<td>Binge: post-binge guilt less aversive than other aversive states</td>
</tr>
<tr>
<td>(Kenardy et al., 1996)</td>
<td></td>
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</tr>
<tr>
<td>Dysregulation Model</td>
<td>Attentional biases toward interoceptive/food cues; self-focused attention to negative affect</td>
<td>Evaluation of negative affect as aversive; Negative self-evaluation</td>
<td>Binge: disinhibition following restraint, alleviation of negative affect</td>
</tr>
<tr>
<td>(Kristeller et al., 2006)</td>
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<td></td>
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</tr>
</tbody>
</table>

*Note:* BN = bulimia nervosa; BED = binge eating disorder
This conceptualisation is congruent with Fairburn and colleagues’ (2003) proposal of a transdiagnostic solution, based on the similarities in underlying factors, and provides an explanation for research findings which reveal consistent similarities in symptom profiles and psychopathology between diagnostic groups (Barry et al., 2003; Bulik et al., 2000; Le Grange et al., 2006; Turner & Bryant-Waugh, 2004). These similarities are posited to be due to parallel underlying processes. Based on these transdiagnostic processes, the following section introduces a Transdiagnostic Process Model of Binge Eating, formulated to explain the development and maintenance of both BN and BED from a transdiagnostic perspective.

*Transdiagnostic Process Model of Binge Eating*

This model is intended to provide a parsimonious explanation for the development and maintenance of both BN and BED, currently absent from the eating disorders literature. It provides an integration of the major components of diverse models, and is presented in Figure 1.
Figure 1. The Transdiagnostic Process Model of Binge Eating.

The triggering experience may be food or shape/weight related, such as a media exposure, an interpersonal trigger, the awareness of an affective state, or even the awareness of the self (Heatherton & Baumesiter, 1991). Once such an experience is attended to, it is subject to attentional biases such as self-focused attention to internal affective or physiological states, or selective attention to food or shape-related
cues (Harvey et al., 2004). *Primary elaborative processing* evaluates this experience as being somehow aversive, and interacts with attentional processes (Harvey et al., 2004); as more attention is selectively focused on an aspect of experience, it is subjected to further elaborative processing, and attention thus becomes more rigidly fixed on that evaluation. *Experiential Avoidance* is initiated via the desire, motivation or impulse to suppress, distract or somehow change the current experience, or aspects of it (Harvey et al., 2004; Hayes et al., 1996). This results in *secondary elaborative processing* such as rumination, worry, further negative evaluation of the experience, judgements or discrepancy-based processing. *Safety* or *escape* behaviours are then initiated (Harvey et al., 2004); two separate, but not necessarily independent pathways which lead to bulimic and binge eating symptomatology.

**Bulimia Nervosa: A Transdiagnostic Explanation**

In the absence of self-acceptance (Fairburn, 2002; Stice, 1994; Vohs et al., 1999), external sources of acceptance are sought, in the form of sociocultural ideals regarding appearance (Kiang & Harter, 2006; Stice, 1994). Identification of an external ideal may in itself temporarily alleviate affect related to negative self-evaluation, as it provides a concrete goal to aim towards. Heatherton and Baumeister (1991) suggest that the desire to escape from self-awareness begins with this comparison process, whether it be a comparison with internal standards, or those held by salient reference groups.

Triggering experiences could be interpersonal events, stressors, or cues that bring awareness to the perceived discrepancy between the present self and the ideal self. Attentional biases and primary elaborative processing interact to render this experience as aversive (Harvey et al., 2004). Elaborative processing would result in
interpersonal events being interpreted as a threat (Duemm et al., 2003); discrepancy awareness would trigger body dissatisfaction (Duemm et al., 2003; Fairburn, 2002; Kiang & Harter, 2006; Vohs et al., 1999) and other stressors would evoke negative affect. The evaluation of failure or shortcoming in relation to any goal may create negative affect (Heatherton & Baumeister, 1991). This accounts for the capacity of external stressors unrelated to weight/shape to trigger a binge episode.

Negative affect is evaluated as being intolerable or aversive, activating experiential avoidance by both escape and safety pathways. Via the escape pathway, the binge experience provides relief from negative affect (Duemm et al., 2003; Kiang & Harter, 2006; Vohs et al., 1999). During the binge, there is a further disruption to attentional processes, characterised by lack of interoceptive and taste awareness (Fairburn, 2002), which may contribute to the perception of ‘loss of control’ (Beglin & Fairburn, 1992). Safety strategies are attempts to change or modify aspects of the experience (dietary restraint and weight loss), thereby reducing present and future negative affect (Forsyth et al., 2006; Harvey et al., 2004). Thus, secondary elaborative processing occurs, through the vigilance of dietary restraint, pursuit of perfectionistic goals, preoccupation with food and weight, and the over-evaluation of shape and weight (Cooper, 2003; Duemm et al., 2003; Fairburn, 2002; Kiang & Harter, 2006; Vohs et al., 1999). When this discrepancy is reduced, or strategies to reduce the discrepancy are activated, the mind temporarily disengages from discrepancy-based processing, and a period of relative well-being will follow, which negatively reinforces this process until another discrepancy is perceived, and the process is reactivated (Bishop et al., 2004). Perceived discrepancies also reinforce that the present self is unacceptable, perpetuating this cycle.
Compensatory behaviours represent further experiential avoidance strategies to reduce the perceived discrepancy following a binge (safety), and alleviate negative affect (escape) that ensues from abdominal discomfort (Fairburn, 2002), self-focused attention and elaborative processing (Harvey et al., 2004) about the consequences of the binge and associated emotions.

*Binge Eating Disorder: A Transdiagnostic Explanation*

Responses to the triggering experience parallel those in BN. Primary elaborative processing and attentional processes interact to focus on and evaluate the experience of negative affect (Harvey et al., 2004; Heatherton & Baumeister, 1991). These may include ruminative thoughts of how bad the event is, negative self-judgments and the self-focus evaluation of affect as being overwhelming and intolerable. Whereas the experiential avoidance strategies in BN are a combination of safety and escape, the primary strategy in BED is escape (Harvey et al., 2004), through the avoidance, suppression or distraction from the experience, by binge eating. This is then negatively reinforcing, as it distracts from or alleviates negative affect (Heatherton & Baumeister, 1991; Kenardy et al., 1996; Kristeller et al., 2006; Polivy & Herman, 1999), and again disrupts attentional processes through reduced interoceptive awareness (Kristeller et al., 2006). Further elaborative processing occurs in the post-binge period, which is again characterised by rumination, judgemental and critical thought processes, thus perpetuating distress and negative self-evaluations (Heatherton & Baumeister, 1991; Kenardy et al., 1996; Kristeller et al., 2006; Polivy & Herman, 1999).
Implications of the Transdiagnostic Process Model of Binge Eating

As this model has been developed for the purposes of this research project, empirical testing of pathways and relationships between components has yet to be undertaken. Although specific experiential avoidance pathways have been delineated, it is possible that there may be considerable individual variability in terms of which pathways predominate. This may help to explain research findings of differences in dieting versus bingeing onset (Brewerton et al., 2000); initial symptom presentation may in fact depend on which experiential avoidance strategy is first employed. There may also be individual variability in the degree to which particular transdiagnostic processes manifest and contribute to pathology. These processes are hypothesised to exist on a continuum with normal functioning, thus individuals may exhibit a particular process on any point of this continuum (Harvey et al., 2004); this may account for sub-clinical, ‘mixed’ and ED-NOS presentations, and migration across diagnostic boundaries (Fairburn et al., 2003).

This model can also inform treatment approaches; given that it addresses transdiagnostic processes, the treatment can administered across diagnostic boundaries, and include participants with BN, BED and ED-NOS. To date, CBT and IPT have been the most widely used treatment approaches for eating disorders (Mitchell, Agras, & Wonderlich, 2006). However, neither of these approaches focuses on all transdiagnostic processes, and treatments that do explicitly target these processes have been hypothesised as being potentially more effective and efficient (Harvey et al., 2004). IPT emphasises interpersonal triggers and managing affect (Weissman, Markoitz & Klerman, 2000, while CBT treatments places relatively more focus on symptom alleviation by restructuring cognitive content (Fairburn, 1997), and less on reducing experiential avoidance of negative affect. This focus on cognitive
Content has been given as a reason to why CBT may not be effective in all cases (Leung, Waller & Thomas, 2000). IPT has been hypothesised to be less effective for participants’ whose concerns are more related to eating, weight and shape issues (Nevonen & Broberg, 2006). The following section will review the BN and BED treatment literature, and demonstrate that no current treatment approach has been conclusively shown to be effective in treating these disorders.

*Treatment Outcome Research for Eating Disorders*

The treatment outcome research tends to report findings in terms of improvements on *primary* and *secondary* outcome variables. Primary variables are the behavioural symptoms of the disorders (binge eating and compensatory behaviours) as defined by the DSM diagnostic criteria. Secondary outcome variables refer to the psychosocial factors directly associated with the disorders, such as eating restraint, concern with eating, shape and weight, body dissatisfaction, and other psychological symptoms such as depression, anxiety, perfectionism and self-esteem (J. R. Shapiro et al., 2007). In BED research, secondary outcome variables may also include weight loss, due to obesity being common in this population (Brownley, Berkman, Sedway, Lohr, & Bulik, 2007).

Treatment is generally considered ‘effective’ if primary outcome variables are significantly reduced or alleviated (J. R. Shapiro et al., 2007). Outcome rates are reported in terms of mean reductions of the frequency of binge/purge episodes, and the proportion of participants who achieve post-treatment abstinence from these behaviours. Treatment studies of BED often report changes in binge days rather than discrete episodes, the latter being difficult to differentiate due to the nature of binges
at times lasting all day or several hours, and binge episodes not being ‘punctuated’ by purging as it often is with BN (Rossiter, Agras, Telch, & Bruce, 1992; Wilson, 1987).

An important issue has been the definition of a binge. While the DSM criteria specifying that a ‘large amount of food’ must be consumed for BN and BED, converging opinions suggest that the criteria of ‘loss of control’ is more valid in determining the presence of a binge (Beglin & Fairburn, 1992; Niego, Pratt, & Agras, 1997). The Eating Disorder Examination (EDE) semi-structured clinical interview distinguishes between an Objective Binge Episode (OBE) which meets the DSM-IV criteria, and a Subjective Binge Episode (SBE), in which a loss of control is experienced during the consumption of a comparatively smaller quantity of food, which is still perceived as excessive by the individual (Fairburn & Cooper, 1993). According to the EDE, recurrent SBEs do not meet diagnostic criteria for a binge. This is a point of contention within the literature. One study found no differences in baseline measures of psychopathology for women with BED who reported different rates of OBEs versus SBEs, and that different rates of either did not determine which participants responded best to treatment (Niego et al., 1997). Further, the total number of binge episodes was more likely to predict psychopathology than differences between rates of OBEs versus SBEs (Pratt, Niego, & Agras, 1998). This is supported by findings from a community sample of young women, who regarded the sense of loss of control, rather than quantity of food, as the definition of a ‘binge’ (Beglin & Fairburn, 1992).

Assessment methods of the frequency of binge eating vary across studies; some research has used a 7 day-diary recall method (Telch, Agras, Rossiter, Wilfley, & Kenardy, 1990; Wilfley et al., 1993), while others have required participants to recall over a longer period of time – as long as 28 days on the EDE (Dingemans,
Spinhoven, & van Furth, 2007; Telch et al., 2000, 2001; Wilfely et al., 2002). While self-report is deemed to be a less reliable method due to definitional discrepancies of binge eating between respondents (Fairburn & Cooper, 1993), comparisons of both methods have revealed a significant correlation between the EDE and recall method in terms of measuring changes in bingeing (Sysko, Walsh, & Fairburn, 2005). While some research has used the Binge Eating Scale (BES) which is a measure of binge severity (Smith, Shelley, Leaghigh, & Vanleit, 2006), or the Sterling Eating Disorder Scales (SEDS; Openshaw, Waller, & Sperlinger, 2004), they do not provide data on the number of binge or purge episodes.

An additional methodological issue is that most research does not assess the frequency of non-purging compensatory behaviours (Agras et al., 2000), and some do not include laxative use as a purging behaviour (Olmstead, Kaplan, & Rockert, 1994). Rates of purging behaviour, particularly vomiting, have frequently been found to be an important predictor of relapse (Agras et al., 2000; Olmstead et al., 1994), however, little is known about non-purging compensatory behaviours such as excessive exercise and fasting.

While most treatment outcome studies report findings in terms of statistical significance of pre to post treatment changes, consideration of clinical significance is becoming increasingly more widespread (Lundgren, Danoff-Burg, & Anderson, 2004). This is particularly important, as it is possible for outcome studies to report statistically significant improvements, whilst the mean levels of post-treatment symptomatology continue to exceed diagnostic criteria (Lundgren et al., 2004; Thompson-Brenner, Glass, & Westen, 2003).
For both BN and BED, CBT is the treatment approach that has received the most widespread empirical attention, and the findings from meta-analytic reviews consistently regard CBT to be the treatment of choice (Mitchell et al., 2006; Thompson-Brenner et al., 2003; Wilfley et al., 2002), with effect sizes (Cohen’s $d$) of 0.80 to 1.25 (Thompson-Brenner et al., 2003), although there is also strong support for Interpersonal Psychotherapy, and combined pharmacology and psychotherapy (Treasure & Schmidt, 2003).

Some individual CBT treatment outcome studies have met criteria for ‘well-established’ treatments (Agras, Schneider, Arnow, Raeburn, & Telch, 1989; Thackwray, Smith, Bodfish, & Meyers, 1993), according to the Task Force on Psychological Interventions’ list of empirically validated therapies (Chambless, Baker, Baucom, Beutler, Calhoun, & Crits-Christoph, 1998), with average recovery rates of approximately 50% widely reported in the literature. This has led to consideration of whether the status of the BN treatment literature should be assessed as “half empty or half full” (Mitchell, Hoberman, Peterson, Mussell, & Pyle, 1996, p. 220). Others have declared it premature to regard a treatment as being the treatment of choice when it is the only treatment that has received sustained empirical attention (Thompson-Brenner et al., 2003), and does not necessarily result in sustained improvement for the majority of participants. This is underscored by findings from a review of clinically significant change, which regarded the impact of CBT for BN as being “minimal” to “moderate” (Lundgren et al., 2004, p. 271). This has led to the call for further research to identify BN treatments that result in the recovery for the majority of participants (Thompson-Brenner et al., 2003). Treatments used for BN are
commonly adapted for participants with BED (Telch et al., 2000), and although still in infancy, the strength of evidence for behavioural interventions has been assessed as being “moderate” (Brownley et al., 2007, p.345).

Further support for an alternative approach comes from a survey of North American and Australian eating disorder clinicians. Findings revealed that only 8% of professionals indicated that they used treatment manuals due to the importance of empirically validation, 13% reported using a single theoretical approach, and 95% indicated that they used more than one approach with the same client (Tobin, Banker, Weisberg, & Bowers, 2007). Factor analysis of treatment strategies showed that psychodynamic interventions accounted for the majority of the variance, an approach which has received little empirical validation (Tobin et al., 2007). Thus, the emphasis on CBT treatment approaches in the literature does not seem to parallel treatment approaches in the field.

*Group versus Individual Outcome Studies*

The outcomes for group CBT are far less impressive than individual treatment outcomes, with recovery rates of approximately 25%, with Treatment versus Control group effect sizes of 0.44 for binges, and 0.68 (Cohen’s *d*) for purging behaviours (Thompson-Brenner et al., 2003). To date, there have been two meta-analyses which include group outcomes and two studies which compare group and individual formats for BN. BED research has not yet addressed this issue.

One meta-analysis of group CBT found that only 20.5% of treatment completers, and 15.9% of the intent-to-treat sample achieved ‘recovery’ status, defined as abstinence from bingeing (Thompson-Brenner et al., 2003). Analysis of post-treatment symptoms revealed an average frequency of 2.4 binges and 3.02 purges
per week, which exceeded diagnostic criteria (Thompson-Brenner et al., 2003). These findings are consistent with those of another meta-analysis reporting that few CBT treatment studies – and no group CBT treatment studies – demonstrated clinically significant post-treatment improvements in binge frequency (Lundgren et al., 2004). Normative comparison analysis revealed that of the five group treatments included, the post treatment binge frequency means continued to fall within a clinical range in every study (Lundgren et al., 2004).

One study has reported equivalent findings for group and individual CBT (Chen et al., 2003), with no statistically significant post-treatment or 6-month follow-up differences between treatment format on binge/purge frequency, eating disorder-related psychopathology, state and trait anxiety, depression, or self-esteem (Chen et al., 2003). However, an analysis of clinical significance revealed some important differences. A significantly higher proportion of group versus individual participants (100% vs. 83%) continued to meet diagnostic criteria post-treatment, although there were no differences at follow-up, and significantly more individual versus group participants (20% vs. zero), achieved post-treatment abstinence from bingeing and purging. Three month follow-up abstinence rates were low, with 16.67% of individual and 3.33% of group participants achieving abstinence (Chen et al., 2003). 

Only one study has indicated that group treatment is comparable to an individual format. A group versus individual CBT/Interpersonal Therapy (IPT) sequenced treatment model was examined (Nevonen & Broberg, 2006), in which CBT was followed immediately by IPT. This 23 session intervention was hypothesised to address both eating patterns and interpersonal functioning, taking advantage of the faster initial effect for CBT, and the increased IPT effect at follow-up reported elsewhere in the literature (Nevonen & Broberg, 2006). IPT has been hypothesised to
be effective because it addresses the interpersonal difficulties that often trigger binge eating (Agras, 1993). There were no significant differences between treatment groups, with 31% of individual and 41% of group participants reporting post-treatment binge/purge abstinence, and 83% of individual and 71% of group participants no longer met diagnostic criteria (Nevonen & Broberg, 2006). At one year follow-up 33% of individual and 27% of group participants maintained abstinence, and 74% of individual and 57% of group participants still did not meet criteria (Nevonen & Broberg, 2006).

**Bulimia Nervosa: Group Treatment Outcome Studies**

The preceding section has argued that group treatments are less effective than individual treatment formats for BN; this section presents a review of group treatments for BN that have not been compared to individual treatment. Early reviews of group treatments for BN initially provided support for the effectiveness of the group-based format, with one meta-analysis of 40 outcome studies demonstrating a moderate post-treatment effect size of 0.75 (Fettes & Peters, 1992). However, much of this early research was marred by lack of methodological rigour. Small sample sizes, lack of measurement uniformity, no control groups and insufficient consideration and reporting of attrition have prevented conclusive findings and comparisons between treatments. For example, while one review of 32 studies found that group therapy resulted in abstinence rates of 40.4%, (compared to 47.4% for individual therapy), less than 10% of these studies were considered to be of sound methodological rigour (Cox & Merkel, 1989). Thus, these earlier studies will not be included in this review.
A summary of group treatments for BN is presented in Table 1.4. Studies incorporating self-help or purely psychoeducational intervention have not been included, and given the stated methodological limitations of early research, only studies after 1990 are reviewed. Thus, four studies were reviewed. One of these compared two treatments with a waitlist (Wolf & Crowther, 1992), another compared CBT to medication and a combined CBT/medication condition (Jacobi, Dahme, & Dittman, 2002), while the remaining evaluated 12 sessions of CBT, with no control group (Leung et al., 2000; Openshaw et al., 2004). These studies all reported statistically significant changes in post-treatment primary outcome variables, although one (Openshaw et al., 2004) used a scale measure of bulimic behaviours (SEDS) rather than frequency of binge/purge episodes, which does not allow for an examination of post-treatment frequencies. In the two studies that included a follow-up period (Openshaw et al., 2004; Wolf & Crowther, 1992), most improvements were maintained. None of these studies have provided detailed information on rates of non-purging behaviours. While Wolf and Crowther (1992) acknowledge this limitation in the literature, and report “extreme weight control measures” (Wolf & Crowther, 1992, p. 7), this measure does not differentiate between purging and non-purging behaviours.

Despite the statistical significance of post-treatment improvements on primary outcome variables, the frequencies of post-treatment behaviours reveal that many participants continued to meet diagnostic criteria at the conclusion of treatment (Jacobi et al., 2002; Leung et al., 2000; Wolf & Crowther, 1992). In the one study that did not report binge/purge frequency (Openshaw et al., 2004), only 10% of participants demonstrated both reliable and clinically significant change in bulimic dietary behaviours. Although this rate increased to 21% at 6-month follow-up, the
vast majority of participants in this study did not experience this improvement, however as binge frequencies were not assessed, it cannot be determined whether diagnostic criteria continued to be met.

Results on secondary psychological outcome variables were mixed. While one study reported significant improvements on depression, post-treatment levels of anxiety had not significantly improved (Openshaw et al., 2004). Examination of clinical significance again revealed that while there were significant improvements on several SEDS sub-scales, most were not clinically significant (Openshaw et al, 2004). The one study in which all secondary variables were statistically significant was compromised by very high dropout rates (Jacobi et al., 2002). A further issue in the group treatment literature is that none of these studies have included measures of the effects of the group format on outcome. Research on group factors has found that elements of group cohesion such as engagement impact on treatment outcome (Kivlighan & Lilly, 1997). Without accounting for such factors, it cannot be established that the treatment interventions themselves contribute to change. Overall, there is limited evidence to suggest that group treatments are effective in reducing the psychological symptoms associated with BN.
### Table I.4

**Summary of Group Treatment Outcome Studies for Bulimia Nervosa**

<table>
<thead>
<tr>
<th>Author(s)/ Year</th>
<th>Treatment</th>
<th>Measures</th>
<th>Key Findings</th>
</tr>
</thead>
<tbody>
<tr>
<td>Wolf &amp; Crowther, 1992</td>
<td>10 sessions BT ($n = 15$) vs. 10 sessions CBT ($n = 15$) vs. WL ($n = 11$)</td>
<td>Primary: Binge/purge frequency. Secondary: EDI, SCL-90 (GSI, depression). Assessment: Pre-post, 3 month follow-up</td>
<td>Primary: Binges + Purges: CBT + BT lower than WL, BT lower than CBT. Diagnostic criteria = Yes. Secondary: EDI- CBT + BT = improvements on Bulimia, Body Dissatisfaction, Ineffectiveness subscales; CBT only = Drive for Thinness, Interceptive Awareness. WL = no change. SCL-90: CBT + BT = lower GSI, depression. CBT = sig lower GSI than BT. Follow-up: improvements maintained. Attrition: WL = 9%</td>
</tr>
<tr>
<td>Jacobi et al., 2002</td>
<td>20 sessions CBT ($n = 11$) vs. medication ($n = 12$) vs. CBT + medication ($n = 12$)</td>
<td>Primary: Binge/purge frequency. Secondary: EDI, TFEQ, BDI, SCL-90, FSKN. Assessment: Pre-post, 12 month follow-up</td>
<td>Primary: Binge + Purge reductions – CBT (B = 24.4%, P = 25.4%), Med (B = 46%, P = 35%), CBT + med (B = 50%, P = 32%). Abstinence: CBT (B = 45%, P = 63%) higher than other conditions. Follow-up: no group differences on abstinence – CBT (B = 40%; P = 20%), Med (B = 13%; P = 38%), CBT + Med (B, P = 11%). Diagnostic criteria = Yes. Secondary: pre-post and follow-up improvements on all measures, no group difference. Maintained at follow-up. Attrition: CBT = 42%, Med = 25%, CBT + Med = 33%.</td>
</tr>
<tr>
<td>Author(s)/Year</td>
<td>Treatment</td>
<td>Measures</td>
<td>Key Findings</td>
</tr>
<tr>
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<tr>
<td>Openshaw et al., 2004</td>
<td>12 sessions CBT ($n = 29$)</td>
<td>Primary: SEDS. Secondary: BDI, BAI. Assessment: pre-post, 12 month follow-up</td>
<td>Primary: SEDS subscales (assertiveness, anorexic-related cognitions and behaviours, bulimia-related cognitions and behaviours, self-directed hostility. Follow-up: 7% evidenced clinically significant change on bulimic dietary cognitions, 3% on measures of assertiveness; self-directed hostility and depression not clinically significant. Diagnostic criteria: not reported. Secondary: BDI. Attrition: 20%</td>
</tr>
</tbody>
</table>

Note: CBT = Cognitive Behaviour Therapy; BT = Behaviour Therapy; WL = Waitlist Control Group; B = Binge; P = Purge.
Measurement Tools: A list of abbreviations and the full title of each measure appears in Appendix B.
Summary of Group Treatment Research for Bulimia Nervosa

Although the majority of research on group treatment outcomes has reported significant post treatment changes on bulimic symptoms, in the studies which report mean post-treatment binge frequencies (Jacobi et al., 2002; Leung et al., 2000; Wolf & Crowther, 1992), these frequencies continued to exceed diagnostic criteria. The one study that has reported impressive findings is yet to be replicated. It was also lengthy and complex to administer, as it sequenced IPT and CBT (Nevonen & Broberg, 2006), which differ considerably in terms of content and process IPT and CBT (Wilson, 1996). Thus, given that approximately one quarter of individuals who enter group treatment will recover (Thompson-Brenner et al., 2003); there is currently limited evidence to support the clinical effectiveness of current group-treatment approaches (Lundgren et al., 2003). This has led to calls for research into different treatment approaches (Mitchell et al., 2006; Thompson-Brenner et al., 2003), particularly as most treatment studies to date are cognitive-behavioural (Thompson-Brenner et al., 2003).

Binge-Eating Disorder: Group Treatment Outcome Studies

To date, there are no published meta-analyses of individual or group treatments for BED. Table 1.5 presents a summary of CBT and IPT group treatments for BED. While the participants of two of these studies were classified as ‘non-purging bulimics’ (Telch et al., 1990; Wilfley et al., 1993), these participants actually met criteria for BED, however this had not yet featured in the DSM. Thus, for the purposes of this review, they are included as BED treatments. Five treatment outcome studies were included in this review, of which two compared a group treatment to a waitlist condition (Dingemans et al., 2007; Telch et al., 1990, 2001), two compared
CBT to IPT (Wilfley et al., 1993; Wilfley et al., 2002), and a further study incorporated a two-stage design in which participants who did not respond to 12 sessions of CBT were provided with a further 12 sessions of IPT (Agras et al., 1995).
Table 1.5

Summary of Group Treatment Outcome Studies for Binge Eating Disorder

<table>
<thead>
<tr>
<th>Author(s) /Year</th>
<th>Treatment</th>
<th>Participants</th>
<th>Measures</th>
<th>Key Findings</th>
</tr>
</thead>
<tbody>
<tr>
<td>Telch et al., 1990</td>
<td>10 sessions CBT (n = 23) vs. WL (n = 21)</td>
<td>Females with recurrent binge eating, no purging</td>
<td>Primary: Binge episode frequency (7 day recall). Secondary: BDI, EDI, EAT, TFEI. Assessment: Pre-post, 10-week follow-up</td>
<td>Primary: Binge reduction – CBT = 94%, WL = 9%. Abstinence: CBT = 79%, WL = nil. Secondary: No significant differences. Diagnostic criteria = No. Follow-up: Binge frequency increase (below criteria), 46% lapsed from abstinence. Attrition: CBT = 17%.</td>
</tr>
<tr>
<td>Wilfley et al., 1993</td>
<td>16 sessions CBT (n = 18) vs. IPT (n = 18) vs. WL (n = 20)</td>
<td>As above</td>
<td>Primary: as above. Secondary: BDI, IIP, RSES, TFEQ. Assessment: Pre-post, 6 + 12 months follow-up</td>
<td>Primary: Binge reduction – CBT = 41%, IPT = 71%, WL = 10%. Abstinence: CBT = 28%, IPT = 44%, WL = nil. Secondary: TFEQ (disinhibition, restraint) – CBT + IPT both superior to WL. Diagnostic criteria: CBT = Yes, IPT = No. 12 month follow-up: Binge frequency increased. Attrition: CBT = 33%, IPT = 11%.</td>
</tr>
<tr>
<td>Agras et al., 1995 (Phase 1)</td>
<td>12 sessions CBT (n = 39) vs. assessment-only control (n = 11)</td>
<td>Males and females with BED</td>
<td>Primary: Binge day frequency (14 day recall). Secondary: BDI, TFEQ, IIP, BES, SCL-90, RSES. Assessed: Pre-post.</td>
<td>Primary: Binge reduction – CBT = 77%, Control = 22%. Abstinence: CBT = 55%, Control = 9%. Secondary: TFEQ (disinhibition), BES. Diagnostic criteria: No. Attrition: CBT = 14%.</td>
</tr>
<tr>
<td>Author(s)/Year</td>
<td>Treatment</td>
<td>Participants</td>
<td>Measures</td>
<td>Key Findings</td>
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<tr>
<td>Agras et al., 1995 (Phase 2)</td>
<td>12 sessions IPT ($n = 13$)</td>
<td>Phase 1 non-responders</td>
<td>As above</td>
<td>Primary: Binge frequency increased (not significant). Secondary: no changes.</td>
</tr>
<tr>
<td>Wilfey et al., 2002</td>
<td>20 sessions CBT ($n = 81$) vs. IPT ($n = 81$)</td>
<td>Males and female overweight participants with BED</td>
<td>Primary: Binge day frequency (EDE, 28 day recall). Secondary: GSI, IIP, RSES. Assessment: Pre-post, 12 month follow-up.</td>
<td>Primary: Binge reduction – CBT = 94%, IPT = 90%. Abstinence: CBT = 82%, IPT = 74%. Secondary: GSI, IIP, RSES in both treatments. Diagnostic criteria = No. Follow-up Abstinence: CBT = 72%, IPT = 70%. Attrition: CBT = 11%, IPT = 8.6%.</td>
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</table>

Note: CBT = Cognitive-behaviour Therapy; IPT = Interpersonal Therapy; WL = Waitlist control group. Measurement Tools: A list of abbreviations and the full title of each measure appears in Appendix B.
The overall findings indicate that group treatments appear to be more effective for BED than BN in terms of primary outcome variables, demonstrated by the magnitude of reductions in binge frequency, and the fact in all but one of the studies that reported post-treatment binge frequencies (Wilfley et al., 1993), the average post-treatment frequency did not meet diagnostic criteria.

However, while the primary behavioural outcomes of binge reduction were promising, results on secondary psychological variables for CBT and IPT were mixed. Only one study reported significant differences between treatment and control groups on depression (Dingemans et al., 2007). Moreover, the research in which significant findings were reported also included three individual sessions in the treatment package (Wilfley et al., 2002), so the relative contribution of this individual versus group components cannot be established. Across remaining studies, no significant differences between treatment and control groups were found on measures of depression (Agras et al., 1995; Telch et al., 1990; Wilfley et al, 1993), self-esteem, interpersonal problems (Agras et al., 1995; Telch et al., 1990), restraint (Agras et al., 1995; Telch et al., 1990), general psychopathology (Agras et al., 1995), eating disorder-related cognitions, eating attitudes, and disinhibition of eating (Telch et al., 1990). Interestingly, the treatments with an exclusively group format did not result in changes on measures (cognitions or interpersonal problems) which were related to their particular theoretical orientation (Wilfley et al., 1993).

The lack of improvements in secondary variables are particularly noteworthy, as abstinence rates either declined, or binge frequency increased, in all studies that included follow-up assessments (Telch et al., 1990; Wilfley, 2002; Wilfley et al., 1993). As etiological models have emphasised the role of psychosocial factors in the development and maintenance of BED, treatments may need to focus on
improvements on secondary, as well as primary behavioural variables if recovery is to be maintained, as the limited research on relapse factors in BED indicates that participants with depression or psychiatric comorbidity (Ricca, Mannucci, Zucchi, Rotella, & Faravelli, 2000) respond less well to treatment. This is underscored by findings which showed that post-treatment abstinence was completely mediated by changes in weight concern, and partially by body shape concerns, eating concerns, depression, and general psychopathology (Dingemans et al., 2007). Other research into BED relapse did not include measures of secondary outcome variables (Safer et al., 2000).

**Mindfulness-based Treatments: A Promising Alternative**

Although CBT and IPT treatments have demonstrated better outcomes on primary variables with BED, the relatively new and burgeoning area of mindfulness-based treatments has resulted in improvements on both primary and secondary outcome variables for BED. To date, there have been five treatments studies which examine the effect of mindfulness-based treatments. Table 1.6 presents a summary of these treatments. One study has compared treatment to a waitlist condition (Telch et al., 2001), three are pilot studies with no control group (Baer, Fisher & Huss, 2006; Kristeller & Hallett, 1999; Telch et al., 2000), and the remaining study formed part of a larger research program not explicitly focused on eating disorders, which nevertheless collected data on binge eating (Smith et al., 2006). Two studies on Dialectical Behaviour Therapy (DBT) have been included in this review (Telch et al., 2000; Telch et al., 2001), as this treatment package contains a mindfulness component.
### Summary of Mindfulness-based Group Treatments for Binge Eating Disorder

<table>
<thead>
<tr>
<th>Author(s)/ Year</th>
<th>Treatment</th>
<th>Participants</th>
<th>Measures</th>
<th>Key Findings</th>
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</table>
| Kristeller & Hallett, 1999. | 6 sessions meditation-based treatment \( (n = 18) \) | Obese females with BED     | Primary: Binge frequency & size of binge \( (7 \text{ day recall}) \)  
Secondary: BES, BDI, BAI, self-reported ‘sense of eating control, ‘sense of mindfulness’ during eating, awareness of hunger & satiety \( \text{(weekly)} \). Assessment: Pre-post, 3 week follow-up \( \text{(BDI, BAI, BES)} \) | Primary: Reduction in binge frequency. Abstinence not reported. Diagnostic criteria = No. proportion of ‘large’ binges fell from 70.3 % to 23.6% at follow-up. Secondary: BES, BDI, BAI; improvements on weekly self-report measures. Attrition = 14%. |
| Telch et al., 2000.    | 20 sessions DBT \( (n = 11) \)     | Females with BED           | Primary: Binge day/episode frequency \( \text{(EDE = 28 \text{ day recall})} \)  
Secondary: BDI, BES, EES, RSES, NMR, PANAS. Assessment: Pre-Post, 6 month follow-up \( \text{(EDE)} \) | Primary: Binge reduction = 79%; Abstinence = 82%. Secondary: Large ES = BES, NMR, PANAS-p, BDI, EES (anxiety). Medium ES = EES (anger, depression); Small ES = RSES, PANAS-n. Diagnostic criteria = No. Attrition = nil. Follow-up: 70% abstinent. |
<p>| Telch et al., 2001.    | 20 sessions DBT ( (n = 22) ) vs. WL ( (n = 22) ) | Females with BED           | Primary: As above. Secondary: As above. Assessment: As above.             | Primary: 100% binge reduction. Abstinence: DBT = 89%; WL = 12.5%. Secondary: EES (anger, anxiety) only. Diagnostic criteria = No. Follow-up: 56% abstinence. Attrition: DBT = 18%; WL = 55%. |</p>
<table>
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<tr>
<th>Author(s)/Year</th>
<th>Treatment</th>
<th>Participants</th>
<th>Measures</th>
<th>Key Findings</th>
</tr>
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<tbody>
<tr>
<td>Baer et al., 2006.</td>
<td>10 sessions MBCT ($n = 10$)</td>
<td>Females with BED</td>
<td>Primary: OBE, SBE (EDE; 28 day recall). Secondary: BES, EEI, KIMS, BDI. Assessment: Pre-post</td>
<td>Primary: 75% decrease on OBE, SBE increased; Secondary: BES (ES = .88); BDI (ES = .30), KIMS (observation, non-judgmental awareness), EEI mixed, EDE scales within clinical range. Diagnostic criteria = No. Abstinence = 10%. Attrition = not reported.</td>
</tr>
<tr>
<td>Smith et al., 2006.</td>
<td>8 sessions MBSR ($n = 25$)</td>
<td>Males and females; no diagnosis</td>
<td>Primary: BES (binge frequency not assessed). Secondary: BDI, MAAS, STAI, SPW-B. Assessment: Pre-post.</td>
<td>Primary: BES = larger effect size ($d = 3.05$) for participants with ‘mild’ pre-treatment binge eating problems. Secondary: Improvements on all measures except STAI-Anxiety. Diagnostic criteria = not reported.</td>
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</table>

Note: WL = Waitlist; DBT = Dialectical Behaviour Therapy; MBCT = Mindfulness-based Cognitive Therapy; MBSR = Mindfulness-based Stress reduction; OBE = Objective Binge Episode; SBE = Subjective Binge Episode; ES = Effect size; Measurement Tools: A list of abbreviations and the full title of each measure appears in Appendix B.
All of the mindfulness-based treatment studies have reported improvements on primary variables. Of all the studies that provided data on post-treatment binge frequencies, the mean frequency was below the diagnostic threshold (Baer et al., 2006; Kristeller & Hallett, 1999; Telch et al., 2000; Telch et al., 2001). While results from a Mindfulness-based Cognitive Therapy (MBCT) pilot study produced some mixed findings, it provided interesting insights into participants’ perceptions of binges and binge triggers, and how mindfulness may operate. While the frequency of ‘objective’ binges decreased to below diagnostic criteria for all participants, the frequency of subjective binges episodes actually increased. This increase was attributed to changes in participants’ perceptions of a ‘binge’ as being the consumption of food in the absence of hunger (Baer et al., 2006). Similarly, there were mixed findings on the Eating Expectancies Inventory (EEI), in that endorsement of beliefs that “eating leads to feeling out of control” and “eating manages negative affect” both decreased, endorsements that “eating alleviates boredom” increased; this was also attributed to increased awareness of eating-related triggers (Baer et al., 2006), and may be reflective of the increases in levels of mindfulness.

Overall, the mindfulness-based treatments produced more improvements on secondary variables than CBT or IPT achieved with individuals with a diagnosis of BED. These studies reported significant improvements on secondary variables, including depression (Baer et al., 2006; Kristeller & Hallett, 1999; Smith et al., 2006), anxiety (Kristeller & Hallett, 1999; Smith et al., 2006), increases in perceived levels of eating control, and awareness of hunger and satiety cues (Kristeller & Hallett, 1999).

The DBT studies resulted in less improvement on secondary variables. While there were large effects for depression, negative mood regulation, emotional eating
(anxiety), medium effects for emotional eating (anger and depression), and small effects for self-esteem and negative affect in the pilot study (Telch et al., 2000), these results were not replicated in the ensuing randomised control trial. While participants in the DBT treatment group reported post-treatment decreases on emotional eating in response to anger, eating, weight and shape concern, there were no significant between-group differences on depression, self-esteem, positive or negative affect (Telch et al., 2001). However, this may be due to participants receiving an insufficient ‘dose’ of mindfulness. Mindfulness skills training represented only four of twenty DBT sessions, and ‘formal’ mindfulness meditation is typically not included in DBT practice (Linehan, 1993). Formal mindfulness practice involves meditation during sessions, as well as daily homework practice (Germer, 2005). Although the other treatments were of considerably shorter duration (between 6 and 10 sessions), they all involved both in-session meditation and homework practice. As shall be discussed in Chapter Two, research has yet to clarify the contribution of mindfulness practice to outcome.

**Summary of Group Treatments for Binge Eating Disorder**

This review indicates that based on the current knowledge of interventions, group treatments appear to be more effective for BED than BN in terms of primary outcome variables. However, while these primary behavioural outcomes of binge reduction were promising, outcomes for secondary psychological variables were mixed. Overall, the literature on BED is compromised by small sample sizes (Brownley et al., 2007), and studies that do report more promising findings have yet to be replicated by independent research teams (Telch et al., 1990; Wilfley et al., 1993; Wilfley et al., 2002).
Despite the encouraging findings, research into mindfulness-based treatment for eating disorders is in a preliminary stage, and is hence affected by the methodological issues which confound most burgeoning areas of research. Current research consists of exploratory or pilot-studies, and as such lack control groups (Baer et al., 2006; Kristeller & Hallett, 1999) or large sample sizes (Baer et al., 2006; Kristeller & Hallett, 1999; Smith et al., 2006). Data on abstinence rates are limited, as is follow-up data. However, given the improvements on primary and secondary outcome variables, mindfulness-based interventions represent an area for further exploration, particularly as these approaches were also of a considerably shorter duration than other interventions.

Overall Summary

Eating disorders cause considerable distress for the individuals who suffer from them, and considerable frustration for researchers and clinicians. After more than two decades of research into BN, and the relatively recent foray into BED, the following problems remain:

1. Diagnostic Issues. There is widespread disagreement and contention within the literature regarding the delineation of eating disorder diagnostic categories. The exclusion of sub-clinical or atypical participants from treatment (ED-NOS) has resulted in gaps in knowledge regarding the etiology, clinical features, course and outcome and treatment response from what is purported to be the most common outpatient presentation. A substantial proportion of individuals receive an ED-NOS diagnosis if they binge frequency is less than two episodes per week, and there is currently no empirical support to justify this frequency cutoff. One proposed
resolution for this is a transdiagnostic solution, and the inclusion of ED-NOS
participants in treatment research.

2. Etiological confusion. Etiological models of BN and BED abound, with
mixed and somewhat contradictory empirical support for each of them, leading to
some suggestions that any understanding of etiology must be based on multifactorial
pathways. A parsimonious solution has been proposed with the introduction of the
transdiagnostic process model of binge eating.

3. Lack of effective treatment. For more than two decades, researchers have
been striving to identify an effective treatment for eating disorders. The ‘treatment of
choice’ has long been CBT, however research indicates that CBT is only effective for
half of those suffering from bulimia, and when delivered in a group format, is only
effective for approximately one quarter of participants (Thompson-Brenner et al.,
2003). Group therapy is a potentially cost-effective and beneficial treatment for eating
disorders, particularly due to its potential to alleviate the sense of alienation, shame
and interpersonal distrust which are hallmarks of these disorders (Polivy & Federoff,
1997). Thus, there is a need to identify a group treatment which produces more
effective treatment outcomes than those published to date. BED, a newly relatively
recent eating disorder category, seems to respond better to treatment, but few
established treatments lead to improvements on underlying psychological variables,
increasing the risk of relapse. With the rise of obesity and the increased incidence of
eating disorders, the identification of an effective treatment is paramount. This
literature review has identified mindfulness-based treatments as possibly providing
such a solution.
Mindfulness as a Solution. An emerging finding from the BED literature is that mindfulness-based treatments are a promising treatment approach. To date, there have been no mindfulness-based group treatments for BN. As the following chapter will demonstrate, mindfulness-based treatments have been found to be effective for a wide range of disorders. Mindfulness is a particularly promising approach, as it directly targets the transdiagnostic processes outlined in this chapter. Chapter Two will introduce and explore the mindfulness construct, and review the relevant mindfulness-based treatment literature. This chapter will also present a transdiagnostic process conceptualisation of mindfulness, and explain how this can inform an effective treatment approach for BN, BED and ED-NOS.
Mindfulness has been defined as “the awareness that emerges through paying attention on purpose, in the present moment, and non-judgementally to the unfolding of experience moment by moment” (Kabat-Zinn, 2003, p. 145) and as open or receptive attention to and awareness of ongoing events and experience (Brown & Ryan, 2003; Kabat-Zinn, 1990; Segal, Williams, & Teasdale, 2002). Mindfulness is thought to be inherent to some extent within all individuals (Kabat-Zinn, 1990), and has been proposed to be a common factor of psychotherapy (Martin, 1997, 2002). The construct of mindfulness is consistent with Western concepts such as awareness, acceptance, exposure (Baer, 2003), insight and the observing self (Martin, 2002), however no single construct within the Western psychology literature captures the entirety of the mindfulness construct.

Research into mindfulness and mindfulness-based interventions has rapidly advanced within recent years. Numerous studies have emerged which associate mindfulness-based interventions with positive psychological outcomes (Grossman, Niemann, Schmidt, & Walach, 2004; Kabat-Zinn et al., 1992; Teasdale et al., 2000). Mindfulness has also been incorporated into various other treatment approaches (Mindfulness-based Cognitive Therapy, Dialectical Behaviour Therapy, and Acceptance and Commitment Therapy), and has been viewed as a useful adjunct to other therapeutic approaches, which are often cognitive-based (Hamilton, Kitzman, & Guyotte, 2006; Kabat-Zinn, 2003; Weiss, Nordlie, & Siegel, 2005). However, there is a risk that the recent dissemination of mindfulness has been somewhat pre-emptive, in that mindfulness as a construct is still not fully understood, particularly in terms of the mechanisms of change (Grossman et al., 2004; S. C. Hayes & Wilson, 2003; S. L.
Shapiro, Carlson, Astin, & Freedman, 2006), what contributes to its development, and ambiguity regarding its therapeutic limitations and contraindications (Wells, 2006).

Current research has also not conclusively demonstrated the efficacy of mindfulness-based interventions; whether they actually increase levels of mindfulness, or that increases in mindfulness significantly contribute to symptom improvement (S. L. Shapiro et al., 2006). Thus, it is possible that mindfulness may not engender change; the positive outcomes instead arising from non-specific therapeutic factors (Coelho, Canter, & Ernst, 2007), such as the group environment. Many mindfulness interventions also contain additional components such as cognitive therapy techniques in Mindfulness-based Cognitive Therapy (MBCT), hatha yoga in Mindfulness-based Stress Reduction (MBSR), interpersonal effectiveness training in Dialectical Behaviour Therapy (DBT) and values identification and committed action in Acceptance and Commitment Therapy (ACT). Research has yet to determine which components are active ingredients in facilitating change (Roemer & Orsillo, 2003; S. L. Shapiro et al., 2006). Thus, while treatment outcomes to date are promising, there is still much to be learnt about mindfulness and its contribution to therapeutic change.

*Origins of Mindfulness*

Mindfulness represents a core teaching and foundation of Buddhist philosophy. While the Buddhist influence has been widely acknowledged in some Western applications of mindfulness, particularly Mindfulness-based Stress Reduction (Kabat-Zinn, 1990), a belief in or commitment to Buddhist teachings is not a prerequisite for practicing mindfulness (Kabat-Zinn, 1990; Segal et al., 2002). Indeed, therapeutic approaches such as ACT maintain that mindfulness techniques can be secularised (S. C. Hayes & Shenk, 2004). This separation of mindfulness from its
spiritual origins has been treated with caution by some, particularly the growing
tendency for mindfulness to be regarded as an adjunctive technique to cognitive and
behavioural treatment packages (Kabat-Zinn, 2003). However, it has also been
acknowledged that mindfulness may need to be somewhat distanced from its Eastern
origins to be acceptable to clients within Western psychology and from diverse
spiritual and religious backgrounds (Kabat-Zinn, 1990; Marlatt & Kristeller, 1999).
Thus, while mindfulness has its origins in Buddhist philosophy and practice, it can be
applied to and disseminated within Western clinical contexts.

How Does Mindfulness Work?

Mindfulness is a naturally occurring phenomenon that is available to be
experienced in every moment, and is not confined to meditation. Indeed, any activity
that encourages present-moment awareness and acceptance can facilitate mindfulness,
and interventions have used walking, washing dishes, driving, and counting breaths as
mindfulness techniques (Germer 2005). The practice of mindfulness is distinguished
by being either formal or informal. Formal practice involves meditation which
provides a means of facilitating and deepening the experience of mindfulness
(Germer, 2005). Informal practice refers to the application of mindfulness skills
during any activity or mental event of daily life. Thus, while meditation is not
essential for the practice of mindfulness, it is considered an effective means of
developing and enhancing mindfulness (Kabat-Zinn, 1990). There is currently no
empirical research to indicate which type of practice is more effective, or how long
one needs to engage in this practice to gain optimum benefit.

The rapid dissemination of mindfulness-based treatments has been
accompanied by discussion regarding the components and underlying processes of
mindfulness, and speculation as to why it has so many benefits (Baer, 2007; Brown, Ryan & Creswell, 2007). Various attempts have now been made to elucidate the components of mindfulness and the mechanisms though which it may have these beneficial effects. These components are rarely viewed as being discrete or independent; rather, they are generally conceptualised as simultaneous, overlapping and interdependent aspects of a cyclical process of mindfulness (Brown et al., 2007; S. L. Shapiro et al., 2006).

**Review of Proposed Components**

The first delineation of mindfulness components arose out of the recognised need for an operational definition. This definition identified two components: the self-regulation of attention, and a particular orientation to experience (Bishop et al., 2004). The **self-regulation of attention** refers to sustained attention on present experience, allowing for awareness of internal stimuli to develop. It also involves the capacity to switch attention, and the inhibition of elaborative processing, by which the present moment is directly experienced, without engagement with the contents of awareness (Bishop et al., 2004). The **orientation to experience** refers to a stance of curiosity, openness and acceptance toward the present moment, regardless of its perceived valence or desirability.

The Intention, Attention, and Attitude Model (IAA) has been based on Kabat-Zinn’s (2003) definition (S. L. Shapiro et al., 2006). The **Intention** component is comparable to the definitional component of paying attention “on purpose” (Kabat-Zinn, 2003, p. 143), and refers to the rationale for practicing mindfulness. Intention is proposed to exist on a continuum; from self-regulation, to self-exploration and self-liberation (S. L. Shapiro et al., 2006). **Attention** refers to observation of present
moment internal and external stimuli (Kabat-Zinn, 2003; S. L. Shapiro et al., 2006), while attitude refers to the compassionate and non-judgemental quality of attention (Kabat-Zinn, 2003; S. L. Shapiro et al., 2006). The IAA model then expands upon Kabat-Zinn’s (2003) definition by proposing a meta-mechanism of re-perceiving (Shapiro et al., 2006). Re-perceiving refers to a shift in consciousness which is characterised by increased awareness of a distinction between subject and object, and accompanied by heightened clarity and objectivity (S. L. Shapiro et al., 2006). While re-perceiving is thought to be a naturally occurring developmental process, the practice of mindfulness is thought to enhance it’s development (S. L. Shapiro et al., 2006).

In an outline of mechanisms of change within DBT, Lynch, Chapman, Rosenthal, Kuo and Linehan (2006) have proposed four components which they believe to be the mechanisms of change in mindfulness. Attentional control refers to flexible attention used to interrupt rumination and worry processes (Lynch et al., 2006). Acceptance strategies allow for behavioural exposure to aversive and previously avoided experiences, leading to the acquisition of new responses. The emotion regulation component is hypothesised to alter responses to affective experiences through the reduction of secondary emotional reactions, behavioural responses or cognitive evaluations which would otherwise intensify and perpetuate distress (Lynch et al., 2006). Finally, mindfulness is thought to reduce literal beliefs in verbal rules which would otherwise result in the evaluation of external or internal stimuli as negative, and thus trigger avoidance or suppression strategies (Lynch et al., 2006).

Most recently, Brown and colleagues (2007) have outlined several characteristics and processes of mindfulness. Along with present-oriented
consciousness, and an empirical stance toward reality, these characteristics consider several aspects of attention and awareness. Clarity of awareness refers to its neutral and unbiased nature of both internal and external stimuli; flexibility of awareness and attention allows for conscious switching between broader contexts or perspectives and more detailed focus; stability or continuity of attention and awareness maintains awareness on the present, and reduces distraction and entanglement with concepts or emotion; and non-conceptual or non-discriminatory awareness involves the suspension of comparisons, categorisations, evaluations, rumination of cognitive content (Brown et al., 2007).

Processes include insight, nonattachment, exposure, enhanced mind-body functioning and integrated functioning (Brown et al., 2007). Metacognitive insight emerges from an observational stance, attentional flexibility and non-conceptual awareness, and is thought to facilitate decreases in habitual and automatic thought patterns, and willingness to accept aversive experiences (Brown et al., 2007). Nonattachment refers to acceptance or willingness to experience what is present, promoting a sense of well-being that is not contingent on external circumstances. Exposure results from this willingness, and along with metacognitive insight, leads to desensitisation, more effective affect regulation strategies and adaptive behavioural responses (Brown et al., 2007). Enhanced mind-body functioning occurs in response to decreased stress and enhanced immunological resistance associated with mindfulness (Davidson et al., 2003), resulting in increased biological and psychological resources to maintain well-being, while integrated functioning results from all these processes (Brown et al., 2007).
Mindfulness: Transdiagnostic Processes?

Baer (2007) has drawn parallels between the transdiagnostic processes proposed by Harvey et al (2004) and outlined in Chapter One, and the proposed components of mindfulness. This may help to explain why mindfulness has been found to be helpful for such a wide range of disorders; it targets common underlying and maintaining processes (Baer, 2007; Harvey et al., 2004). The following sections will outline these connections, and supporting empirical evidence available to date. Given the recency of many of these proposed component models, this research is currently in its infancy.

Broadened and Flexible Attentional Focus

As outlined in Chapter One, attentional processes, particularly self-focused attention and selective attention, have been associated with psychopathology (Harvey et al., 2004). Baer (2007) suggests that mindfulness may be particularly helpful with self-focused attention, a view which is consistent with all of the previously mentioned models and proposed components (Bishop et al., 2004; Brown et al., 2007; Kabat-Zinn, 2003; Lynch et al., 2006; S. L. Shapiro et al., 2006).

There is also emerging empirical support for the role of mindfulness in attentional processes. Research on attentional orientation found that participants who attended an intensive one month meditation retreat demonstrated enhanced attentional accuracy and conflict monitoring compared to participants who had attended an 8 session MBSR program. The MBSR participants demonstrated superior accuracy to a control group (Jha, Krompinger, & Baime, 2007). Other research has examined attentional qualities following brief meditation sessions. In a study using a Stroop interference task as an indicator of reduced habitual responding, participants who had
attended a 20 minute meditation session were found to perform better than a control
group (Wenk-Sormaz, 2005), while findings from a study of sustained focused
attention tasks found that long-term meditators performed better than short term
meditators (Valentine & Sweet, 1999). Other research has failed to find significant
differences in attentional control between MBSR participants and a control group
(Anderson, Lau, Segal & Bishop, 2007).

Support for the role of attention has also emerged from research on the
‘Observing’ subscale of the Five Facet Mindfulness Questionnaire (FFMQ), which
assesses attention to internal and external stimuli (Baer, Smith, Hopkins, Krietemeyer,
& Toney, 2006; Baer, 2007). Higher scores on the subscale have been found to
significantly correlate with meditation experience, and experienced meditators scored
higher than non-meditators (Baer, 2007). High scores on this subscale were also
positively correlated with well-being, and negatively correlated with psychological
symptoms (Baer, 2007)

Non-Elaborative Processing

The preceding theories and models all make reference to the inhibition of
elaborative processing being an integral component of mindfulness (Bishop et al.,
2004). This is incorporated into concepts of re-perceiving (S. L. Shapiro et al., 2006),
reduction of literal beliefs in rules (Lynch et al., 2006), non-conceptual awareness and
metacognitive insight (Brown et al., 2007). Non-elaborative processing addresses the
belief that thoughts are accurate representations of reality which require a behavioural
response (Kabat-Zinn, 2003). This concept has parallels with other conceptual
models, such as meta-cognition in the Self-Regulatory Executive Function (S-REF)
model for generalised anxiety disorder (Wells, 1999) and the decentering process in
the Differential Activation Hypothesis (DAH) for depression (Teasdale et al., 2000). The disruption of ruminative thought processes has been hypothesised to be a mechanism of change in MBCT treatments for preventing depressive relapse (Segal et al., 2002).

Preliminary empirical support emerges from research on experienced meditators and non-meditators, which found a negative correlation between rumination and meditation experience, with mindfulness skills mediating this relationship (Baer, 2007). Findings from a randomised controlled trial which compared mindfulness meditation to somatic relaxation training and a control condition showed significant decreases in distractive and ruminative thought processes in the mindfulness condition, with the reduction in rumination mediating the relationship between meditation and distress (Shamini et al., 2007). Following a dysphoric mood induction, non-clinical participants who were randomly assigned to meditation condition reported significantly less dysphoric mood than participants in rumination or distraction conditions (Broderick, 2005). Findings from an experimental study indicated that participants who had attended a 7 week mindfulness meditation course demonstrated significantly reduced emotional interference in a cognitive task, and reductions in resting skin conductance levels, compared to participants who were randomised to a relaxation meditation course, or a waitlist control group (Ortner, Kilner, & Zelazo, 2007).

**Reduced Experiential Avoidance**

The reduction of experiential avoidance (escape, avoidance and safety behaviours; Harvey et al., 2004) is similarly implicated across all proposed mindfulness components, in terms of openness and acceptance toward the present
moment (Bishop et al., 2004), the compassionate and non-judgmental quality of attention (S. L. Shapiro et al., 2006), behavioural exposure (Lynch et al., 2006; Brown et al., 2007) and acceptance and willingness to experience what is present (Brown et al., 2007).

On an object detection task, which assesses attention to the present moment that is uninfluenced by expectations, participants who had completed an 8 session MBSR program performed significantly better than a control group (Anderson et al., 2007). In the previously mentioned research of meditators and non-meditators, there was a negative correlation between thought suppression and meditation experience (Baer, 2007). Research has recently investigated the effectiveness of control (distraction, cognitive restructuring) and acceptance based strategies (including mindfulness skills) for managing food cravings (Forman et al., 2007). Participants, who differed on a measure of psychological sensitivity to food (Power of Food Scale; PFS) were instructed to keep a transparent box of chocolates with them, and abstain from consuming chocolate in any form for 48 hours. For participants with low PFS scores, control-based strategies were more effective; however for those with high PFS scores, the acceptance-based strategies were more effective in managing food cravings and maintaining abstinence (Forman et al., 2007).

Summary

The effectiveness of mindfulness treatment is thought to be enhanced if the relative emphasis given to each mindfulness component reflects the psychopathological processes of the disorders they are designed to target (Teasdale, Segal, & Williams, 2003). There are direct parallels between the transdiagnostic conceptualisation of mindfulness outline above, and the transdiagnostic processes
underlying eating disorders outlined in Chapter One. These parallels are delineated in Figure 2. This suggests that mindfulness can be a viable and effective treatment approach for eating disorders. Further, as the proposed components of mindfulness are consistent with transdiagnostic processes underlying many psychological disorders, this provides an explanation for why mindfulness has been associated with benefits across such a broad spectrum of clinical issues (Baer, 2007), as shall be demonstrated in the following review of mindfulness-based treatments.
Figure 2. Parallels between mindfulness components and the Transdiagnostic Process Model of Binge Eating.

Overview of Mindfulness Interventions

The first western application of mindfulness was the Mindfulness-based Stress Reduction (MBSR) program established in 1979 at the University of Massachusetts for the reduction of stress, illness and pain in hospital outpatients who had not responded to traditional treatments (Kabat-Zinn, 2003). The MBSR program consists
of 2.5-hour sessions over 8 weeks, along with a half-day silent retreat. Participants learn and practice a variety of mindfulness techniques, such as sitting, eating, and walking meditations, and hatha yoga. There is a significant homework component - consisting of 45-minute daily meditation practice, 6 days per week, for the duration of the program (Kabat-Zinn, 1990).

More recently, the Mindfulness-Based Cognitive Therapy (MBCT), derived from MBSR, was designed to assist in preventing depressive relapse (Segal et al., 2002). MBCT is similar in session structure to MBSR, but differs on three components: the inclusion of psychoeducation components on depression, the conceptualised relationship between cognition and emotion, and the use of cognitive strategies to enhance awareness of relapse triggers (Segal et al., 2002).

 Whereas both MBSR and MBCT do not separate mindfulness from its traditional meditative context, other therapies utilise mindfulness as a technique within a treatment package, without the meditative component. Acceptance and Commitment Therapy (ACT) employs a mindfulness component, involving informal mindfulness exercises, to reduce experiential avoidance, increase awareness, and distinguish between evaluative and descriptive thoughts (S. C. Hayes, Strosahl, & Wilson, 1999). ACT differs from MBSR and MBCT in its emphasis on value-driven action. In Dialectical Behaviour Therapy (DBT), Core Mindfulness Skills are part of a three-module treatment package, in which clients are taught to observe, describe and participate with internal and external phenomena in a non-judgemental way (Linehan, 2003).

Mindfulness-based Eating Awareness Training (MB-EAT), as mentioned earlier, is an integration of MBSR and CBT with a specific application to eating, weight and shape issues (Kristeller & Jones, 2006). Additional mindfulness hybrids
continue to emerge. These are often idiosyncratic treatments that are clinically-inspired, rather than being embedded within larger research programs. For instance, Mindfulness-based Art Therapy (MBAT) is an integration of mindfulness meditation and art therapy, primarily used for cancer patients, with goals of decreased stress and enhanced quality of life (Monti et al., 2006). Notably, there has not been a mindfulness intervention which aims to facilitate the development of mindfulness, which does not contain additional components, and which directly targets the aforementioned transdiagnostic processes.

**Review of Mindfulness-based Treatment Outcomes**

The following review of the mindfulness literature will demonstrate a consistent association between mindfulness-based interventions and positive outcomes on a range of psychological and psychosocial variables. A recent meta-analytic review of published and unpublished research reported a mean effect size of approximately 0.49 for controlled studies, and concluded that mindfulness interventions represent a useful intervention for a broad range of disorders (Grossman et al., 2004). An earlier meta-analysis (Baer, 2003) found mean post-treatment and follow-up effect sizes of 0.59, leading to the conclusion that mindfulness is approaching the status of a ‘probably efficacious’ intervention for studies using heterogeneous client samples (Baer, 2003, p.140).

**Study Exclusion Criteria**

Mindfulness interventions, particularly MBSR, have been applied to diverse client groups, and a substantial body of research exists on the effectiveness of MBSR in health psychology areas such as oncology (Carlson, Speca, Patel, & Goodey, 2003;
Specia, Carlson, Goodey, & Angen, 2000; Tacon, Caldera, & Ronaghan, 2004), chronic pain (Kabat-Zinn, Lipworth, & Burney, 1985; Sagula & Rice, 2004), heart disease (Tacon, McComb, Caldera, & Randolph, 2003), chronic fatigue syndrome (Surawy, Roberts, & Silver, 2005), and other heterogeneous client populations (Reibel, Greeson, Brainard, & Rosenzweig, 2001; Roth & Robbins, 2004). For the purposes of this review, only mindfulness-based treatments with specific applications to psychological and psychosocial issues will be included.

This review will also exclude an MBSR study as the program incorporated MBSR training as an adjunct to routine therapy (Weiss et al., 2005), which deviated substantially from standard MBSR protocol. One MBCT pilot study was excluded as it was combined with Task Concentration Training (Bogels, Sijbers, & Voncken, 2006), as were studies on mindfulness interventions for children or adolescents (Bootzin & Stevens, 2005; Semple, Reid & Miller, 2005).

Summary of Treatment Outcomes

Fifteen studies were included in this review, which is summarised in Table 2.1. Of these, five studies used a Waitlist Control group (WL), seven utilised treatment as usual (TAU), one compared MBSR to CBT (Koszycki, Benger, Shlik, & Bradwejn, 2007), with no control groups being used in five studies. A further five mindfulness-based treatment studies for BED were reviewed in Chapter One.
Table 2.1

*Summary of Mindfulness-based Treatment Outcome Studies with Clinical Samples and Psychosocial Variables*

<table>
<thead>
<tr>
<th>Author(s)/ Year</th>
<th>Treatment</th>
<th>Participants</th>
<th>Measures</th>
<th>Key findings</th>
</tr>
</thead>
<tbody>
<tr>
<td>Kabat-Zinn et al. (1992)</td>
<td>8 sessions MBSR <em>(n = 22)</em></td>
<td>Males and females with GAD, panic disorder with and without agoraphobia</td>
<td>BDI, BAI, FSS, HRS-A, HRS-D, frequency and severity of panic attacks. Mobility Inventory for Agoraphobia. Assessment: Pre-post, 3 month follow-up</td>
<td>Post-treatment: improvements on all measures, maintained at follow-up. Attrition = 8.3%</td>
</tr>
<tr>
<td>Miller et al. (1995)</td>
<td>3 year follow-up of Kabat-Zinn et al., 1992. <em>(n = 18)</em></td>
<td>As above</td>
<td>As above</td>
<td>All improvements maintained</td>
</tr>
<tr>
<td>Astin (1997)</td>
<td>8 sessions MBSR <em>(n = 14)</em> vs. WL <em>(n = 14)</em></td>
<td>Male and female medical and pre-medical students</td>
<td>GSI, SCI, INSPIRIT. Assessment: Pre-post, 6-9 month follow-up (GSI only).</td>
<td>MBSR: superior improvements on GSI, INSPIRIT, SCI agency of control, SCI acceptance vs. WL. Follow-up: GSI maintained. Attrition = 14.3%</td>
</tr>
<tr>
<td>Shapiro et al. (1998)</td>
<td>7 sessions MBSR <em>(n = 34)</em> vs. WL <em>(n = 34)</em></td>
<td>Male and female medical and pre-medical students</td>
<td>SCL-90, STAI, ECRS, INSPIRIT. Assessment: Pre-post</td>
<td>Improvements on all measures for MBSR vs. WL. Findings subsequently replicated in WL. Attrition: 3%</td>
</tr>
<tr>
<td>Author(s)/ Year</td>
<td>Treatment</td>
<td>Participants</td>
<td>Measures</td>
<td>Key findings</td>
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<tr>
<td>Williams et al. (2000)</td>
<td>8 sessions MBCT + TAU (n = 21) vs. TAU (n = 20)</td>
<td>Previously depressed males and females, receiving outpatient or GP care</td>
<td>HRS-D, Autobiographical memory test. Assessment: Pre-post treatment.</td>
<td>MBCT reported significantly more specific vs. overgeneral memories. No change on HRS-D, however sample was in remission from depression at pre-treatment. Attrition not reported.</td>
</tr>
<tr>
<td>Teasdale et al. (2000)</td>
<td>8 sessions MBCT + TAU (n = 63) vs. TAU (n = 69). MBCT: 4 monthly follow-up sessions</td>
<td>Males and females in remission from major depression</td>
<td>BDI, HRS-D. Relapse assessed at 12 months follow-up</td>
<td>MBCT: significantly lower rates of relapse (37%) than TAU (66%) for participants with &gt;3 previous depressive episodes. No significant differences in relapse rates for those with &lt;3 previous episodes. Attrition: MBCT = 20.6%</td>
</tr>
<tr>
<td>Teasdale et al. (2002)</td>
<td>8 sessions MBCT + TAU (n = 39) vs. TAU (n = 48)</td>
<td>Males and females in remission from major depression</td>
<td>BDI, HRS-D, MACAM. Assessment: pre-post treatment, 22 week follow-up. Relapse assessed at 12 months follow-up.</td>
<td>MBCT: significantly lower rates of relapse (36%) than TAU (62%), increased metacognitive awareness. Attrition: MBCT = 33%, TAU = 6%</td>
</tr>
<tr>
<td>Ma &amp; Teasdale (2004)</td>
<td>8 sessions MBCT + TAU (n = 31) vs. TAU (n = 38). MBCT: 1, 4 month follow-up sessions</td>
<td>Males and females in remission from major depression</td>
<td>BDI, HRS-D. Relapse assessed at 12 months follow-up.</td>
<td>&gt;3 previous episodes: MBCT group significantly lower rate of relapse (36%) than TAU (78%). &lt; 3 previous episodes: no significant difference in relapse. Attrition: MBCT = 8%</td>
</tr>
<tr>
<td>Ramel et al. (2004)</td>
<td>8 sessions MBSR + half day retreat (n = 23) vs. WL (n = 11)</td>
<td>Males and females with current or lifetime history of mood disorder</td>
<td>BDI, STAI, RSQ, DAS. Assessment: Pre-post treatment</td>
<td>MBSR: significantly greater improvements on BDI, RSQ, STAI-trait, DAS-approval and DAS-total.</td>
</tr>
<tr>
<td>Author(s)/Year</td>
<td>Treatment</td>
<td>Participants</td>
<td>Measures</td>
<td>Key findings</td>
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<tr>
<td>Shapiro et al. (2005)</td>
<td>8 sessions MBSR (n = 18) vs. WL (n = 20)</td>
<td>Male and female health care professionals</td>
<td>BSI, SWLS, SCS, MBI, PSS. Assessment: Pre-post treatment</td>
<td>MBSR: significantly greater improvements on PSS, SCS. Attrition: MBSR = 44%</td>
</tr>
<tr>
<td>Chadwick et al. (2005)</td>
<td>6 sessions adapted MBSR/MBCT (n = 11)</td>
<td>Male and female inpatients with psychosis</td>
<td>CORE, MQ. Assessment: Pre-post</td>
<td>Improvements on CORE, MQ = 42% increase. Attrition = 9%</td>
</tr>
<tr>
<td>Koszycki et al. (2007)</td>
<td>8 sessions MBSR + day retreat (n = 26) vs. 12 sessions group-CBT (n = 27)</td>
<td>Males and females with generalised social anxiety disorder</td>
<td>LSAS, SIAS, SPS, BDI, IPSM, LSDRS, QoLI. Assessment: Pre-post</td>
<td>Both groups: improvements on all measures. CBT = significantly greater improvements on LSAS-avoidance, SIAS, SPS, IPSM. Attrition: MBSR = 11.5%, CBT = 26%</td>
</tr>
<tr>
<td>Kenny &amp; Williams (2007)</td>
<td>8 sessions MBCT (n = 50)</td>
<td>Treatment-resistant males and females with depression and bipolar disorder</td>
<td>BDI. Assessment: Pre-post treatment</td>
<td>Significant improvements. Attrition = 2%</td>
</tr>
<tr>
<td>Kingston et al. (2007)</td>
<td>8 sessions MBCT (n = 9) vs. TAU (n = 13)</td>
<td>Males and females with residual depressive symptoms</td>
<td>BDI, Rumination. Assessment: Pre-post treatment</td>
<td>MBCT: improvements on BDI, but not rumination vs. TAU. Attrition: 13.2%</td>
</tr>
<tr>
<td>Author(s)/Year</td>
<td>Treatment</td>
<td>Participants</td>
<td>Measures</td>
<td>Key findings</td>
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<tr>
<td>Ree &amp; Craigie (2007)</td>
<td>8 sessions MBCT ($n = 26$)</td>
<td>Male and female outpatients with depression, anxiety, substance use and eating disorders</td>
<td>BDI, DASS, ISI, RSES, MAAS. Assessment: Pre-post, 3 month follow-up</td>
<td>Improvements on all measures, maintained at follow-up. (MAAS not administered at follow-up). Participant evaluations indicated that MBCT was perceived as being credible and acceptable. Attrition = 11.5%</td>
</tr>
</tbody>
</table>

*Note: MBSR = Mindfulness-based Stress Reduction; MBCT = Mindfulness-based Cognitive Therapy; WL = Waitlist control group; TAU = treatment as usual; CBT = Cognitive Behaviour Therapy. Measurement Tools: A list of abbreviations and the full title of each measure appears in Appendix B.*
Overall, twelve studies reported significant post-treatment improvements across all outcome variables. Of the ten studies involving a control or comparison group, two reported no significant differences between treatment and control groups on outcome variables. Ramel, Goldin, Carmona and McQuaid (2004) reported significant post-treatment improvements on trait but not state anxiety, and found significant between group differences on rumination only. However, this non-randomised study, along with the study by Kingston, Dooley, Bates, Lawlor and Malone (2007), had a small sample size, which may not have provided sufficient power to detect changes. A further confound was the greater proportion of uncontrolled treatment changes for WL than for MBSR participants (Ramel et al., 2004). The other study which did not report significant between-group differences (L. H. Shapiro, Astin, Bishop, & Cordova, 2005) used a non-clinical sample. Thus, it is possible that pre-treatment scores were not elevated, potentially creating a ceiling effect, which prevented a sufficient magnitude of change for statistical significance.

While a comparison study of MBSR and CBT found significantly greater improvements for CBT on some outcome variables, it is difficult to determine the impact of potential differences in therapeutic dosage; while the MBSR group attended a full day retreat, the participants in the CBT group had 50% more sessions (Koszycki et al., 2007).

Seven studies included follow-up assessments, ranging from 3 to 12 months, and for three MBCT studies, follow-up assessments (rate of depressive relapse) were the primary outcome variable (Ma & Teasdale, 2004; Segal et al., 2002; Teasdale et al., 2000). For the remaining four studies, post-treatment improvements were maintained on almost all outcome variables (Kabat-Zinn et al., 1992; Miller, Fletcher,
& Kabat-Zinn, 1995); while Astin (1997) reported follow-up improvements on one variable (GSI), only 17.8% of the initial sample provided data.

Reported attrition rates are generally quite low, although studies with non-clinical or in-remission samples recorded relatively higher attrition. The mean dropout rate from eight studies with clinical samples was 11.28% \((SD = 5.55; \text{range} = 2-21.7\%)\), which was considerably lower than that for the four studies with either non-clinical samples, or participants in remission \((M = 26.4\%, SD = 15.56; \text{range} = 8-44\%)\). This does not include the attrition rates from studies using medical students, as attendance was part of course requirements (Astin, 1997; S. L. Shapiro, Schwartz, & Bonner, 1998).

There was a degree of variability in therapeutic dosage, in that two MBSR studies included half to full day silent retreats (Koszycki et al., 2007; Ramel, Goldin, Carmona, & McQuaid, 2004), two MBCT studies included further sessions between post-treatment and follow-up assessments (Ma & Teasdale, 2004; Teasdale et al., 2000), and a further study made significant adaptations to the structure and duration of the treatment (Chadwick, Newman Taylor, & Abba, 2005).

Overall, mindfulness-based interventions have resulted in post-treatment improvements on a wide range of psychological and psychosocial outcome variables, with most improvements being maintained at follow-up. However, there is an important aspect of the mindfulness treatment literature that remains unknown: what are the mechanisms of change?

**Mechanisms of Change**

While the research literature suggests that mindfulness-based interventions are associated with improved psychological and mental-health functioning (Baer, 2003;
Grossman et al., 2004), the mechanisms of change in mindfulness-based interventions remain unknown, which is consistently identified as a deficit both in the mindfulness literature (Baer, 2003; Dimidjian & Linehan, 2003; Roemer & Orsillo, 2003), and psychotherapy research in general (Kazdin, 2005, 2006). The phrase *mechanisms of change* refers to the underlying processes in an intervention that are responsible for changes in the outcome measures (Kazdin, 2006). Determining mechanisms of change is important for a number of reasons. Along with an increased understanding of the effects of therapeutic interventions, an understanding of underlying processes can optimise therapeutic change through increased knowledge of the critical ingredients of an intervention, allowing for enhancement and increased dosage of these factors, the reduction or removal of inactive ingredients (Kraemer, Wilson, Fairburn, & Agras, 2002), and enhance the generalisation of laboratory-based clinical research to clinical settings (Kazdin, 2006). Consequently, this allows for the identification of moderating variables which may also influence outcome (Kazdin, 2006).

**Methods of Determining Mechanisms of Change**

Kazdin and Nock (2003) elucidate several requirements that need to be met to determine a mechanism of change in psychotherapy research. The first of these is the demonstration of a strong association between the intervention, the treatment outcome, and the hypothesised mechanism of change (Kazdin & Nock, 2003). Thus, in mindfulness-based treatments, there should be a relationship between the mindfulness-based treatment, levels of mindfulness, and symptom improvement.

The demonstration of a gradient is also essential, whereby an increase in the hypothesised mechanism of change is associated with greater change in the outcome variable (Kazdin & Nock, 2003). The existence of such a dose-response relationship
would indicate whether more of the proposed mechanism is related to increased therapeutic change; enhancing support for the mechanism playing a central role. However, this assumes a linear relationship which may not necessarily occur, and more of the mechanism may not be randomly distributed across participants (Kazdin, 2006). Related to this, experimental manipulation of the hypothesised mechanism should be associated with change in outcome variables (Kazdin & Nock, 2006). Thus, increased mindfulness practice should result in both increased levels of mindfulness and more positive outcome. Participants receiving mindfulness treatment should also have increased levels of mindfulness, and more positive outcomes, when compared to participants who do not receive mindfulness treatment.

Thirdly, the specificity of the relationship between these variables needs to be shown, whereby other potential mechanisms are demonstrated to be less plausible, as determined by repeated empirical tests (Kazdin & Nock, 2003). The assessment of more than one potential mechanism can assist in the identification of whether a particular mediator makes a more significant contribution to outcome, or provides a more plausible explanation for therapeutic change. However, the potential benefits of assessing more than one potential mechanism needs to be balanced with the increased assessment burden for participants (Kazdin, 2006). Kazdin and Nock (2003) also emphasise the importance of establishing whether changes in the proposed mechanism temporally precede change in the outcome variable, however this is often not assessed in psychotherapy research (Kazdin, 2006). As the following sections will demonstrate, these requirements have not been conclusively established by existing research into mindfulness-based treatments.
The Role of Mindfulness in Mindfulness-based Interventions.

There is currently no conclusive evidence to suggest that mindfulness itself contributes to change. All mindfulness-based interventions contain non-specific therapeutic factors related to the group environment, alongside specific factors related to the particular therapeutic intervention (Brown et al., 2007), such as cognitive therapy techniques (MBCT), hatha yoga (MBSR), or interpersonal effectiveness components (DBT), and there are currently no dismantling studies to determine which are the active ingredients. A further issue is whether mindfulness treatments actually fulfil their purported function – to increase mindfulness (Brown et al., 2007).

Many treatment studies have not measured pre and post treatment levels of mindfulness. Of the five Mindfulness-based treatments for BED reviewed in Chapter One, three of these assessed levels of mindfulness (Baer et al., 2006; Kristeller & Hallett, 1999; Smith et al., 2006), as did two of the of the preceding studies (Chadwick et al., 2005; Ree & Craigie, 2007). While levels of mindfulness were found to increase from pre to post treatment in all of these studies, there are methodological issues which compromise these findings.

Firstly, none of the studies which measured mindfulness used a control group, hence it cannot be ascertained that any increases in mindfulness were due to the effects of treatment. Secondly, two of these studies did not use well-validated measures of mindfulness. Chadwick and colleagues (2005) adapted the Mindfulness Questionnaire to suit participants’ experiences of psychosis, and although this questionnaire has been found to have good internal consistency (Chadwick et al., 2005), it has not been validated elsewhere in the literature. Kristeller and Hallett (1999) assessed mindfulness with a single item which asked participants to rate their
‘sense of mindfulness’ while eating, as validated measures were not available at the time of research.

Ree and Craigie (2007) and Smith and colleagues (2006) used a standardised and validated measure, the Mindfulness Attention Awareness Scale (MAAS). The MAAS assesses two components: attention and awareness (Brown & Ryan, 2003). Baer and colleagues (2006) used an early version of the Kentucky Inventory of Mindfulness Skills, to also measure two components: observation and non-judgemental awareness (Baer, Smith, & Allen, 2004). As previously mentioned, additional components of mindfulness have been proposed, such as non-elaborative processing and acceptance (Baer, 2007; Bishop et al., Brown et al., 2007; 2004; S. L. Shapiro et al., 2006), which more recent instruments such as the Five Facet Mindfulness Scale incorporate (Baer et al., 2006).

Thus, there are currently no published randomised studies of mindfulness-only interventions which demonstrate that mindfulness increases over the course of a mindfulness treatment, using standardised, validated and multi-componential measures of mindfulness. There is also no conclusive evidence to suggest that increases in mindfulness are related to symptom improvement.

“Do I have to do my homework”?: The Dose-Response Relationship between Homework Practice and Outcome.

The existence of a dose-response relationship between greater amounts of mindfulness practice and increased symptom improvement would enhance support for mindfulness being a central mechanism of change. The investigation of the relative contribution of homework practice provides a useful way to study the does-response
relationship, as it is insulated from the effects of group factors, and does not contain elements of other treatment approaches, such as cognitive components.

Homework is a significant component of both MBSR and MBCT interventions, with recommendations of at least 45 minutes of formal practice per day, for up to six days per week (Kabat-Zinn, 1990; Segal et al., 2002). One exception to this is the MBCT/MBSR pilot study for psychosis, in which homework requirements were considerably more lenient, in accordance with the level of functioning of this client group (Chadwick et al., 2005). Homework practice may also represent an appreciable burden for some participants, particularly those already struggling with psychological issues, and may become a hindrance to participation – although reported attrition rates suggest otherwise. Thus, the relationship between homework practice and therapeutic outcome has implications for future treatment programs.

The majority of research has not investigated this relationship, and the inclusion of homework in mindfulness-based interventions appears to be based more upon clinical and anecdotal experience than empirical data. Studies that have explored this have produced mixed findings. Shapiro and colleagues (1998) found that trait anxiety decreased as homework compliance increased, while Speca and colleagues (2000) found that daily meditation practice significantly predicted mood improvement in a sample of cancer outpatients, accounting for 15.5% of the variance. There was also a significant correlation between meditation time and reductions in mood disturbance. Ramel and colleagues (2004) found that the amount of meditation practice significantly predicted follow-up rumination after controlling for intake rumination, depression and anxiety, accounting for 15% of the variance. The previously mentioned mindfulness-based treatment for binge eating (Kristeller & Hallett, 1999) showed that homework practice was significantly correlated with
changes in binge eating and depression, but paradoxically, not self-reported ‘sense of mindfulness’.

By contrast, Carlson et al. (2003) did not find a significant correlation between homework practice, mood and stress change scores – however, this could be attributed to the low pre-treatment scores which were comparable to post-treatment scores in other research (Speca et al., 2000). Astin (1997) also failed to find a significant relationship between homework practice and outcome variables. Other research into an intensive 10-day meditation retreat found that the frequency of meditation practice (more than 8 hours per day) was not associated with outcome measures (Ostafin et al., 2006), however the assessment period may not have been of a sufficient duration to determine this.

A recent study using undergraduate students has investigated the relationship between levels of everyday or trait mindfulness, measured by the FFMQ and the MAAS, and a form of state mindfulness immediately following a formal meditation period, measured by the Toronto Mindfulness Scale (TMS) in experienced and non-experienced meditators (Thompson & Waltz, 2007). Contrary to predictions, there was no significant relationship between everyday mindfulness and state mindfulness in either group, although the experienced meditators reported significantly higher levels of state mindfulness following formal practice (Thompson & Waltz, 2007). Although these findings may reflect a lack of measurement sensitivity, particularly with the TMS (Thompson & Waltz, 2007), these findings warrant further investigation, as formal practice is such an integral feature of most mindfulness-based interventions.

From the available data on follow-up continued meditation practice, it appears that regular practice did not pose an inordinate burden for many participants. At the
three month follow-up of an MBCT program (Ree & Craigie, 2007), participants reported on average 2.78 days per week of formal practice (listening to a meditation CD), and an average of 5.21 days per week engaging in informal practice (mindfulness in everyday life). Three year follow up MBSR data (Miller et al., 1995) found that 55% of participants maintained formal practice, while 88% continued informal practice. However, neither of these studies explored the relationship between maintained practice and outcome. There is some indication that mindfulness may produce some discomfort for some participants, as one study has found that levels of positive affect significantly decreased following a 15-minute meditation for beginning meditators, whereas experienced meditators reported no change (Thompson & Waltz, 2007).

Thus, research to date suggests that while many participants are willing to engage in homework practice, there are inconclusive findings as to whether this practice enhances or contributes to outcome (Coelho et al., 2007). Thus, while there has been tentative suggestion of a gradient, methodologically sound research has yet to validate this.

**Research Design: Experimental Manipulation**

The dose-response relationship would be strengthened through experiments in which the proposed mechanism is altered or varied across conditions, particularly if it is demonstrated that outcome fluctuates as a direct variance of the mechanism (Kazdin, 2006). Thus, participants receiving mindfulness treatment should also have increased levels of mindfulness, and more positive outcomes, when compared to participants who do not receive mindfulness treatment. This could be demonstrated through a research design, in which a mindfulness treatment was compared to a
control group or comparison treatment on levels of mindfulness (Kazdin, 2006; Kazdin & Nock, 2003). As highlighted earlier, this research has yet to be conducted.

**Group Cohesion: An Alternative Mechanism of Change?**

A competing mechanism of change in any group-based interventions is the unique characteristics of the group format. Mindfulness-based interventions have been delivered in the group format in all but one study of patients with psoriasis (Kabat-Zinn et al., 1998), and interestingly, this is the only study in which significant post-treatment psychosocial improvements were not found. Attrition (38% dropout) was also considerably higher than that of most MBSR research (Kabat-Zinn et al., 1998), which may reflect the importance of the group format for participant retention.

Mason and Hargreaves (2001) conducted qualitative research to investigate MBCT from the participant viewpoint, and grounded theory analysis of this relatively small sample ($n = 7$) revealed that all participants found the group environment and format to be supportive. They believed that this facilitated skill acquisition, which in turn led to discoveries, relaxation and attitudinal change (Mason & Hargreaves, 2001). While it is feasible that these group factors may have been necessary to enhance motivation to practice (Kabat-Zinn et al., 1992), they may not be sufficient for change, or the only active ingredient. Hence, group cohesion may function as a moderating, rather than a mediating variable. However as no mindfulness-based treatment research has controlled for, or measured this construct, the role of group factors remains unknown, and may be a viable alternative mechanism of change. Likewise, only one of the group-CBT treatments for binge eating disorder (Agras et al., 1995) has measured group factors, as shall be discussed further.
Group therapy is a complex and dynamic process, and the group therapy literature has been informed by contributions from clinical and social psychology, personality and systems theories, and most major psychotherapeutic approaches (Burlingame, MacKenzie, & Strauss, 2004). Hence, identifying the variables that are most related to change is difficult. The work of Yalom (2005) has been instrumental for clinicians and researchers in the development of principles for effective group therapy processes. He has identified eleven primary therapeutic factors: installation of hope; universality; imparting information; altruism; the corrective recapitulation of the primary family group; development of socialising techniques; imitative behaviour; interpersonal learning; group cohesion; catharsis and existential factors - of which interpersonal learning and cohesion were considered most important (Yalom, 2005).

Indeed, the importance of cohesion in group psychotherapy has been paralleled with that of the therapeutic relationship in individual psychotherapy (MacKenzie, 1998; Yalom, 2005).

Notwithstanding the complexity of the group cohesion construct, and its diverse origins, the emerging literature has also been impeded by the lack of a unified definition (Burlingame et al., 2004; Yalom, 2005). Group cohesion is now defined as global feelings of warmth, comfort and sense of belonging, and acceptance and support within the group (Yalom, 2005). Burlingame and colleagues (2002) elucidate both intrapersonal and interpersonal elements of cohesion; the sense of cohesion felt within the individual member, along with the sense felt within the group, in terms of mutual liking, trust, support, and mutual stimulation to facilitate learning and commitment. Further, three cohesive relationships develop within the group – member-to-group, member-to-member, and member-to-leader (Burlingame et al., 2002).
Empirical evidence indicates that group cohesion influences therapeutic outcome. A meta-analysis of 111 studies found that compared to untreated controls, the majority of participants in group therapy programs reported positive outcomes, with an average effect size of 0.58 (Burlingame, Fuhriman, & Mosier, 2003). Kivlighan and Lilly (1997) explored group climate development in a college sample, and found that the mid-treatment pattern of engagement (high) and avoidance (low) as measured by the Group Climate Questionnaire (GCQ), was a significant predictor of therapeutic gain. Castonguay, Pincus, Agras and Hines (1998) investigated the role of group climate in an adjunct study to the group-CBT treatment for binge eating disorder (Agras et al., 1995). Participants’ perception of group engagement increased significantly, in a linear pattern, over the course of therapy. Results from discriminant function analysis indicated that early-treatment measures of engagement predicted post-treatment clinical improvement for 70% of participants, however mid-treatment avoidance predicted improvement at mid-treatment (Castonguay et al., 1998), which is in contrast to the findings of Kivlighan and Lilly (1997). Scores for the final stage of treatment were not significant (Castonguay et al., 1998). As these group factors were not analysed as covariates, so it is unknown whether this was a significant mediating factor in the group-CBT treatment.

In summary, elements of group cohesion, specifically engagement and avoidance, have been found to be related to positive outcome for participants in group treatments, although there are contradictory findings regarding the stage at which these factors have most influence. Thus, it is reasonable to regard group factors as an alternative and viable mechanism of change in all group based formats, including mindfulness-based interventions, and the contribution to outcome requires further exploration.
Conclusions, Aims and Hypotheses of the Current Research Project

As outlined in Chapter One, Bulimia Nervosa and Binge Eating Disorder are chronic disorders which significantly impact on the quality of life of individuals who suffer from them. After more than two decades of research on binge eating, there remains considerable diagnostic, etiological and treatment uncertainty, and substantial gaps in knowledge regarding the ED-NOS category, which is thought to be the most common clinical presentation.

Recent debate has centred upon the utility of maintaining current diagnostic boundaries, particularly the binge frequency criterion, for which there is no empirical support. Thus, a transdiagnostic approach to research and treatment has been suggested. This is underscored by the recent proposition of transdiagnostic processes which are thought to underlie a range of disorders, including eating disorders. To this end, this research project introduced a Transdiagnostic Process Model of Binge Eating in Chapter One, which provides an explanation for the development and maintenance of binge eating-related disorders, encompassing BN, BED and ED-NOS, and provides the first known integration of existing etiological models.

There is an identified need for more effective group treatments for BN and BED, as the current central treatments, CBT and IPT, demonstrate only modest success. In addition, there is currently limited evidence to support the effectiveness of any one treatment approach on primary and secondary outcome variables, particularly in terms of clinically significant change. A new treatment approach for eating disorders demonstrating promise: mindfulness. The relatively new area of mindfulness-based treatments has shown encouraging findings on both primary and secondary outcome variables for BED. There are as yet no known mindfulness-based treatment studies for BN. Further, mindfulness targets the transdiagnostic processes
which have been suggested to underlie eating disorders, and which have been outlined in the Transdiagnostic Process Model of Binge Eating.

Thus, the first aim of the research project is to investigate the effectiveness of a mindfulness-based group treatment for binge-eating related disorders. As this treatment approach addresses the transdiagnostic processes hypothesised to underlie all binge-related eating disorders, it is considered to be suitable for BN, BED, and ED-NOS. Therefore, this research project will be the first known treatment study to include ED-NOS participants, and can begin to address the current gaps in knowledge regarding response to treatment for this diagnostic category. Measures of both primary and secondary outcome variables will be included, and frequencies of purging and non-purging compensatory behaviours will be included. Clinical significance will also be assessed.

In order to evaluate the effectiveness of a mindfulness-based group treatment for BN, BED and ED-NOS, a randomised-controlled trial will be conducted, in which female participants who meet criteria for these disorders will be randomly assigned to an eight session group-mindfulness treatment or waitlist condition. It is hypothesised that participants in the treatment condition will report significant decreases in primary outcome variables (binge eating and/or compensatory behaviours), and secondary outcome variables (client functioning, eating-disordered related cognitions, depression, anxiety, stress, self-esteem and mindfulness), compared to participants in the waitlist condition. It is predicted that these improvements will be maintained at one-month follow-up. Further, it is hypothesised that these improvements will also be clinically significant: pre to post-treatment improvements will meet criteria for reliable change, frequencies of binge eating and/or compensatory behaviours will be
below the DSM-IV diagnostic criteria, and mean post-treatment scores on secondary outcome variables will no longer be within specified clinical ranges.

The preceding review of mindfulness-based treatments in this chapter has indicated that this literature is rapidly expanding and being widely applied to diverse client populations, yet the construct of mindfulness, its contribution to change, and the underlying mechanisms are not clearly understood. Thus, the second aim of this research project is to address some of the methodological limitations of previous research, and to begin to investigate the mechanisms of change. This will be done by conducting a randomised control trial research design, measuring levels of mindfulness pre and post treatment, examining the contribution of homework practice to outcome, and by determining the influence of group factors.

Previous research has not conclusively demonstrated a relationship between the mindfulness-based treatments, levels of mindfulness, and symptom improvement, using a validated and multi-componential measure of mindfulness. A clear dose-response relationship has not yet been demonstrated, whereby increased practice or ‘dosage’ of mindfulness has been shown to be related to enhanced outcomes. Further, the specificity of the relationship between mindfulness and positive outcome has not been established, whereby other potential mechanism are shown to be less plausible (Kazdin & Nock, 2003).

In order to address these limitations, the following will occur. Firstly, participants will be randomised to a mindfulness treatment or waitlist condition. The treatment will be a ‘mindfulness-only’ condition, whereby it will not contain components from other treatment approaches. This allows for the experimental manipulation of mindfulness as they hypothesised mechanism of change. As outlined in the first hypothesis, it is predicted that participants randomised to the treatment
condition would report significant pre to post treatment symptom improvements compared to participants in the waitlist condition.

Secondly, a validated, multi-componential measure of mindfulness will be used to investigate whether levels of mindfulness increase across treatment, and whether levels of mindfulness are related to symptom improvement. It is hypothesised that levels of mindfulness will significantly increase from pre to post treatment, and be maintained at one-month follow-up. Levels of mindfulness will significantly predict symptom improvement.

Thirdly, the amount of formal and informal homework mindfulness practice will be recorded weekly. In the first instance it is hypothesised that homework meditation practice would be significantly related to both levels of mindfulness and symptom improvement in the treatment group. Following this, the contribution of formal and informal practice will be examined. Given the paucity of research in this area this approach is largely exploratory, and clear predictions cannot be made.

Finally, a measure of group cohesion will be included, to investigate an alternative mechanism of change. Measures of engagement and avoidance will be administered at each session. It is hypothesised that levels of group engagement would significantly increase from early to late treatment. In line with previous research findings, it is predicted that high mid-treatment levels of engagement and low mid-treatment levels of avoidance would be related to outcome in the treatment group. However, it is predicted that levels of group cohesion would not account for more of the variance in outcome than levels of mindfulness.
CHAPTER THREE

A Randomised-Controlled Trial of a Mindfulness-based Group Treatment versus Waitlist Control Group for Bulimia Nervosa, Binge Eating Disorder and Eating Disorder-Not Otherwise Specified.

Method

Participants

Female participants were recruited from the Brisbane metropolitan area, through newspaper print advertisements or referrals from private practitioners and the Eating Disorders Association of Queensland. Two hundred and fifteen women initially responded to advertising or were referred to the trial. Figure 2 presents an overview of participant flow, including reasons for exclusion and drop-out. Of the 186 women who participated in the initial screening telephone call, 17 women were excluded. Exclusion criteria were (a) being younger than 18 years of age, (b) not binge eating, (c) having a current diagnosis of Anorexia Nervosa, or (d) BMI below 18.

One hundred and forty-five women then attended a semi-structured clinical interview, following which a further 19 women were excluded. Exclusion criteria consisted of (a) over-eating rather than binge eating, (b) significant levels of dissociation, (c) current or recent history of psychosis, (d) immediate suicide risk, (e) severe and frequent self-harm, or (f) substance use at harmful levels that could interfere with treatment. In total, One hundred and twenty-six women commenced treatment, 61 in the active treatment condition and 65 were allocated to the waitlist condition. Forty-one women in the active treatment provided post-treatment data,
while 31 women from the waitlist condition provided post-treatment data for use as comparison.
Note: * Withdrew following intake interview, did not provide baseline assessment

Figure 3. Diagram of participant flow: Response, eligibility, randomisation, treatment completion, drop-out, post-treatment and follow-up rates.
Demographic Data. One hundred and twenty-six women were randomised to the treatment group or waitlist control group (WL), of which 114 provided demographic data (Treatment group = 54; WL = 60). The mean age was 37.93 years (SD = 12.04; range = 19 to 66 years), and the mean BMI was 28.96 (SD = 8.28; range = 18 to 58.92). Of these women, 47% were married, 38.3% were single, and 14% were divorced. The majority of participants were in the workforce, with 47.4% in full-time employment, 14.9% in part-time or casual employment, 14% reported performing domestic duties, 8.8% were students, 6.1% were receiving a disability pension, 4.4% were retired, 2.6% were unemployed, and 1.8% reported ‘other’ employment circumstances. More than one half of the sample had completed tertiary education (56.1%), 22.8% had completed secondary education, 18.4% had attended TAFE (Technical and Further Education) or completed an apprenticeship, and 2.6% had completed primary school only. These education levels are considerably higher than the general population, as at December 2006, 21% of Australians reported having completed tertiary education, with approximately 20% having completed secondary education (Australian Bureau of Statistics, 2006).

Measures

Measures included demographic, diagnostic and screening measures, primary outcome measures (bingeing and compensatory behaviours) and secondary outcome measures (psychosocial variables). Process measures included assessments of mindfulness practice, and group cohesion.
**Demographic, Diagnostic and Screening Measures**

The diagnostic measure was the Eating Disorders Examination, and screening measures included selected items from the Structured Clinical Interviews IV and Structured Clinical Interview II, Alcohol Use Disorders Identification Test, Drug Abuse Screening Test, and selected items from the Dissociative Experiences Scale.

**Demographic Questionnaire.** A Demographic Questionnaire of standard variables was included in the pre-treatment assessment package, which measured participants’ age, marital status, employment status, education level, meditation experience, previous or current psychological treatment and psychiatric history (see Appendix D for a copy of the Demographic Questionnaire).

**Eating Disorders Examination (EDE).** The EDE is a standardised investigator-based assessment interview for the assessment of specific eating disorder psychopathology for screening and diagnostic purposes (Fairburn & Cooper, 1993), and has been considered to be the gold standard of eating disorder assessment (Celio, Wilfley, Crow, Mitchell, & Walsh, 2004; Williamson, Anderson, Jackman, & Jackson, 1995). In the current research project, the EDE was used as both a screening and diagnostic tool. The EDE provides an assessment of the participant’s present state, with a focus on the previous four weeks, and generates descriptive information regarding the frequency of overeating and compensatory behaviours. There are four subscales which assess specific eating disorder psychopathology (Restraint, Eating Concern, Shape Concern, and Weight Concern). The Restraint (R) subscale addresses the degree of restraint over food intake, avoidance of eating certain foods, the presence of dietary rules, and the desire to have an empty stomach. The Eating Concern (EC) subscale addresses preoccupation with food and eating, the fear of losing control over eating, discomfort with social eating, eating in secret, and the
degree of guilt experienced after eating. The Shape Concern (SC) subscale addresses the desire to have a flat stomach, feelings of fatness, the importance of shape in terms of self-evaluation, preoccupation and dissatisfaction with shape, fear of weight gain, extent of discomfort in seeing one’s own body, and also the avoidance of others seeing their body. The Weight Concern (WC) subscale addresses the importance of weight in self-evaluation, the intensity of reaction to prescribed weighing, preoccupation, dissatisfaction, and the desire to lose weight. Subscale scores range from 0 to 6; higher scores are reflective of greater psychopathology (Fairburn & Cooper, 1993).

The EDE has been shown to have acceptable internal consistency (R = .75, EC = .78, WC = .68, SC = .82; Cooper, 1989). Inter-rater reliability was found to be high for subscales (R = .95, WC = .99, EC = .94, SC = .90; Rivzi, Peterson, Crow, & Agras, 2000), and behavioural items (Objective Binge Episodes = .99, Subjective Binge Episodes = .92, Objective Binge Days = .99, Subjective Binge Days = .99, Vomit Episodes = 1.0, Vomit Days = 1.0; Rivzi et al., 2000). One week test-retest reliability has also been found to be acceptable (R = .76, SC = .76, WC = .71, EC = .75, Objective Binge Episodes = .85, Objective Binge Days = .83, Subjective Binge Days = .41, Subjective Binge Episodes = .36, Vomit Days = .97, Vomit Episodes = .97; Rivzi et al., 2000). There are no recommendations for clinical ranges or cut-offs for EDE subscales, however Table 3.1 presents the mean subscale scores reported in EDE studies for BN and BED (Fairburn & Cooper, 1993; Grilo, Masheb, Lozano-Blanco, & Barry, 2004; Wilfley, Schwartz, Spurrell, & Fairburn, 2000), which indicates that scores on the R and EC subscales are generally lower in BED versus BN populations (See Appendix E for a copy of the EDE).
Table 3.1

**EDE Subscale Means for Bulimia Nervosa and Binge Eating Disorder**

<table>
<thead>
<tr>
<th>Subscale</th>
<th>BN</th>
<th>BED</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Wilfley et al., 2000</td>
<td>Fairburn &amp; Cooper, 1993</td>
</tr>
<tr>
<td>R</td>
<td>3.10</td>
<td>3.45</td>
</tr>
<tr>
<td>EC</td>
<td>3.4</td>
<td>2.63</td>
</tr>
<tr>
<td>WC</td>
<td>3.1</td>
<td>3.73</td>
</tr>
<tr>
<td>SC</td>
<td>2.9</td>
<td>3.9</td>
</tr>
<tr>
<td>Total</td>
<td>-</td>
<td>-</td>
</tr>
</tbody>
</table>

Note: BN = Bulimia Nervosa; BED = Binge eating Disorder; R = Restraint Subscale; EC = Eating Concern Subscale; WC = Weight Concern Subscale; SC = Shape Concern Subscale.

Structured Clinical Interview-IV (SCID-IV). The SCID-IV is a widely used tool to identify DSM-IV Axis I diagnostic categories in research programs (First, Spitzer, Gibbon, & Williams, 1996). The SCID-IV includes obligatory questions based on diagnostic criteria, and can be tailored to address the specific needs of the research protocol. For screening purposes of the current research, only items from the Psychotic disorders subscale for screening purposes. If participants answered ‘no’ to items 1 through to 5, the remaining questions were not asked. If participants responded ‘yes’ to any items, further questions were asked by the interviewer, and clinical judgment was used to determine whether the participants would be excluded. In the case of uncertainty, the primary research supervisor was consulted. (See Appendix F for SCID-IV items).

The Structured Clinical Interview-II (SCID-II). The SCID-II is a structured interview to identify DSM-IV Axis II disorders in research programs (First, Gibbon,
Spitzer, Williams, & Benjamin, 1997). The SCID-II has been found to be a reliable screening instrument for personality disorders, with good internal consistency for Borderline Personality Disorder ($\alpha = .71$), and very high inter-reliability estimate (ICC = .97), which is regarded as representing an excellent agreement that is beyond chance (Farmer & Chapman, 2002). For the purposes of the current research, only the Borderline Personality Disorders items were used as a means of risk assessment for suicide and self-harm, rather than for the purposes of diagnosis. (See Appendix G for SCID-II items).

*Alcohol Use Disorders Identification Test (AUDIT).* The AUDIT is a 10-item self-report screening measure developed for three domains of hazardous or harmful drinking: alcohol consumption, dependence, and related consequences (Saunders, Aasland, Babor, de le Fuente, & Grant, 1993). Respondents rate the frequency of certain alcohol-related behaviours on a scale of 0 to 4, which are summed to arrive at a total score, with higher scores being representative of harmful drinking levels. A cut-off score of 8 has been associated with hazardous drinking, while a score of 13 may indicate alcohol dependence (Saunders et al., 1993). The AUDIT has good psychometric qualities, with 6-week test-retest of .88, and internal consistency of .83 (Daeppen, Yersin, Landry, Pecoud, & Decrey, 2000). Participants with elevated scores (8 or higher) were not systematically excluded from treatment; clinical judgement was used to determine whether the substance use would interfere with their capacity to participate and/or benefit from the program. (See Appendix H for a copy of the AUDIT).

*Drug Abuse Screening Test (DAST).* The DAST is a 20-item screening instrument for drug abuse problems over the previous twelve months (Skinner, 1982). Respondents indicate ‘yes’ or ‘no’ to items, which are summed to form a total score,
with higher scores indicating increasing levels of drug abuse. While it was initially developed as a 28-item measure, the current 20-item measure has been found to have good psychometric properties, with internal consistency estimates of .92 in an outpatient sample and two week test-retest estimates of .78 (Cocco & Carey, 1998). A cut-off score of between 5 and 6 has been recommended (Cocco & Carey, 1998). Participants with elevated scores (6 or above) were not systematically excluded from treatment; clinical judgement was used to determine whether the substance use would interfere with their capacity to participate and/or benefit from the program. (See Appendix I for a copy of the DAST).

*Dissociative Experiences Scale (DES).* Two items from the DES were used to determine whether participants experienced dissociative episodes. The DES is a 28-item self-report screening instrument used to identify the presence of dissociative disorders, and has been found to successfully detect the presence of dissociative experiences, although follow-up clinical evaluation is strongly recommended (Steinberg, Rounsaville, & Cicchetti, 1991). Although there is no conclusive empirical evidence that demonstrates dissociation during or following meditation, there have been anecdotal reports of an association between meditation and adverse intrapersonal effects such as impaired reality testing and disorientation (Shapiro, 1992), which has contributed to speculation as to whether meditation could be unsuitable, or perhaps even harmful, for susceptible individuals (Otis, 1984). Although reports of adverse experiences have generally occurred during intensive meditation retreats, a clinical decision was made to exclude participants who may have the potential to dissociate. This decision was based on the ethical principle of harm prevention for the individual, particularly if dissociation occurred during
homework practice, along with the potential for distress for group members who may witness it.

For the purposes of this study, two items of the DES were chosen for inclusion in the semi-structured interview: “Do you ever have the experience of feeling that yourself, other people, objects, or the world around you aren’t real?”; “Do you often have the experience of driving or riding in a car, bus, or train and suddenly realising that you don’t remember what has happened for part or all of the trip?”. If participants responded affirmatively to either item, clinical judgement was used to determine whether the experience was more consistent with dissociation or experiences such as daydreaming or non-attention. Participants who reported a prior history of dissociation were not excluded if they had also previously practised meditation without adverse experiences. In any instance of clinical uncertainty, the clinical supervisor was consulted.

Outcome measures included the Eating Disorders Inventory, a Binge and Compensatory Behaviour Frequency Measure, Outcome Questionnaire 45.2, Depression Anxiety and Stress Scales, Five Facet Mindfulness Questionnaire, Rosenberg Self-Esteem Scale, and Group Climate Questionnaire. A Mindfulness Homework Record form was used to determine the type and amount of homework practice, and a demographic questionnaire was also administered.

**Primary Outcome Measure**

*Binge and Compensatory Behaviour Recall Measure (BCBR).* A seven day binge and compensatory behaviour recall measure was used to assess the weekly frequencies of binges and compensatory behaviour, based on diagnostic questions from the EDE. This type of assessment of binge and purge behaviours has been
widely used in treatment outcome studies (Agras et al., 1992; Leung, Waller, & Thomas, 2000; Wilson et al., 1999), and is regarded to be a reliable method of assessing eating disorder-related behaviours (Telch, Agras, Rossiter, Wilfley, & Kenardy, 1990). It has been particularly recommended if multiple assessments are required, due to the burdensome nature of administering the EDE (Sysko, Walsh, & Fairburn, 2005). Comparisons of both methods have revealed a significant correlation between the EDE and recall method in terms of measuring change in bingeing and vomiting (Sysko et al., 2005). While the EDE distinguishes between Objective and Subjective Binge Episodes, the BCBR does not make this distinction, in line with recent research which suggests that the sense of loss of control, rather than quantity of food consumed, determines the presence of binge eating (Beglin & Fairburn, 1992; Johnson, Boutelle, Torgrud, Davig, & Turner, 2000). The BCBR distinguishes binge episodes from overeating by asking participants to indicate whether there was a sense of loss of control (See Appendix J for a copy of the BCBR).

**Secondary Outcome Measures**

**Eating Disorder Inventory - 3 (EDI-3).** The EDI-3 is a self-report measure of symptoms and psychological characteristics associated with anorexia nervosa, bulimia nervosa and ED-NOS (Garner, 2004). It contains 91 items on a 6-point scale format, whereby respondents endorse whether each item applies to them “Always”, “Usually”, “Often”, “Sometimes”, “Rarely”, or “Never”. The EDI-3 has been recommended for use as a screening and diagnostic instrument, an outcome measure, and to differentiate between levels of severity, and diagnostic subtypes (Carter, McFarlane, & Olmstead, 2004).
The EDI-3 consists of twelve subscales, all of which have acceptable psychometric properties. The Drive for Thinness subscale assesses excessive concern with dieting, the fear of weight gain, and a preoccupation with weight (α = .82). The alpha for the current sample was .78. The Bulimia subscale assesses the tendency to think about or engage in binge eating (α = .83). The alpha for the current sample was .84. The Body Dissatisfaction subscale measures dissatisfaction with overall body shape, and the size of particular body regions (α = .88). The alpha for the current sample was .83. The Low Self-esteem subscale measures the extent of negative self-evaluation, and perceived inability to achieve personal standards (α = .81). The alpha for the current sample was .87. The Personal Alienation subscale assesses the sense of emptiness, aloneness and poor self-understanding (α = .78). The alpha for the current sample was .82. The Interpersonal Insecurity subscale measures discomfort in social situations and difficulty expressing thoughts and feelings (α = .73). The alpha for the current sample was .82. The Interpersonal Alienation subscale measures disappointment, distance, lack of trust and understanding in relationships (α = .69). The alpha for the current sample was .73. The Interoceptive Deficits subscale assesses difficulty with recognition and responsiveness to emotional states (α = .79). The alpha for the current sample was .89. The Emotional Dysregulation subscale measures affective instability, impulsivity, recklessness, anger and self-destructiveness (α = .67). The alpha for the current sample was .75. The Perfectionism subscale assesses the extent of belief in the importance of personal achievement, whereby only the highest standards of performance are acceptable (α = .74). The alpha for the current sample was .77. The Asceticism subscale assesses the tendency to seek virtue through pursuit of spiritual ideals such as self-discipline, self-sacrifice, control of bodily urges, and self-denial (α = .64). The alpha for the current sample was .66. The Maturity
Fears subscale measures the desire to retreat into the security of childhood (α = .82).

The alpha for the current sample was .66. Table 3.2 contains the cut-offs for clinical ranges for each subscale (Garner, 2004). (See Appendix K for a copy of the EDI-3).

**Table 3.2**

*Clinical Ranges of the EDI-3 Subscales*

<table>
<thead>
<tr>
<th>EDI-3 Subscale</th>
<th>Low</th>
<th>Typical</th>
<th>Elevated</th>
</tr>
</thead>
<tbody>
<tr>
<td>Drive for Thinness</td>
<td>0 - 16</td>
<td>17 - 24</td>
<td>25 - 28</td>
</tr>
<tr>
<td>Bulimia</td>
<td>0 - 4</td>
<td>5 - 18</td>
<td>19 - 32</td>
</tr>
<tr>
<td>Body Dissatisfaction</td>
<td>0 - 21</td>
<td>22 - 35</td>
<td>36 - 40</td>
</tr>
<tr>
<td>Low Self-esteem</td>
<td>0 - 8</td>
<td>9 - 16</td>
<td>17 - 24</td>
</tr>
<tr>
<td>Personal Alienation</td>
<td>0 - 8</td>
<td>9 - 16</td>
<td>17 - 28</td>
</tr>
<tr>
<td>Interpersonal Insecurity</td>
<td>0 - 6</td>
<td>7 - 14</td>
<td>15 - 28</td>
</tr>
<tr>
<td>Interpersonal Alienation</td>
<td>0 - 5</td>
<td>6 - 12</td>
<td>13 - 28</td>
</tr>
<tr>
<td>Interoceptive Deficits</td>
<td>0 - 10</td>
<td>11 - 20</td>
<td>21 - 36</td>
</tr>
<tr>
<td>Emotional Dysregulation</td>
<td>0 - 3</td>
<td>4 - 9</td>
<td>10 - 32</td>
</tr>
<tr>
<td>Perfectionism</td>
<td>0 - 9</td>
<td>10 - 16</td>
<td>17 - 24</td>
</tr>
<tr>
<td>Asceticism</td>
<td>0 - 8</td>
<td>9 - 15</td>
<td>16 - 28</td>
</tr>
<tr>
<td>Maturity Fears</td>
<td>0 - 5</td>
<td>6 - 12</td>
<td>13 – 32</td>
</tr>
</tbody>
</table>

_Five Facet Mindfulness Questionnaire (FFMQ)._ The FFMQ is a 39-item self-report measure of mindfulness, on which respondents answer on a 5-point Likert scale from 1 (*never or very rarely true*) to 5 (*very often or always true*), with higher scores indicating increased levels of mindfulness. The FFMQ is an integration of five widely used mindfulness instruments (Baer et al., 2006). Factor analysis of all combined items revealed five subscales, all with acceptable psychometric properties. The Nonreact subscale assesses the capacity to remain non-reactive whilst experiencing distressing emotions, thoughts and/or difficult situations (α = .75). The alpha for the
current sample was .85. The Observe subscale captures the ability to notice and attend to internal and external stimuli (α = .83). The alpha for the current sample was .83. The Act with Awareness subscale measures the capacity to maintain attention on the present moment experience (α = .87). The alpha for the current sample was .90. The Describe subscale refers to the ability to identify and label emotions and thoughts (α = .91). The alpha for the current sample was .88. The Nonjudge subscale assesses the capacity to refrain from placing judgements on experience (α = .87). The alpha for the current sample was .90. Significant positive correlations were found with constructs predicted to be related to mindfulness, such as emotional intelligence and the Describe subscale (r = .60). Significant negative correlations have been observed with constructs hypothesised to be unrelated to mindfulness, such as dissociation and the Act with Awareness subscale (r = -.62), and alexithymia with the Describe subscale (r = .68; Baer et al., 2006). While cut-off scores or clinical ranges have yet to be established, norms from a large non-clinical student sample (n = 613) have provided the following means: Observe = 24.49; Describe = 26.45; Act with Awareness = 25.21; Nonjudge = 27.79; Nonreact = 20.46 (Baer et al., 2006). (See Appendix L for a copy of the FFMQ).

**Outcome Questionnaire 45.2 (OQ45).** The OQ45 is a 45-item self-report scale that measures client change on three functional domains over the course of therapeutic interventions (Lambert & Hansen, 1996). Clients respond to each item based on how they have felt over the previous week, on a 5 point Likert scale, from 0 (never) to 4 (almost always), with higher scores representing increasing levels of psychopathology. The OQ-45 consists of three subscales that assess domains of functioning, namely Symptom Distress (SD), Interpersonal Relations (IR) and Social Role (SR). The total scale has been found to have adequate 3 week test-retest
reliability ($\alpha = .84$) and internal consistency reliability ($\alpha = .93$) (Lambert, Burlingame et al., 1996). The SD subscale contains 25 items that are reflective of the most prevalent disorders experienced by adults, such as anxiety, mood and substance-use disorders, and has excellent internal consistency ($\alpha = .90$). The alpha for the current sample was .92. The IR subscale contains 11 items that assess the current level of interpersonal functioning, and adequate internal consistency ($\alpha = 0.74$). The alpha for the current sample was .80. The SR subscale contains 9 items that assess the current level of social role functioning, and adequate internal consistency ($\alpha = .66$). The alpha for the current sample was .61. The OQ-45 has demonstrated sensitivity to change in a large, multi-site study ($n = 5553$). Results showed that the OQ-45 was able to detect significantly more improvement in a clinical versus control group, with a large effect size ($d = .50$) (Vermeersch et al., 2004). A total OQ-45 score of 63 has been suggested as cut-off score to differentiate between clinical and non-clinical samples. The clinical cut-offs for subscales are: Symptom Distress (36), Interpersonal Relations (15), and Social Role (12; Lambert & Hansen, 1996). (See Appendix M for a copy of the OQ45).

*Rosenberg Self-Esteem Scale (RSES).* The RSES is one of the most widely used and highly regarded self-esteem measures (Heatherton & Wyland, 2003). The RSES contains five positively and five negatively scored items, on which respondents respond on a six-point Likert Scale, from 1 (*Strongly Disagree*) to 6 (*Strongly Agree*), with low scores being indicative of higher self-esteem (Rosenberg, 1965). Despite its widespread use, little psychometric data is available, and few tests have been used for comparison (Johnston, Wright, & Weinman, 1995). Of the available reliability information, good internal reliability ($\alpha = .92$) has been reported (Heatherton & Wyland, 2003). The alpha for the current sample was .84. Although specific cut-off
scores and clinical ranges are not available, the mean score of 34.5 has been reported for a non-clinical female sample (Johnston et al., 1995). (See Appendix N for a copy of the RSES).

*Depression and Anxiety and Stress Scale (DASS)*. The DASS is a 21 item self-report instrument, comprised of three 7-item subscales which measure depression, anxiety and stress (Lovibond & Lovibond, 1995). Respondents rate each item based on the extent to which it applied to them over the previous week, on a 4 point Likert scale, from 0 (*did not apply to me*) to 3 (*applied to me very much or most of the time*) with higher scores representing increasing levels of symptomatology. The Depression subscale assesses dysphoric mood, sadness and worthlessness (α = .88). The alpha for the current sample was .92. The Anxiety subscale measures symptoms of physical arousal (α = .82). The alpha for the current sample was .75. The Stress subscale measures irritability, tension, and tendency to over-react to events (α = .90; Lovibond & Lovibond, 1995). The alpha for the current sample was .84. Table 3.3 reports the clinical ranges for each subscale. (See Appendix O for a copy of the DASS).

Table 3.3

*Clinical Ranges for DASS Subscales*

<table>
<thead>
<tr>
<th>DASS Sub-scale</th>
<th>Normal</th>
<th>Mild</th>
<th>Moderate</th>
<th>Severe</th>
<th>Extremely Severe</th>
</tr>
</thead>
<tbody>
<tr>
<td>Depression</td>
<td>0 - 4</td>
<td>5 - 6</td>
<td>7 - 10</td>
<td>11 - 14</td>
<td>14 - 21</td>
</tr>
<tr>
<td>Anxiety</td>
<td>0 - 3</td>
<td>4 - 5</td>
<td>6 - 7</td>
<td>8 - 9</td>
<td>10 - 21</td>
</tr>
<tr>
<td>Stress</td>
<td>0 - 7</td>
<td>8 - 9</td>
<td>10 - 12</td>
<td>13 - 16</td>
<td>17 - 21</td>
</tr>
</tbody>
</table>
Process Measures

Group Climate Questionnaire (GCQ). The GCQ was used to measure group cohesion. The GCQ is a 12-item self-report measure of participants’ perceptions of the therapeutic group environment, and their sense of belonging (MacKenzie, 1983). The GCQ is the most commonly used group measure, having been used in at least 46 studies, of which 15 have linked subscales to outcome (Johnson et al., 2006). It is recommended as a means of documenting stages of early to mid-treatment in particular, and can provide both individual and group scores (MacKenzie, 1983). The GCQ has three subscales: Engagement, which assesses the perception of constructive therapeutic work; Conflict, which measures the perceived degree of interpersonal anger, distrust, and distancing within the group, and Avoidance, which measures the perception of avoidance of constructive involvement. Participants rate the items on a 7-point Likert Scale, rating the extent of the agreement from 0 (not at all) to 6 (extremely). While specified clinical cut-off scores have not been prescribed, group cohesion has been associated with high scores on the Engagement subscale, and low scores on the Conflict and Avoidance subscales (MacKenzie, 1983). The GCQ has good psychometric properties, with one study indicating very good internal consistency for the Engagement, Conflict and Avoidance subscales (α = .94, .92 and .88, respectively; Kivlghan & Goldfine, 1991). The alphas for the current sample were .76, .46, and .20, respectively. Test-retest reliability has been found to be low, however this is expected, given that the purpose of the measure is to detect change (Tschuschke & Greene, 2002). Construct validity has been established through links with therapeutic outcomes (Kivlghan & Goldfine, 1991) and changes in group process (Tschuschke & Greene, 2002). For the purposes of this research project, the early (Session 2) and mid-treatment (Session 4) Engagement and Avoidance sub-scale
scores were used as an indication of group cohesion, however the full scale was administered weekly for the purposes of another research project (See Appendix P for a copy of the GCQ).

*Mindfulness Homework Record (MHR).* The MHR was designed for the purposes of this research, to record the frequency and duration of formal and informal meditation practice during the program. This form was included in the participant manual, was completed by participants through the week, and collected at each session (See Appendix Q for a copy of the MHR).

*Follow-up Mindfulness Practice.* A Follow-up Mindfulness Practice Record was also designed for the purposes of the research. Participants were asked to estimate the frequency and duration of formal and informal practice for the period between the end of treatment and one month follow-up (See Appendix R for a copy of the Follow-up Mindfulness Practice Measure).

**Procedure**

*Advertising and Recruitment.* Participants from the Brisbane metropolitan area were recruited through print advertisements in local newspapers (*Brisbane News, City South News, the Courier Mail, and mX*) or from referrals from private practitioners and the Eating Disorders Association of Queensland (see Appendix S for a copy of the print advertisement and referral information). Interested participants were invited to contact the researcher via e-mail or telephone; the principle researcher was at no time directly involved in participant recruitment.

*Telephone Screening Interview.* Initial screening of interested respondents was conducted over the telephone by the treatment facilitators. A standardised script was followed to determine whether inclusion and exclusion criteria were fulfilled (see Appendix T for a copy of this script). Each telephone call was of approximately 15
minutes duration, and was conducted from Griffith University. Participants were excluded if they were younger than 18 years; not binge eating; had a current diagnosis of Anorexia Nervosa, or a BMI below 18. Participants were provided with details regarding the treatment, and forthcoming procedures if they chose to participate. Suitable participants were then invited to attend an individual semi-structured intake interview at the Griffith University Psychology Clinic.

_Semi-Structured Intake Interview._ The semi-structured interview commenced with an explanation of the purpose of the interview, and an overview of the interview process according to a standardised script (see Appendix U for a copy of the interview script). This interview was of approximately one hour duration, and was conducted by the treatment facilitators. The Intake Protocol was then administered, which included the following measures:

(1) EDE to establish diagnoses. Participants were excluded if they were not binge eating;

(2) AUDIT to assess current levels of alcohol use;

(3) DAST to assess current levels of substance use;

(4) SCID-IV and SCID-II items to determine current diagnostic criteria for psychosis, imminent suicide risk or self-harm. Participants were excluded if these features were present, and Psychology Clinic protocol for risk assessment procedures was followed.

Participants who did not fulfil criteria were provided with explanations for their exclusion, and were provided with referrals to other agencies as necessary, including the Queensland Eating Disorders Resource Centre, the Griffith University Psychology
Clinic, and the Royal Brisbane and Womens’ Hospital Eating Disorders Outreach Service.

Suitable participants were provided with Information Sheet, and signed the Consent Form (see Appendix V and Appendix W for copies of the Information Sheet and Consent Form). The study was approved by the Griffith University Ethics Committee. Participants were then invited to participate in the randomisation procedure, whereby they selected an envelope from a container, which indicated either the Treatment or Waitlist starting dates.

Following randomisation to the Treatment group, pre-treatment assessment package was administered, which participants were requested to complete and bring to the first treatment session. Participants randomised to the Waitlist control group were provided with the pre-treatment assessment package, which they were requested to return by a reply-paid envelope with one week. Participants who did not return the package received a reminder telephone call from the facilitator. Waitlist participants were again contacted by the facilitators after four weeks to maintain contact and remind them of the group’s commencement. They were further contacted the week prior to treatment for a second pre-treatment screening telephone call (see Appendix X for a copy of the Waitlist Screening Script). This was to determine that criteria continued to be fulfilled, and to identify the occurrence of stressors or external events which could interfere with their participation in treatment. The post-waitlist assessment package was sent, which they were requested to complete and bring to the first treatment session.

Prior to each treatment session, participants were asked to arrive early and complete an assessment battery, which took approximately 20 minutes. The GCQ was completed at the end of the first seven sessions. Following the last session, the post-
treatment assessment package was administered, which participants took home to complete and returned in a provided reply paid envelope within one week of the final session. The follow-up assessment package was mailed to participants five days preceding the one-month follow-up session, which they were requested to complete and either bring to the session, or return by reply paid post if they were not able to attend. Table 3.4 presents a summary of the assessment schedule.

Table 3.4
Overview of the Assessment Schedule

<table>
<thead>
<tr>
<th></th>
<th>Tx + WL (Time 1)</th>
<th>WL (Time 2)</th>
<th>Session 1</th>
<th>Sessions 2 – 8*</th>
<th>Post-treatment</th>
<th>Follow-up</th>
</tr>
</thead>
<tbody>
<tr>
<td>EDI</td>
<td>EDI</td>
<td>MHR</td>
<td>MHR</td>
<td>BCBR</td>
<td>BCBR</td>
<td>BCBR</td>
</tr>
<tr>
<td>FFMQ</td>
<td>FFMQ</td>
<td>BCBR</td>
<td>BCBR</td>
<td>EDI</td>
<td>EDI</td>
<td>EDI</td>
</tr>
<tr>
<td>OQ45</td>
<td>OQ45</td>
<td>GCQ</td>
<td>FFMQ</td>
<td>FFMQ</td>
<td>OQ45</td>
<td>OQ45</td>
</tr>
<tr>
<td>RSES</td>
<td>RSES</td>
<td>OQ45</td>
<td>RSES</td>
<td>RSES</td>
<td>RSES</td>
<td>RSES</td>
</tr>
<tr>
<td>DASS</td>
<td>DASS</td>
<td>DASS</td>
<td>DASS</td>
<td>GCQ</td>
<td>FPR</td>
<td></td>
</tr>
</tbody>
</table>

* These measures were administered every session for a separate research project, and were not included in the current research project.

Note: Tx = Treatment Group; WL = Waitlist Group; EDI = Eating Disorder Inventory-3; MHR = Mindfulness Homework Record; FFMQ = Five Facet Mindfulness Questionnaire; BCBR = Binge and Compensatory Behaviour Record; OQ45 = Outcome Questionnaire 45.2; RSES = Rosenberg Self-Esteem Scale; DASS = Depression Anxiety Stress Scale; GCQ = Group Climate Questionnaire; FPR = Follow-up practice record.

The Mindfulness-based Treatment Program.

The eight session group program was conducted at the Griffith University Psychology Clinic. Each treatment group commenced with between six and seventeen participants, and was video-taped. Participants received a manual to accompany the
program and two guided meditation CDs for homework meditation practice (see Appendix Y for a copy of the Participant Manual).

*Treatment.* The intervention was specifically aimed at developing and increasing mindfulness skills, in alignment with the Transdiagnostic Process Model for Binge Eating, outlined in Chapter One. As mentioned in Chapter Two, this intervention was to be a ‘mindfulness-only’ treatment, therefore psychoeducation of binge eating or eating disorders was not explicitly provided. Thus, a standardised treatment manual was designed by the principle researchers of the project; in alignment with these transdiagnostic processes (see Appendix Z for a copy of the Treatment Manual). The length and structure of the program was based on the MBSR program, and many exercises (such as the Sultana Exercise and Body Scan) and meditation scripts were also adapted from MBSR (Kabat-Zinn, 1990). The concepts of the Hungry Ghost and Control Freak were adapted from a Zen mediation guide to managing weight problems (Kabatznick, 1988). Other aspects of the manual were informed by Mindfulness workshops and meditation retreats attended by the researchers.

Consistent with MBSR, the program was delivered in two-hour sessions over 8 consecutive weeks (Kabat-Zinn, 1990). There was no half day retreat. Each session began with a 5 minute grounding meditation, followed by a discussion of homework practice, and observations from the application of mindfulness between sessions. This was followed by a presentation of the session content, and concluded with a guided meditation, and homework setting. Table 3.5 presents an overview and explanation of session content, with links to the relevant transdiagnostic process targeted by the content.
Table 3.5

Overview of Session Content and Relationship to Transdiagnostic Processes

<table>
<thead>
<tr>
<th>Session</th>
<th>Content</th>
<th>Rationale</th>
<th>Transdiagnostic Process</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Address expectations</td>
<td>Begin to facilitate acceptance; Increase interoceptive awareness; Increase awareness of thought processes</td>
<td>EP: Discrepancy-based processing (set aside goals)</td>
</tr>
<tr>
<td></td>
<td>Mindfulness of the Breath</td>
<td></td>
<td>AT: Reduce attentional biases/broaden attentional focus</td>
</tr>
<tr>
<td></td>
<td>Sultana Exercise</td>
<td></td>
<td>EP: Decentering from thought content</td>
</tr>
<tr>
<td>2</td>
<td>Obstacles to practice</td>
<td>Acceptance of negatively evaluated stimuli; Awareness of thoughts as mental events; Increase interoceptive awareness; awareness of judgemental/evaluative thought processes regarding the body</td>
<td>EA: Tolerate mildly aversive states during meditation (e.g., restlessness/boredom/itch)</td>
</tr>
<tr>
<td></td>
<td>Mindfulness of thoughts</td>
<td></td>
<td>AT: Decentering and awareness of thought processes</td>
</tr>
<tr>
<td></td>
<td>Body scan</td>
<td></td>
<td>AT: Reduce attentional biases/broaden attentional focus</td>
</tr>
<tr>
<td>3</td>
<td>Inevitable &amp; optional</td>
<td>Awareness of habitual reactions to/evaluations of stimuli; Acceptance of negatively evaluated stimuli; Decentering from emotions/distress tolerance</td>
<td>EA: Acceptance of aversive experiences</td>
</tr>
<tr>
<td></td>
<td>suffering</td>
<td></td>
<td>EP: Awareness of habitual evaluations</td>
</tr>
<tr>
<td></td>
<td>Mindfulness of emotions</td>
<td></td>
<td>AT: Reduced self-focused attention to affect/broaden attentional focus</td>
</tr>
<tr>
<td>4</td>
<td>Hungry Ghost and Control</td>
<td>Awareness of binge/purge triggers; Decentre from impulsivity/cravings; Awareness and decentering from perfectionism</td>
<td>EP: Discrepancy-based processing</td>
</tr>
<tr>
<td></td>
<td>Freak</td>
<td></td>
<td>AT: Reduced self-focused attention bias</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>EA: Acceptance of aversive experiences without binge as distraction</td>
</tr>
<tr>
<td>Session</td>
<td>Content</td>
<td>Rationale</td>
<td>Transdiagnostic Process</td>
</tr>
<tr>
<td>---------</td>
<td>----------------------------------------</td>
<td>---------------------------------------------------------------------------</td>
<td>----------------------------------------------------------------------------------------</td>
</tr>
<tr>
<td>5</td>
<td>Mindfulness of Cravings</td>
<td>Awareness of cravings (triggers, subjective experience of arising and passing)</td>
<td>EP: Awareness of negative evaluation of craving experience</td>
</tr>
<tr>
<td>6</td>
<td>Acceptance and Letting Go</td>
<td>Acceptance of the present moment as is, regardless of evaluations, judgements</td>
<td>EA: Acceptance of aversive experiences without attempts to distract/reduce.</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>AT: Broadened attentional focus to other stimuli</td>
</tr>
<tr>
<td>7</td>
<td>Loving-kindness</td>
<td>Awareness of habitual evaluations of self; Acceptance of self as is; Decentre from discrepancy-based processing</td>
<td>EP: Awareness of habitual evaluations</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>EA: Acceptance of aversive experiences without attempts to distract/reduce.</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>8</td>
<td>Relapse Prevention: The Journey Continues</td>
<td>Reflection and consolidation of learning; awareness of realistic progress; A lapse is not a relapse; Strategies for maintaining practice</td>
<td>EA: Acceptance of self without attempts to change</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>EP: Discrepancy-based processing (addressing expectations about ‘progress’ and ‘success’)</td>
</tr>
</tbody>
</table>

Note: EP = Elaborative processing; EA = Experiential Avoidance; AT = Attentional Processes
Treatment Facilitators. Each treatment program was co-facilitated by two female therapists. There were five therapists overall: two PhD postgraduate students (who developed the Treatment Manual) and two Masters level post-graduate students in clinical psychology at Griffith University, plus the primary research supervisor. Facilitators held either conditional or full registration with the Psychologists’ Registration Board of Queensland, and received clinical supervision from the primary supervisor, who was PhD-level clinician, and Director of Postgraduate Clinical Training at Griffith University. The supervisor regularly viewed videotapes of sessions, and provided approximately thirty hours of supervision, and was available for debriefing and consultation as required. All facilitators had at least three years clinical experience, had received prior mindfulness training through mindfulness workshops and training programs with experienced mindfulness teachers, had at least two years ongoing mindfulness practice, and had all attended at least one silent retreat.

Facilitators discussed the division of roles prior to each treatment group, and met prior to each session to discuss procedures and potential process issues. Facilitators also debriefed following each session. One facilitator assumed primary responsibility for delivering content, while the other facilitator focused on group process issues, and assumed responsibility for debriefing participants who became distressed.
CHAPTER FOUR

Results

Overview of Statistical Analyses

Data was inspected for missing values and violation of the assumptions of multivariate analysis. Preliminary analysis was then performed on demographic, screening and pre-treatment variables to check for systematic differences between groups. To evaluate the effects of the treatment, 2 X 2 Mixed between-within ANOVAs were performed, and effect sizes were calculated using Cohen’s $d$. To determine the effect of group cohesion, an ANCOVA was performed. The contribution of mindfulness to outcome was evaluated using hierarchical regression analysis, and the contribution of homework practice to outcome was evaluated using regression analyses.

The clinical significance of change was evaluated using the two-step method recommended by Jacobson and Truax (1991). The first step is the assessment of whether participants’ post-treatment scores were within the normal range. The second step required the assessment of reliable change. Participants could be deemed to have recovered if the change was reliable, and passed cutoff criteria, improved if scores met RCI but not cutoff criteria, unchanged if neither criteria were met, or deteriorated if scores passed RCI criteria, but worsened (Jacobson & Truax, 1991).

Non-clinical cutoffs were not available for all measures, therefore the clinical cutoff criteria was defined as the post-treatment score being two standard deviations beyond the pre-treatment mean (Jacobson & Truax, 1991). Reliable change was calculated using the internal consistency co-efficient as a measure of the standard error of each instrument, as recommended by Martinovich, Saunders, and Howard (1996). Clinically significant change was firstly assessed at a group level, and then at
the level of the individual participant, which is considered to be a more stringent test of clinical significance (Follette & Callaghan, 2001).

**Missing Values Analysis**

Prior to analysis, data were inspected for missing values. Missing values analysis revealed that most items had less than 5% of data missing. According to the work of Shafer and Graham (2002), when missing values percentages are below 5%, there is no difference in the performance of techniques such as listwise deletion, multiple imputation and direct maximum likelihood in terms of bias in parameter estimates. Accordingly listwise deletion was used for the very low proportion of missing data in the current analyses. Two participants had completed the first page only of the pre-treatment assessment package, and their data was subsequently dropped from the analysis. Where participants missed some scale items but had completed at least half of the scale, these scale scores were computed from the valid items and pro-rated.

**Checking the Assumptions of the General Linear Model**

The assumption of normality was evaluated using tests of skewness and kurtosis. In cases where skewness and kurtosis were detected, outliers were dropped, which eliminated skewness and kurtosis. ANOVAS were performed with and without outliers. As there was no difference in the pattern of results for any of these comparisons, these outlier cases were retained, and the untransformed version of these variables were retained for subsequent analyses.
Preliminary Analyses

Diagnosis. 20.6% of participants met DSM-IV criteria for BN, 32.5% met criteria for BED, while 46.8% of participants met criteria for ED-NOS. Of 41 women who reported Subjective Binge Episodes during the intake interview, 68.3% also reported a sense of loss of control during the episode. There was a high proportion of comorbidity in the sample, with 42% of participants reporting either a current or previous DSM diagnosis. These diagnoses included eating disorders (26.6%; AN = 9.5%; BN = 11.9%; did not specify = 4.76%), depression (73.8%), anxiety disorders (33.32%), bipolar disorder (4.76%), and borderline personality disorder (2.38%). At the time of recruitment, 26.1% of participants were taking psychotropic medication.

Demographic Variables. Demographic data were analysed using independent samples t-tests to compare treatment and waitlist groups, drop-outs and treatment completers, and diagnostic groups, to determine if there were any between group differences on continuous variables (Age, BMI). Chi-square analyses were performed to analyse similar between group differences on categorical variables (Marital Status, Employment, Education Level, Meditation Experience, and Previous Psychological Treatment, Diagnosis). There were no significant differences for participants randomly assigned to the Treatment or Waitlist Control groups on any demographic or diagnostic variables, which indicates that the randomisation procedure was successful. There were no significant differences on demographic or diagnostic variables for participants who did versus did not commence treatment. Participants who dropped out were significantly more likely to be single than those who completed treatment. However given the size of this group ($n = 23$), it is more likely for extreme patterns to occur in the data, and this finding has little theoretical significance.
Similar analyses were then performed for diagnostic groups (BN, BED, ED-NOS). There was a main effect between diagnostic groups on BMI, $F(2, 118), p < .0005$. Follow-up analyses showed that BED participants reported a significantly higher mean BMI than both BN ($p = .0005$) and ED-NOS participants ($p = <.0005$). ED-NOS participants reported a significantly higher mean BMI than BN participants ($p = .02$). Table 4.1 presents the means and standard deviations of continuous demographic variables (Age, BMI), and percentages of participants belonging to categorical demographic variables (Marital Status, Employment, Education Level, Previous Meditation Experience and Previous Treatment).
### Table 4.1

**Means, Standard Deviations, and Percentages of Demographic Characteristics of Samples**

<table>
<thead>
<tr>
<th>Characteristic</th>
<th>Group</th>
<th>Commenced Treatment</th>
<th>Drop-out</th>
<th>Diagnosis</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Treatment</td>
<td>Waitlist</td>
<td>Yes</td>
<td>No</td>
</tr>
<tr>
<td>Mean Age</td>
<td>(n = 61)</td>
<td>(n = 65)</td>
<td>(n = 104)</td>
<td>(n = 22)</td>
</tr>
<tr>
<td>(SD)</td>
<td>38.07</td>
<td>37.08</td>
<td>.84</td>
<td>37.65</td>
</tr>
<tr>
<td>Mean BMI</td>
<td>(7.41)</td>
<td>(8.94)</td>
<td>.18</td>
<td>29.15</td>
</tr>
<tr>
<td>(SD)</td>
<td>27.89</td>
<td>29.94</td>
<td>.18</td>
<td>29.15</td>
</tr>
<tr>
<td>Marital Status (%)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Single</td>
<td>32</td>
<td>45</td>
<td>.41</td>
<td>38</td>
</tr>
<tr>
<td>Married</td>
<td>53</td>
<td>42</td>
<td>.41</td>
<td>38</td>
</tr>
<tr>
<td>Divorced</td>
<td>15</td>
<td>13</td>
<td>.41</td>
<td>38</td>
</tr>
<tr>
<td>Employment (%)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Fulltime</td>
<td>46</td>
<td>48</td>
<td>.87</td>
<td>49</td>
</tr>
<tr>
<td>Part-time</td>
<td>19</td>
<td>12</td>
<td>.87</td>
<td>15</td>
</tr>
<tr>
<td>Home duties</td>
<td>15</td>
<td>13</td>
<td>.87</td>
<td>15</td>
</tr>
<tr>
<td>Unemployed</td>
<td>4</td>
<td>2</td>
<td>.87</td>
<td>2</td>
</tr>
<tr>
<td>Disability</td>
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<td>6</td>
<td>.87</td>
<td>5</td>
</tr>
<tr>
<td>Student</td>
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<td>10</td>
<td>.87</td>
<td>8</td>
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<tr>
<td>Retired</td>
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<td>7</td>
<td>.87</td>
<td>2</td>
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<tr>
<td>Other</td>
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<td>2</td>
<td>.87</td>
<td>2</td>
</tr>
<tr>
<td>Characteristic</td>
<td>Group Treatment</td>
<td>Waitlist</td>
<td>Commenced Treatment</td>
<td>p</td>
</tr>
<tr>
<td>--------------------------</td>
<td>-----------------</td>
<td>----------</td>
<td>---------------------</td>
<td>-------</td>
</tr>
<tr>
<td>Education (%)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Primary</td>
<td>4</td>
<td>2</td>
<td>.60</td>
<td>.48</td>
</tr>
<tr>
<td>Secondary</td>
<td>20</td>
<td>25</td>
<td>0.08</td>
<td>.28</td>
</tr>
<tr>
<td>Tertiary</td>
<td>61</td>
<td>51</td>
<td>0.33</td>
<td>.26</td>
</tr>
<tr>
<td>TAFE/apprentice</td>
<td>15</td>
<td>22</td>
<td>0.58</td>
<td>0.42</td>
</tr>
<tr>
<td>Previous Meditation</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Yes (%)</td>
<td>28</td>
<td>57</td>
<td>0.08</td>
<td>0.28</td>
</tr>
<tr>
<td>No (%)</td>
<td>72</td>
<td>43</td>
<td>0.66</td>
<td>0.50</td>
</tr>
<tr>
<td>Previous Treatment</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Yes (%)</td>
<td>65</td>
<td>73</td>
<td>0.33</td>
<td>0.26</td>
</tr>
<tr>
<td>No (%)</td>
<td>35</td>
<td>27</td>
<td>0.32</td>
<td>0.17</td>
</tr>
<tr>
<td>Diagnosis (%)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>BN</td>
<td>26.2</td>
<td>15.4</td>
<td>0.27</td>
<td>0.87</td>
</tr>
<tr>
<td>BED</td>
<td>32.8</td>
<td>32.3</td>
<td>0.82</td>
<td>0.93</td>
</tr>
<tr>
<td>ED-NOS</td>
<td>41</td>
<td>52.3</td>
<td>0.83</td>
<td>0.05</td>
</tr>
</tbody>
</table>

Note: BN = Bulimia Nervosa; BED = Binge Eating Disorder; ED-NOS = Eating Disorder not Otherwise Specified; BMI = Body Mass Index
Previous and Concurrent Treatment. The majority of participants (69.3%) reported having received previous psychological treatment, with 25.3% having received treatment less than twelve months prior to recruitment, 16.5% from 1 to 2 years previous, 19% from 2 to 5 years previous, and 10.2% from more than five years prior to recruitment. 20.2% of participants were currently receiving treatment at the time of recruitment (Treatment Condition = 22%; Waitlist = 20%).

Meditation Experience. The majority of participants (64%) reported no previous meditation experience. Of the 41 women who did report previous meditation experience, 36.6% had been practicing for less than one year, 39% for between 1 and 2 years, 7.3% for 2 to 5 years, and 17.1% had been practicing meditation for more than five years. Of the more experienced meditators (>5 years) a considerable proportion (42.9%) reported practicing meditation less than once per week, and the majority of experienced practitioners (57.1%) reported a duration of practice from 20 to 30 minutes. As shown in Table 4.1, there were no significant differences in meditation experience between participants in Treatment or Waitlist conditions. A one-way ANOVA revealed that participants who completed treatment, who reported previous meditation experience, did not have significantly different pre-treatment FFMQ scores than those without experience.

Drop-outs. As shown in Table 4.1, there were no significant differences for participants who dropped out versus completers on group assignment, diagnosis, or demographic variables, with the exception of marital status. Of participants who did drop out, 20% did so following the first session, 20% following the second session, 40% following the third session, while the remaining 20% of drop-outs occurred following the fourth session.
Screening Measures, Primary and Secondary Variables

A series of t-tests and one-way ANOVAs as appropriate were conducted to determine whether there were any significant differences between samples (Treatment versus Waitlist, Commenced versus Not Commenced, Drop-out versus Completers, Diagnostic Groups) on the screening variables (EDE, DAST, AUDIT), pre-treatment frequencies of primary outcome variables (Binges, Purging and Non-purging compensatory behaviours), and secondary outcome variables (OQ45, DASS, FFMQ, RSES, EDI-3).

Screening Measures. Table 4.2 shows the means and standard deviations of the screening measures across samples.
Table 4.2

Means and Standard Deviations of Screening Measures of Samples

<table>
<thead>
<tr>
<th>Measure</th>
<th>Group</th>
<th>Commenced Treatment</th>
<th>Drop-out</th>
<th>Diagnosis</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Yes</td>
<td>No</td>
<td>Yes</td>
</tr>
<tr>
<td></td>
<td></td>
<td>(n = 61)</td>
<td>(n = 65)</td>
<td>(n = 104)</td>
</tr>
<tr>
<td>AUDIT</td>
<td></td>
<td>M (SD)</td>
<td>M (SD)</td>
<td>M (SD)</td>
</tr>
<tr>
<td>DAST</td>
<td></td>
<td>4.18 (4.54)</td>
<td>4.92 (5.0)</td>
<td>4.39 (4.66)</td>
</tr>
<tr>
<td>EDE</td>
<td></td>
<td>0.39 (1.57)</td>
<td>0.21 (.96)</td>
<td>0.26 (1.23)</td>
</tr>
<tr>
<td>Restraint</td>
<td></td>
<td>3.20 (1.29)</td>
<td>3.10 (1.25)</td>
<td>3.13 (1.29)</td>
</tr>
<tr>
<td>Eating Concern</td>
<td></td>
<td>3.56 (1.11)</td>
<td>3.86 (1.45)</td>
<td>3.71 (1.33)</td>
</tr>
<tr>
<td>Shape Concern</td>
<td></td>
<td>4.59 (0.95)</td>
<td>4.45 (1.28)</td>
<td>4.54 (1.17)</td>
</tr>
<tr>
<td>Weight Concern</td>
<td></td>
<td>3.77 (1.25)</td>
<td>3.65 (1.43)</td>
<td>3.65 (1.32)</td>
</tr>
<tr>
<td>Global</td>
<td></td>
<td>4.02 (1.14)</td>
<td>3.77 (0.96)</td>
<td>3.89 (1.06)</td>
</tr>
</tbody>
</table>

Note: AUDIT = Alcohol Use Disorders Identification Test; DAST = Drug Abuse Screening Test; EDE = Eating Disorder Examination; BN = Bulimia Nervosa; BED = Binge Eating Disorder; ED-NOS = Eating Disorder not Otherwise Specified.
There were no significant differences between Treatment versus Waitlist groups, which indicates that the randomisation procedure was successful. There were also no significant differences on any screening measures between participants who Commenced versus Not Commenced treatment, or Drop-outs versus Completers on any screening measures. There was a significant interaction between Diagnostic groups on the DAST screening measure, $F(2, 126) = 3.94, p = .022$, whereby BN participants scored significantly higher than ED-NOS participants ($p = .006$), however the BN participants’ mean DAST score (0.88) was considerably lower than the suggested cut-off, and thus not clinically significant. There were no significant differences between diagnostic groups on the AUDIT.

There were significant differences between diagnostic groups on the EDE Restraint, $F(2, 115) = 4.17, p = 0.18$, EDE Eating Concern, $F(2, 115) = 4.39, p = 0.14$, and Shape Concern, $F(2, 115) = 5.12, p = .021$, subscales and the Global Score, $F(2, 115) = 3.14, p = .047$. Follow-up pairwise comparisons revealed that ED-NOS participants had significantly lower scores than BN on the Global Score ($p = .017$) and Restraint ($p = .006$), and significantly lower scores than BED participants on Shape Concern ($p = .006$), while both BN and BED participants were higher than ED-NOS on Eating Concern ($p = .013$). BN scored higher than BED participants on the Restraint subscale only ($p = .019$).

Primary Outcome Variables. Table 4.3 presents the means and standard deviations of pre-treatment frequencies of primary outcome variables across samples.
Table 4.3

Means and Standard Deviations of Pre-Treatment Frequencies of Primary Outcome Variables across Samples

<table>
<thead>
<tr>
<th>Measure</th>
<th>Group</th>
<th>Commenced Treatment</th>
<th>Drop-out</th>
<th>Diagnosis</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>BN</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Yes</td>
<td>No</td>
<td>(n = 26)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>(n = 104)</td>
<td>(n = 22)</td>
<td>(n = 41)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>M (SD)</td>
<td>M (SD)</td>
<td>M (SD)</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Binge/week</td>
<td>Treatment</td>
<td>4.00 (2.54)</td>
<td>4.47 (3.02)</td>
<td>4.58 (5.86)</td>
</tr>
<tr>
<td></td>
<td>Waitlist</td>
<td>4.94 (3.22)</td>
<td>4.00 (1.41)</td>
<td>3.16 (3.34)</td>
</tr>
<tr>
<td></td>
<td>Yes</td>
<td>4.00 (1.41)</td>
<td>M (SD)</td>
<td>M (SD)</td>
</tr>
<tr>
<td>Purge/week</td>
<td>No</td>
<td>M (SD)</td>
<td>M (SD)</td>
<td>M (SD)</td>
</tr>
<tr>
<td>Non-</td>
<td></td>
<td>Nil</td>
<td>7.34 (14.11)</td>
<td>5.67 (6.770)</td>
</tr>
<tr>
<td>Purge/week</td>
<td></td>
<td>Nil</td>
<td>1.26 (2.69)</td>
<td>1.87 (2.26)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>1.17 (2.53)</td>
<td>1.53 (2.54)</td>
<td>2.21 (3.05)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>2.17 (2.74)</td>
<td>2.33 (2.73)</td>
<td></td>
</tr>
</tbody>
</table>

Note: BN = Bulimia Nervosa; BED = Binge Eating Disorder; ED-NOS = Eating Disorder not Otherwise Specified.
Consistent with diagnostic criteria, there were significant differences between diagnostic groups on pre-treatment frequencies of bingeing and compensatory behaviours. There was a significant interaction between diagnostic groups on the pre-treatment binge frequency, $F(2, 126) = 9.5, p = <.0005$, with ED-NOS participants reporting fewer pre-treatment binge episodes than BN ($p = <.0005$) and BED participants ($p = .002$). There was also a significant interaction between diagnostic groups on pre-treatment purging frequencies, $F(2, 126) = 18.80, p < .0005$, with BN reporting higher frequencies than BED ($p = <.0005$) and ED-NOS participants ($p = <.0005$). However, there were no significant differences between diagnostic groups on the pre-treatment frequency of non-purging compensatory behaviours (excessive exercise and fasting).

Participants who dropped out of treatment ($n = 10$) reported a higher pre-treatment frequency of purging behaviours, $F(2, 114) = 6.66, p = .002$. While participants who did not commence did not report any episodes of compensatory behaviours, this was not significantly different to participants who did commence treatment. There were no significant differences on pre-treatment bingeing or compensatory behaviour between Treatment and Waitlist groups, and participants who Commenced versus Not Commenced treatment.

*Secondary Outcome Variables.* Table 4.4 presents the means and standard deviations of pre-treatment frequencies of secondary outcome variables across samples.
Table 4.4

Means and Standard Deviations of Pre-Treatment Secondary Outcome Variables across Samples

<table>
<thead>
<tr>
<th>Measure</th>
<th>Group</th>
<th>Commenced Treatment</th>
<th>Drop-out</th>
<th>Diagnosis</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Treatment</td>
<td>Yes</td>
<td>No</td>
<td>Yes</td>
</tr>
<tr>
<td></td>
<td>(n = 61)</td>
<td>(n = 104)</td>
<td>(n = 22)</td>
<td>(n = 23)</td>
</tr>
<tr>
<td></td>
<td>M (SD)</td>
<td>M (SD)</td>
<td>M (SD)</td>
<td>M (SD)</td>
</tr>
<tr>
<td>OQ45: SD</td>
<td>46.73 (11.77)</td>
<td>47.07 (11.84)</td>
<td>41.08 (10.58)</td>
<td>53.05 (12.4)</td>
</tr>
<tr>
<td>IR</td>
<td>21.43 (3.03)</td>
<td>21.69 (3.34)</td>
<td>22.08 (3.26)</td>
<td>21.90 (3.85)</td>
</tr>
<tr>
<td>SR</td>
<td>12.91 (3.89)</td>
<td>13.77 (4.71)</td>
<td>12.5 (5.45)</td>
<td>15.62 (4.86)</td>
</tr>
<tr>
<td>DASS</td>
<td>7.83 (5.72)</td>
<td>8.18 (5.67)</td>
<td>6.17 (5.27)</td>
<td>9.98 (5.27)</td>
</tr>
<tr>
<td>Depression</td>
<td>5.13 (3.87)</td>
<td>5.35 (4.17)</td>
<td>3.33 (2.35)</td>
<td>7.00 (5.34)</td>
</tr>
<tr>
<td>Anxiety</td>
<td>10.12 (4.43)</td>
<td>10.25 (4.45)</td>
<td>9.42 (4.93)</td>
<td>12.38 (4.85)</td>
</tr>
<tr>
<td>Stress</td>
<td>26.13 (4.82)</td>
<td>26.53 (4.91)</td>
<td>25.5 (4.68)</td>
<td>27.19 (5.28)</td>
</tr>
<tr>
<td>RSES</td>
<td>22.92 (7.42)</td>
<td>23.25 (7.42)</td>
<td>24.75 (5.72)</td>
<td>22.10 (7.06)</td>
</tr>
<tr>
<td>FFMQ</td>
<td>15.27 (5.0)</td>
<td>14.56 (4.82)</td>
<td>17.21 (7.33)</td>
<td>12.81 (4.01)</td>
</tr>
<tr>
<td>Nonjudge</td>
<td>25.02 (6.70)</td>
<td>24.96 (6.82)</td>
<td>24.75 (7.20)</td>
<td>22.64 (9.39)</td>
</tr>
<tr>
<td>Nonreact</td>
<td>20.87 (6.40)</td>
<td>21.66 (6.13)</td>
<td>21.08 (7.01)</td>
<td>22.10 (7.08)</td>
</tr>
<tr>
<td>Actaware</td>
<td>25.00 (6.53)</td>
<td>24.93 (6.95)</td>
<td>27.92 (8.73)</td>
<td>24.43 (5.71)</td>
</tr>
<tr>
<td>Measure</td>
<td>Group</td>
<td>Commenced Treatment</td>
<td>Drop-out</td>
<td>Diagnosis</td>
</tr>
<tr>
<td>---------</td>
<td>-------</td>
<td>---------------------</td>
<td>----------</td>
<td>------------</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Yes</td>
<td>No</td>
<td>Yes</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>M</td>
<td>(SD)</td>
<td>M</td>
</tr>
<tr>
<td>EDI-3</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>DT</td>
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<td>21.33</td>
<td>(5.73)</td>
<td>19.00</td>
</tr>
<tr>
<td>BD</td>
<td></td>
<td>31.15</td>
<td>(7.70)</td>
<td>29.67</td>
</tr>
<tr>
<td>LSE</td>
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<td>13.13</td>
<td>(5.46)</td>
<td>13.30</td>
</tr>
<tr>
<td>PA</td>
<td></td>
<td>11.96</td>
<td>(6.15)</td>
<td>13.22</td>
</tr>
<tr>
<td>IA</td>
<td></td>
<td>11.35</td>
<td>(5.27)</td>
<td>11.04</td>
</tr>
<tr>
<td>II</td>
<td></td>
<td>11.50</td>
<td>(6.03)</td>
<td>10.15</td>
</tr>
<tr>
<td>ID</td>
<td></td>
<td>13.96</td>
<td>(8.41)</td>
<td>13.85</td>
</tr>
<tr>
<td>ED</td>
<td></td>
<td>6.92</td>
<td>(5.11)</td>
<td>8.02</td>
</tr>
<tr>
<td>P</td>
<td></td>
<td>14.12</td>
<td>(5.78)</td>
<td>11.98</td>
</tr>
<tr>
<td>MF</td>
<td></td>
<td>6.77</td>
<td>(4.65)</td>
<td>10.20</td>
</tr>
<tr>
<td>A</td>
<td></td>
<td>10.85</td>
<td>(5.02)</td>
<td>10.59</td>
</tr>
</tbody>
</table>

**Note:** OQ45 = Outcome Questionnaire 45.2; SD = Symptom Distress; IR = Interpersonal Relations; SR = Social Role; DASS = Depression Anxiety Stress Scale; RSES = Rosenberg Self-esteem Scale; FFMQ = Five Facet Mindfulness Questionnaire; Actaware = Act with Awareness; EDI-3 = Eating Disorder Inventory; DT – Drive for Thinness; B = Bulimia; BD = Body Dissatisfaction; LSE = Low Self Esteem; PA =Personal Alienation; IA = Interpersonal Alienation; II = Interpersonal Insecurity; ID = Interoceptive Deficits; ED = Emotional Dysregulation; P = Perfectionism; MF = Maturity Fears; A = Asceticism; BN = Bulimia Nervosa; BED = Binge Eating Disorder; ED-NOS = Eating Disorder not Otherwise Specified.
The only significant differences between Treatment and Waitlist groups on pre-treatment secondary outcome variables were on two EDI-3 subscales. The Treatment condition scored significantly higher on the EDI Drive for Thinness subscale, $F (1, 52), = 4.06, p = .046$, while the Waitlist condition scored significantly higher on the Maturity Fears subscale, $F (2, 54) = 9.52, p = .003$.

Participants who dropped out of treatment scored significantly higher on DASS Anxiety, $F (2, 109) = 3.634, p = .03$ and Stress subscales, $F (2, 109) = 3.38, p = .038$, OQ45 Symptom Distress subscale, $F (2, 109) = 5.05, p = .008$, FFMQ Nonreact subscale, $F (2, 109) = 3.21, p = .045$, and EDI-3 Bulimia, $F (2, 109) = 3.90, p = .023$, Interpersonal Insecurity, $F (2, 109) = 5.97, p = .004$, Interpersonal Alienation, $F (2, 109) = 5.98, p = .003$, and Interoceptive Deficits, $F (2, 109) = 3.33, p = .040$ subscales.

There was a significant interaction between diagnostic groups on the Nonreact subscale of the FFMQ, $F (2,110), = 4.04, p = 0.20$, with BED participants scoring higher than both BN ($p = .051$) and ED-NOS participants ($p = .007$). There was no significant difference between BN and ED-NOS participants. There was a significant interaction between diagnostic groups on the EDI-3 Bulimia subscale, $F (2, 106) = 3.23, p = .044$, with pairwise comparisons showing that BN participants scored significantly higher than both BED ($p = .029$) and ED-NOS ($p = .021$) participants.

There were no significant differences between participants who commenced or did not commence treatment on any pre-treatment secondary outcome variables.

**Pre to Post Treatment**

To evaluate the effects of the intervention, all scales were first run as Repeated Measures ANOVAS. These were preceded my MANOVAs as appropriate on
measures with multiple sub-scales. In each case, the multivariate interaction between
Time and Group were significant. Subsequently, a series of repeated measures
ANOVA were performed to compare Time 1 and Time 2 intervention scores for the
treatment and waitlist conditions, both between and within groups

*Primary Outcome Variables.* To determine the effects of treatment on primary
outcome variables, a series of 2 (Group) x 2 (Time) repeated measures ANOVAs
were performed on three dependent variables: Binge frequency, Purging (vomit and
laxative use) frequency and Non-purging (excessive exercise and fasting) frequency.
The independent variable was group assignment (Treatment and Waitlist). There was
a significant Group x Time interaction for Binge frequency and Non-purging
behaviours, whereby the post-treatment frequencies for the Treatment condition were
significantly lower than for the Waitlist condition. Although there were significant
decreases in purging behaviour for the Treatment group, this was not significantly
different from the Waitlist group, which also evidenced significant decreases in
purging behaviours.

There was a 65.63% reduction in the frequency of binges (*M* pre = 3.55, *SD* =
3.60; *M* post = 1.22, *SD* = 2.10), a 58.46% decrease in purging (*M* pre = 1.3, *SD* =
2.32; *M* post = .54, *SD* = 1.46), and 67.9% decrease in non-purging behaviours (*M* pre
= 2.43, *SD* = 2.77; *M* post = 1.93, *SD* = 2.66) from pre to post treatment in the
Treatment group. The frequency of binge episodes and non-purging behaviours
significantly decreased from pre to post treatment for the Treatment condition, while
the binge frequency significantly increased in the Waitlist condition. Although there
was a significant main effect for time for the purging behaviours in the Treatment
condition, the Time x Group interaction was not significant. Table 4.5 presents the
pre- and post-treatment means and standard deviations, the simple main effect for time, and interactions.
Table 4.5

Pre- and Post-Treatment Means, Standard Deviations, Effect Sizes, Group x Time Interaction and Simple Main Effects of Time for Primary Outcome Variables

<table>
<thead>
<tr>
<th>Measure</th>
<th>Pre-treatment</th>
<th>Post-Treatment</th>
<th>Interaction</th>
<th>Simple Main Effect of Time</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Treatment ( n = 37 )</td>
<td>Waitlist ( n = 58 )</td>
<td>Treatment ( n = 37 )</td>
<td>Waitlist ( n = 31 )</td>
</tr>
<tr>
<td>Binge</td>
<td>( M (SD) ): 3.55 (3.60)</td>
<td>( M (SD) ): 3.02 (3.09)</td>
<td>( M (SD) ): 1.22 (2.10)</td>
<td>( M (SD) ): 4.48 (5.36)</td>
</tr>
<tr>
<td>Purge</td>
<td>( M (SD) ): 1.30 (2.32)</td>
<td>( M (SD) ): 1.96 (4.24)</td>
<td>( M (SD) ): .54 (1.46)</td>
<td>( M (SD) ): 1.04 (2.39)</td>
</tr>
<tr>
<td>Non-purge</td>
<td>( M (SD) ): 2.43 (2.77)</td>
<td>( M (SD) ): .05 (1.8)</td>
<td>( M (SD) ): .78 (1.87)</td>
<td>( M (SD) ): 1.93 (2.66)</td>
</tr>
</tbody>
</table>

Note: Owing to the 2 X 2 design, the \( df \) for all effects = 1.
Secondary Outcome Variables. To determine the effects of treatment on secondary outcome variables, a series of 2 (Group) x 2 (Time) repeated measures ANOVAs were performed on three dependent variables: OQ45 (Symptom Distress, Interpersonal Relations and Social Role), DASS (Depression, Anxiety and Stress), RSES, FFMQ (Nonjudge, Nonreact, Act with Awareness, Observe and Describe), EDI-3 (Drive for Thinness, Bulimia, Body Dissatisfaction, Low Self Esteem, Personal Alienation, Interpersonal Alienation, Interpersonal Insecurity, Interoceptive Deficits, Emotional Dysregulation, Perfectionism, Maturity Fears, Asceticism). The independent variable was group assignment (Treatment and Waitlist). There was significant Time x Group interactions for all dependent variables except the EDI-3 Maturity Fears subscale. Table 4.6 presents the pre- and post-treatment means and standard deviations, the simple main effect for time, and interactions.
Table 4.6
Pre- and Post-Treatment Means, Standard Deviations, Group x Time Interaction, Effect Sizes and Simple Main Effects of Time for Secondary Outcome Variables

<table>
<thead>
<tr>
<th>Measure</th>
<th>Pre-treatment</th>
<th>Post-treatment</th>
<th>Interaction</th>
<th>Simple Main Effect of Time</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Treatment</td>
<td>Waitlist</td>
<td>Treatment</td>
<td>Waitlist</td>
</tr>
<tr>
<td></td>
<td>M (SD) (n = 39)</td>
<td>M (SD) (n = 39)</td>
<td>M (SD) (n = 39)</td>
<td>F</td>
</tr>
<tr>
<td>OQ45</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>SD</td>
<td>46.64 (12.72)</td>
<td>48.83 (11.23)</td>
<td>30.32 (16.18)</td>
<td>48.54 (16.63)</td>
</tr>
<tr>
<td>IR</td>
<td>21.95 (2.99)</td>
<td>22.23 (3.68)</td>
<td>13.45 (8.14)</td>
<td>20.22 (6.70)</td>
</tr>
<tr>
<td>SR</td>
<td>12.97 (4.09)</td>
<td>15.39 (5.29)</td>
<td>9.22 (4.46)</td>
<td>15.14 (4.34)</td>
</tr>
<tr>
<td>DASS</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Depression</td>
<td>6.17 (10.24)</td>
<td>27.35 (10.62)</td>
<td>33.45 (15.39)</td>
<td></td>
</tr>
<tr>
<td>Anxiety</td>
<td>8.16 (5.76)*</td>
<td>8.89 (5.82)</td>
<td>4.34 (5.14)*</td>
<td>7.62 (5.62)</td>
</tr>
<tr>
<td>Stress</td>
<td>5.42 (4.11)*</td>
<td>5.82 (4.52)</td>
<td>2.42 (3.25)*</td>
<td>5.05 (4.24)</td>
</tr>
<tr>
<td>FFMQ</td>
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<td></td>
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<tr>
<td>Nonjudge</td>
<td>20.87 (10.62)</td>
<td>47.66 (10.62)</td>
<td>1.10 (4.60)</td>
<td>10.56 (4.72)</td>
</tr>
<tr>
<td>Nonreact</td>
<td>22.82 (7.33)</td>
<td>32.39 (7.51)</td>
<td>23.37 (9.11)</td>
<td>23.37 (9.11)</td>
</tr>
<tr>
<td>Observe</td>
<td>23.46 (8.11)</td>
<td>20.11 (6.19)</td>
<td>12.50 (3.48)</td>
<td>12.50 (3.48)</td>
</tr>
<tr>
<td>Actaware</td>
<td>15.44 (5.31)</td>
<td>21.51 (5.82)</td>
<td>26.03 (7.10)</td>
<td>20.00 (6.75)</td>
</tr>
<tr>
<td>Describe</td>
<td>21.15 (6.24)</td>
<td>25.27 (6.43)</td>
<td>30.63 (6.05)</td>
<td>24.53 (7.53)</td>
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<tr>
<td></td>
<td>25.12 (6.14)</td>
<td>24.92 (7.39)</td>
<td>27.97 (6.92)</td>
<td>23.11 (9.53)</td>
</tr>
</tbody>
</table>
25.10 (6.91)

Note: * n = 38 due to missing g data; OQ45 = Outcome Questionnaire 45.2; SD = Symptom Distress; IR = Interpersonal Relations; SR = Social Role; DASS = Depression Anxiety Stress Scale; FFMQ = Five Facet Mindfulness Questionnaire; Actaware = Act with Awareness; Owing to the 2 X 2 design, the df for all effects = 1.
<table>
<thead>
<tr>
<th>Measure</th>
<th>Pre-treatment</th>
<th>Post-Treatment</th>
<th>Interaction</th>
<th>Simple Main Effect of Time</th>
</tr>
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<tbody>
<tr>
<td></td>
<td>Treatment</td>
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<td>Treatment</td>
<td>Waitlist</td>
</tr>
<tr>
<td>RSES</td>
<td>26.56 (4.71)</td>
<td>27.91 (4.58)*</td>
<td>21.26 (5.59)</td>
<td>26.60 (5.24)*</td>
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<tr>
<td>EDI-3</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>DT</td>
<td>21.23 (5.81)</td>
<td>18.92 (5.99)</td>
<td>14.85 (8.89)</td>
<td>18.68 (5.57)</td>
</tr>
<tr>
<td>B</td>
<td>19.95 (6.43)</td>
<td>19.52 (6.74)</td>
<td>11.44 (9.12)</td>
<td>17.63 (7.23)</td>
</tr>
<tr>
<td>BD</td>
<td>30.41 (8.20)</td>
<td>29.6 (8.38)</td>
<td>24.54 (11.54)</td>
<td>30.21 (9.03)</td>
</tr>
<tr>
<td>LSE</td>
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<td>14.03 (5.79)</td>
<td>8.05 (6.32)</td>
<td>13.29 (5.54)</td>
</tr>
<tr>
<td>PA</td>
<td>11.72 (6.32)</td>
<td>13.95 (6.30)</td>
<td>8.18 (6.39)</td>
<td>13.55 (6.72)</td>
</tr>
<tr>
<td>IA</td>
<td>11.10 (5.40)</td>
<td>11.87 (5.50)</td>
<td>8.51 (5.89)</td>
<td>11.63 (4.96)</td>
</tr>
<tr>
<td>II</td>
<td>11.08 (5.78)</td>
<td>10.61 (5.28)</td>
<td>7.46 (5.24)</td>
<td>10.34 (5.69)</td>
</tr>
<tr>
<td>ID</td>
<td>13.85 (8.50)</td>
<td>14.63 (8.13)</td>
<td>8.44 (7.10)</td>
<td>13.79 (7.55)</td>
</tr>
<tr>
<td>ED</td>
<td>6.89 (5.46)</td>
<td>8.79 (5.47)</td>
<td>5.16 (5.61)</td>
<td>9.08 (5.49)</td>
</tr>
<tr>
<td>P</td>
<td>14.44 (5.84)</td>
<td>12.87 (5.68)</td>
<td>12.10 (6.95)</td>
<td>12.37 (5.17)</td>
</tr>
<tr>
<td>MF</td>
<td>7.41 (5.14)</td>
<td>10.79 (6.03)</td>
<td>6.26 (5.56)</td>
<td>9.76 (5.99)</td>
</tr>
<tr>
<td>A</td>
<td>10.77 (5.54)</td>
<td>9.89 (4.24)</td>
<td>7.08 (5.35)</td>
<td>10.13 (4.77)</td>
</tr>
</tbody>
</table>

Note: * n = 39; RSES = Rosenberg Self-esteem Scale; EDI-3 = Eating Disorder Inventory; DT = Drive for Thinness; B = Bulimia; BD = Body Dissatisfaction; LSE = Low Self Esteem; PA = Personal Alienation; IA = Interpersonal Alienation; II = Interpersonal Insecurity; ID = Interoceptive Deficits; ED = Emotional Dysregulation; P = Perfectionism; MF = Maturity Fears; A = Asceticism; Owing to the 2 X 2 design, the df for all effects = 1.
Impact of Concurrent Treatment

A series of one-way ANOVAs were conducted to determine whether participants who were receiving concurrent individual treatment responded differentially to the Mindfulness program. Results indicated that participants receiving concurrent treatment at the time of randomisation reported significantly greater post-treatment increases on the FFMQ Act with Awareness scale ($M_{pre} = 22.85, SD = 6.77$; $M_{post} = 33.21, SD = 1.52$) than those not receiving treatment ($M_{pre} = 25.31, SD = 5.92$; $M_{post} = 30.03, SD = 6.49$), $F(1, 36) = 4.43, p = .043$. Participants receiving concurrent treatment also reported significantly greater post-treatment decreases on the EDI-3 Body Dissatisfaction scale ($M_{pre} = 33.43, SD = 6.27$; $M_{post} = 18.29, SD = 11.16$) than those not receiving treatment ($M_{pre} = 29.66, SD = 8.47$; $M_{post} = 25.86, SD = 11.44$), $F(1, 36) = 11.47, p = .002$. For participants randomised to the waitlist who were receiving concurrent individual treatment, there was a significant increase on the FF Nonjudge scale, ($M_{pre} = 19.13, SD = 6.79$; $M_{post} = 24.88, SD = 8.43$) compared to those not receiving treatment ($M_{pre} = 24.22, SD = 7.58$; $M_{post} = 323.52, SD = 6.69$), $F(1, 40) = 6.28, p = .017$ and a significant decrease in purging behaviours ($M_{pre} = 4.84, SD = 6.52$; $M_{post} = 2.13, SD = 2.70$), compared to those not receiving treatment while on the waitlist ($M_{pre} = 1.13, SD = 2.62$; $M_{post} = .84, SD = 2.02$), $F(1, 40) = 7.75, p = .008$. There was also a significant increase in the frequency of binge episodes, from a mean of 3.13 per week ($SD = 3.53$) to 9.75 per week ($SD = 831$), $F(1, 40) = 9.77, p = .003$. Of waitlist participants who were receiving treatment, 73% completed the treatment program at the conclusion of the waitlist period.
Impact of Meditation Experience

A series of repeated measures ANOVAs were conducted to determine whether participants who were receiving concurrent individual treatment responded differentially to the Mindfulness program. The results showed that participants with previous meditation experience did not report a significantly different treatment response than participants without experience, even on the FFMQ subscales.

Response to Treatment of Diagnostic Groups

A series of repeated measures ANOVAs were conducted to determine whether the three diagnostic treatment groups (BN, BED and ED-NOS) responded differentially to treatment. There were no significant interactions between diagnostic groups and pre- to post-treatment changes on any primary or secondary outcome variables.

One-Month Follow-up.

To assess whether the effects of treatment were maintained at one-month follow-up, a series of repeated measures ANOVAs were performed, with Time as the independent variable (Post-treatment and Follow-up), and the primary and secondary measures as dependent variables. All post-treatment improvements for the Treatment group were maintained at follow-up. Further, scores on DASS-Depression and Stress subscales, and EDI-3 Drive for Thinness, Low Self Esteem, Personal Alienation, and Interoceptive Deficits subscales all significantly improved during the post-treatment to follow-up period. Table 4.7 presents the means, standard deviations and effects of time for primary and secondary outcome variables.
Table 4.7

Means, Standard Deviations and Main Effects of Time for Primary and Secondary Outcome Variables from Post-Treatment to One-month Follow-up.

<table>
<thead>
<tr>
<th>Measure</th>
<th>Pre-treatment (n = 39)</th>
<th>Post-treatment (n = 39)</th>
<th>Follow-up (n = 31)</th>
<th>Effect of Time</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>M (SD)</td>
<td>M (SD)</td>
<td>M (SD)</td>
<td>F</td>
</tr>
<tr>
<td>Binge/week</td>
<td>3.55 (3.60)</td>
<td>1.33 (2.22)</td>
<td>1.10 (1.85)</td>
<td>.77</td>
</tr>
<tr>
<td>Purge/week</td>
<td>1.30 (2.32)</td>
<td>.52 (1.46)</td>
<td>.29 (.78)</td>
<td>2.44</td>
</tr>
<tr>
<td>Non-purge/week</td>
<td>2.43 (2.77)</td>
<td>.87 (2.01)</td>
<td>.94 (2.08)</td>
<td>.03</td>
</tr>
<tr>
<td><strong>OQ45</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Symptom Distress</td>
<td>46.64 (12.72)</td>
<td>28.97 (15.97)</td>
<td>27.09 (15.8)</td>
<td>3.2</td>
</tr>
<tr>
<td>Interpersonal Relations</td>
<td>21.95 (2.99)</td>
<td>13.02 (8.34)</td>
<td>11.94 (7.71)</td>
<td>3.0</td>
</tr>
<tr>
<td>Social Role</td>
<td>12.97 (4.09)</td>
<td>8.86 (4.64)</td>
<td>8.59 (4.29)</td>
<td>.35</td>
</tr>
<tr>
<td><strong>DASS</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Depression</td>
<td>8.16 (5.76)</td>
<td>4.53 (5.56)</td>
<td>3.43 (4.67)</td>
<td>4.50</td>
</tr>
<tr>
<td>Anxiety</td>
<td>5.42 (4.11)</td>
<td>2.43 (3.47)</td>
<td>2.10 (3.23)</td>
<td>.45</td>
</tr>
<tr>
<td>Stress</td>
<td>10.24 (4.58)</td>
<td>6.4 (5.92)</td>
<td>5.17 (5.51)</td>
<td>6.51</td>
</tr>
<tr>
<td><strong>RSES</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>26.56 (4.71)</td>
<td>20.94 (5.87)</td>
<td>20.86 (5.31)</td>
<td>.02</td>
</tr>
<tr>
<td><strong>FFMQ</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Nonjudge</td>
<td>23.46 (8.11)</td>
<td>32.47 (7.74)</td>
<td>33.36 (7.92)</td>
<td>2.68</td>
</tr>
<tr>
<td>Nonreact</td>
<td>15.44 (5.31)</td>
<td>20.27 (6.04)</td>
<td>20.72 (6.05)</td>
<td>.46</td>
</tr>
<tr>
<td>Observe</td>
<td>21.15 (6.24)</td>
<td>26.41 (7.17)</td>
<td>27.00 (6.89)</td>
<td>.86</td>
</tr>
<tr>
<td>Actaware</td>
<td>25.12 (6.14)</td>
<td>30.92 (6.34)</td>
<td>31.34 (6.09)</td>
<td>.73</td>
</tr>
<tr>
<td>Describe</td>
<td>25.10 (6.91)</td>
<td>28.16 (6.64)</td>
<td>28.80 (5.47)</td>
<td>1.06</td>
</tr>
</tbody>
</table>

Note: OQ45 = Outcome Questionnaire 45.2; DASS = Depression Anxiety Stress Scale; RSES = Rosenberg Self-esteem Scale; FFMQ = Five Facet Mindfulness Questionnaire; Actaware = Act with Awareness
<table>
<thead>
<tr>
<th>Measure</th>
<th>Pre-treatment ($n = 39$)</th>
<th>Post-treatment ($n = 39$)</th>
<th>Follow-up ($n = 31$)</th>
<th>Effect of Time</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>$M$ (SD)</td>
<td>$M$ (SD)</td>
<td>$M$ (SD)</td>
<td>$F$</td>
</tr>
<tr>
<td>Drive for Thinness</td>
<td>21.23 (5.81)</td>
<td>14.74 (9.15)</td>
<td>13.10 (8.73)</td>
<td>2.78</td>
</tr>
<tr>
<td>Bulimia</td>
<td>19.95 (6.43)</td>
<td>11.10 (8.93)</td>
<td>10.29 (9.71)</td>
<td>1.33</td>
</tr>
<tr>
<td>Body Dissatisfaction</td>
<td>30.41 (8.20)</td>
<td>24.32 (11.90)</td>
<td>21.68 (12.25)</td>
<td>9.61</td>
</tr>
<tr>
<td>Low Self Esteem</td>
<td>12.87 (5.65)</td>
<td>8.13 (6.80)</td>
<td>6.48 (5.42)</td>
<td>6.68</td>
</tr>
<tr>
<td>Personal Alienation</td>
<td>11.72 (6.32)</td>
<td>8.03 (6.66)</td>
<td>6.06 (5.32)</td>
<td>9.87</td>
</tr>
<tr>
<td>Interpersonal Insecurity</td>
<td>11.10 (5.40)</td>
<td>7.29 (5.13)</td>
<td>6.68 (4.96)</td>
<td>2.14</td>
</tr>
<tr>
<td>Interpersonal Alienation</td>
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<td>8.42 (6.04)</td>
<td>7.84 (5.96)</td>
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</tr>
<tr>
<td>Interoceptive Deficits</td>
<td>13.85 (8.50)</td>
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<td>6.32 (5.64)</td>
<td>4.49</td>
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<tr>
<td>Emotional Dysregulation</td>
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<td>4.74 (5.36)</td>
<td>1.27</td>
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<tr>
<td>Perfectionism</td>
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<td>11.55 (6.79)</td>
<td>11.39 (6.86)</td>
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<tr>
<td>Maturity Fears</td>
<td>7.41 (5.14)</td>
<td>5.97 (5.70)</td>
<td>5.55 (5.88)</td>
<td>1.39</td>
</tr>
<tr>
<td>Asceticism</td>
<td>10.77 (5.54)</td>
<td>6.61 (4.39)</td>
<td>6.42 (4.51)</td>
<td>.15</td>
</tr>
</tbody>
</table>

*Note: EDI-3 = Eating Disorders Inventory-3*

**Clinical Significance: Group Level**

*Primary Outcome Variables.* At the group level, the mean post-treatment weekly frequencies for binge episodes and compensatory behaviours no longer met DSM-IV diagnostic criteria (presented above in Table 4.7).

*Secondary Outcome Variables.* For the Treatment Group, the mean post-treatment scores on all OQ45 and DASS subscales were no longer within the clinical ranges, which were maintained at follow-up. As mean pre-treatment DASS Anxiety scores were within the ‘mild’ range, a floor effect may have prevented changes of a sufficient magnitude to reach RCI criteria. The EDI-3 Bulimia mean subscale scores changed from being in the ‘Elevated’ to ‘Typical’ ranges, Low Self Esteem, Personal Alienation, Interoceptive Deficits and Asceticism mean subscale scores changed from...
Typical’ to ‘Low’ at post-treatment, which were maintained at follow-up. Mean Body Dissatisfaction scores remained within the ‘Typical’ range at post-treatment, but changed to the ‘Low’ range at follow-up. Scores on the OQ45 Symptom Distress, Interpersonal Relations and EDI-3 Bulimia subscales were found to have reliably changed with at least 95% confidence from pre- to post-treatment, and were maintained at follow-up. While mean pre-to post-treatment scores on the DASS Depression and Stress, EDI-3 Drive for Thinness and Low Self Esteem subscales had not reliably changed at post-treatment, they had evidenced reliable change at follow-up. Table 4.8 presents a summary of these findings.
Table 4.8

**Clinical Significance and Reliable Change of Mean OQ45, DASS and EDI-3**

*Subscales at Pre- and Post-Treatment, and One Month Follow-up.*

<table>
<thead>
<tr>
<th>Measure</th>
<th>Clinical Range</th>
<th>Reliable Change</th>
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</thead>
<tbody>
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<td></td>
<td>Pre-treatment</td>
<td>Post-treatment</td>
</tr>
<tr>
<td></td>
<td>$(n = 39)$</td>
<td>$(n = 39)$</td>
</tr>
<tr>
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<td></td>
</tr>
<tr>
<td>OQ45</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Symptom Distress</td>
<td>Clinical</td>
<td>Non-clinical</td>
</tr>
<tr>
<td>Interpersonal Relations</td>
<td>Clinical</td>
<td>Non-clinical</td>
</tr>
<tr>
<td>Social Role</td>
<td>Clinical</td>
<td>Non-clinical</td>
</tr>
<tr>
<td>DASS</td>
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<tr>
<td>Depression</td>
<td>Moderate</td>
<td>Normal</td>
</tr>
<tr>
<td>Anxiety</td>
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<td>Normal</td>
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<td>Stress</td>
<td>Moderate</td>
<td>Normal</td>
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<td>EDI-3</td>
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<td></td>
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<tr>
<td>Drive for Thinness</td>
<td>Typical</td>
<td>Low</td>
</tr>
<tr>
<td>Bulimia</td>
<td>Elevated</td>
<td>Typical</td>
</tr>
<tr>
<td>Body Dissatisfaction</td>
<td>Typical</td>
<td>Typical</td>
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<td>Low Self Esteem</td>
<td>Typical</td>
<td>Low</td>
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<tr>
<td>Personal Alienation</td>
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<td>Low</td>
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<td>Asceticism</td>
<td>Typical</td>
<td>Low</td>
</tr>
</tbody>
</table>

*Note:* OQ45 = Outcome Questionnaire 45.2; DASS = Depression, Anxiety and Stress Scale; EDI-3 = Eating Disorder Inventory-3.
As clinical cut-off scores were not available for the FFMQ or RSES, clinical cutoff criteria was defined as post-treatment scores being greater than two standard deviations beyond the pre-treatment mean (Jacobson & Truax, 1991). Results indicate that mean post-treatment and follow-up scores on the RSES and FFMQ Nonjudge and Act with Awareness subscales met criteria for Reliable Change with at least 95% confidence. However, mean post-treatment and one-month follow-up scores were not greater than two standard deviations beyond the pre-treatment mean. Table 4.9 presents a summary of these findings.

Table 4.9

Clinical Significance and Reliable Change of RSES and FFMQ Subscales at Post-Treatment and One Month Follow-up

<table>
<thead>
<tr>
<th>Measure</th>
<th>SD Beyond Pre-Treatment Mean*</th>
<th>Reliable Change</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Post-treatment (n = 39)</td>
<td>Follow-up (n = 31)</td>
</tr>
<tr>
<td>RSES</td>
<td>1.13</td>
<td>1.21</td>
</tr>
<tr>
<td>FFMQ</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Non-judge</td>
<td>1.10</td>
<td>1.22</td>
</tr>
<tr>
<td>Nonreact</td>
<td>.86</td>
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<tr>
<td>Observe</td>
<td>.78</td>
<td>.94</td>
</tr>
<tr>
<td>Actaware</td>
<td>.90</td>
<td>1.01</td>
</tr>
<tr>
<td>Describe</td>
<td>.41</td>
<td>.54</td>
</tr>
</tbody>
</table>

Note: * = (M Time 2 – M Time 1)/SD of M Time 1; RSES = Rosenberg Self-Esteem Scale; FFMQ = Five Facet Mindfulness Questionnaire; Actaware = Act with Awareness
Clinical Significance: Participant Level

The first step in determining clinical significance is the assessment of whether participants’ post-treatment scores were within the normal range. The second step required the assessment of reliable change. Participants could be deemed to have **recovered** if the change was reliable, and passed cutoff criteria, **improved** if scores met RCI but not cutoff criteria, **unchanged** if neither criteria were met, or **deteriorated** if scores passed RCI criteria, but worsened (Jacobson & Truax, 1991).

**Primary Outcome Variables.** Participants were classified as achieving abstinence if there were no episodes of the bingeing or compensatory behaviours, and improved if the weekly frequency of episodes were below DSM-IV diagnostic criteria. As these behaviours were not based on scale scores, estimates of reliable change could not be calculated. Table 4.10 presents the proportion of participants who were improved and were abstinent from bingeing and compensatory behaviours at post-treatment, and at one month follow-up.
Table 4.10

Percentage of Participants who Reported Post-Treatment Abstinence and Improvement on Binge Eating and Compensatory Behaviours

<table>
<thead>
<tr>
<th>Behaviour</th>
<th>Post-treatment (n = 39)</th>
<th></th>
<th>Follow-up (n = 31)</th>
</tr>
</thead>
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<tr>
<td></td>
<td>Abstinent (%)</td>
<td>Improved (%)</td>
<td>Abstinent (%)</td>
</tr>
<tr>
<td>Binge Episode</td>
<td>62.2</td>
<td>75.7</td>
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<tr>
<td>Vomit</td>
<td>83.8</td>
<td>91.9</td>
<td>87.5</td>
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<tr>
<td>Laxatives</td>
<td>97.3</td>
<td>97.3</td>
<td>96.9</td>
</tr>
<tr>
<td>Purge total</td>
<td>81.1</td>
<td>89.2</td>
<td>84.4</td>
</tr>
<tr>
<td>Excessive Exercise</td>
<td>81.1</td>
<td>83.8</td>
<td>81.3</td>
</tr>
<tr>
<td>Fasting</td>
<td>94.6</td>
<td>100</td>
<td>93.8</td>
</tr>
<tr>
<td>Non-purge Total</td>
<td>78.4</td>
<td>83.8</td>
<td>78.1</td>
</tr>
</tbody>
</table>

Note: Abstinence = no episodes/week; Improved = <2 episodes/week

Secondary Outcome Variables. Estimates of reliable and clinically significant change were calculated for each participant in the Treatment Group. In determining whether participants were in the non-clinical range, the following criteria were used.

For the DASS subscales the non-clinical range was classified as being within the ‘Mild’ or ‘Normal’ range, and for the EDI-3, scores had to fall within the ‘Low’ range for each subscale. OQ45 were classified according to the administration manual (SD = < 36; IR = < 19, SR = <15; Lambert et al., 1996). The greatest proportion of reliable change was evidenced on the OQ45 Symptom Distress and Interpersonal relations subscales, whereby two-thirds of participants evidenced reliable change with 95% confidence. A considerable proportion of participants moved from clinical to non-clinical ranges at post-treatment, and with the exception of DASS-Anxiety and EDI-3 Perfectionism subscales, these percentages increased further at follow-up. In almost all cases, the proportion of participants who were in on-clinical ranges ant post-
treatment and follow-up exceeded the proportion who achieved reliable change. On this basis, the RCI percentages at post-treatment and follow-up reflect the proportion of participants who could be deemed to have recovered according to Jacobson and Truax’s (1991) criteria. Exceptions to this are the OQ45 Interpersonal Relations and EDI-3 Bulimia subscales, in which the proportion of participants who met RCI criteria was less than the proportion in non-clinical ranges. Thus, for the OQ45 Interpersonal Relations subscale, 64% of participants met post-treatment recovery status, while 2% met improvement status. For the EDI-3 Bulimia subscale, 33% met post-treatment recovery status, and 8% achieved improvement status.

One participant (2.5% of the treatment group) deteriorated on OQ45 Symptom Distress and Interpersonal Relations subscales, DASS-Depression, EDI-3 Low Self-esteem, Interoceptive Deficits, Emotional Dysregulation, and Maturity Fears subscales. Table 4.11 presents a summary of the proportion of participants who achieved reliable change, and were within non-clinical ranges at pre-treatment, post-treatment, and one month follow-up on the OQ45, DASS and EDI-3.
Table 4.11

Percentage of the Treatment Group who Achieved Reliable Change and were in Non-Clinical Ranges on the EDI-3, OQ45, and DASS Subscales.

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<th>RCI</th>
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<th>Non-Clinical Ranges</th>
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<tr>
<td></td>
<td>Pre-treatment (%)</td>
<td>Follow-up (%)</td>
<td>Pre-treatment (%)</td>
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<tr>
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<td>21</td>
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<td>Stress</td>
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<td>50</td>
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<tr>
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<td>Interpersonal Alienation</td>
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<td>Asceticism</td>
<td>15.5</td>
<td>21</td>
<td>51</td>
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</table>

*Note: OQ45 = Outcome Questionnaire 45.2; DASS = Depression, Anxiety and Stress Scales; EDI-3 = Eating Disorder Inventory-3.*

On the RSES, 44% of treatment participants achieved reliable change with 95% confidence, of which 43% maintained this at follow-up. On FFMQ subscales,
51% achieved reliable change on Nonjudge, which increased to 63% at follow-up. On the Nonreact subscale, 36% of participants reliably changed, which was maintained by 34% at follow-up, although 6% had reliably deteriorated at follow-up. Act with Awareness, 41% reliably changed at post-treatment, which increased to 43% at follow-up, although a further 3% deteriorated by follow-up. For the Observe subscale, 41% or participants reliably changed at post-treatment, which was maintained by 23% at follow-up. For the Describe subscale, 23% evidenced post-treatment reliable change, which was also maintained by 23% at follow-up, although 3% became worse.

**Group Cohesion.**

Pairwise comparisons showed a significant increase in the GCQ Engagement subscale, from early treatment (Session 2; \( M = 18.05, SD = 4.18 \)) to late-treatment (Session 7; \( M = 21.93, SD = 3.44 \)), \( F (1, 28) = 25.39, p = .0005, (d = .92) \).

The GCQ Avoidance subscale significantly decreased across treatment, from early (Session 2; \( M = 7.36, SD = 3.23 \)) to late treatment (Session 7; \( M = 4.43, SD = 2.73 \)), \( F (1, 28) = 15.15, p = .001, (d = .91) \). Initial ANCOVA analyses produced factor by covariate interactions, which violates the assumptions of multivariate analyses. Therefore, regression analyses were conducted, using each of the primary and secondary outcome variables as dependent variables. None of the correlations between GCQ Engagement and change scores on primary and secondary outcome variables were significant at the \( p < .05 \) level, at early or mid-treatment (Session 4). Similarly, none of the correlations between GCQ Avoidance and change scores on primary and secondary outcome variables were significant at the \( p < .05 \) level, at early or mid-treatment.
To investigate whether mindfulness contributed to symptom change over the course of treatment, a hierarchical regression analysis was performed. Analyses were performed on FFMQ subscales separately, due to the obvious collinearity between subscales. In the first instance (Model 1), the pre-treatment dependent variable was entered as a predictor of the post-treatment outcome score. The second step (Model 2) included pre-treatment levels of the FFMQ subscale as a predictor of change in the dependent variable. Thirdly, (Model 3) the post-treatment FFMQ subscale score was entered as a predictor of change in the dependent variable.

*Primary Outcome Variables.* As can be seen in Table 4.12, none of the post-treatment FFMQ scores did not predict post-treatment binge frequencies, although there was a trend toward significance for the FFMQ-Act with Awareness subscale. Post-treatment scores on FFMQ-Nonjudge significantly predicted outcomes for Purging and Non-purging behaviours, and post-treatment scores on the FFMQ-Describe and Act with Awareness subscales significantly predicted Non-Purging behaviours.
Table 4.12

Hierarchical Regression Analyses for FFMQ Subscales and Primary Variables.

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<th>Measure</th>
<th>R</th>
<th>R²</th>
<th>B</th>
<th>R² Change</th>
<th>F</th>
<th>df 1</th>
<th>df 2</th>
<th>Sig. F change</th>
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*Note:* Model 1 has identical output for each outcome variable subscale, and is thus not repeated.

FFMQ = Five Factor Mindfulness Questionnaire; Actaware = Act with Awareness.

**Secondary Outcome Variables.** As can be seen in Table 4.13, for the majority of the post-treatment scores on secondary outcome variable, the post-treatment FFMQ subscales significantly predicted outcome, even when pre-treatment scores on the dependent variables were accounted for. The exceptions to this are for the FFMQ-Observe and OQ45 Social Role, FFMQ-Describe and DASS-Depression, FFMQ-Observe and EDI-3 Bulimia, however these all displayed a trend toward significance.

There were four secondary outcome variables for which FFMQ post-treatment scores did not predict outcome. These were for FFMQ-Describe and DASS-Anxiety, FFMQ-Observe and EDI-3 Drive for Thinness and Body Dissatisfaction.
Table 4.13

Hierarchical Regression Analyses for FFMQ Subscales and Secondary Variables.

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*Note* = * Model 1 has identical output for each outcome variable subscale, and is thus not repeated.
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Note: FFMQ = Five Factor Mindfulness Questionnaire; OQ45 = Outcome Questionnaire 45.2; DASS = Depression, Anxiety, Stress Scales; EDI-3 = Eating Disorder Inventory-3
Homework Practice

Participants reported spending on average, 71.27 minutes per week ($SD = 52.15$; range = 0 to 250 mins) engaged in formal mindfulness practice. The mean number of days per week for formal practice was 3.28 ($SD = 1.89$; range = 0 to 7 days). The mean number of days for informal practice was 3.52 ($SD = 1.55$; range 0 to 7). To investigate the contribution of homework practice to outcome, a correlational analysis was firstly performed to determine whether the participants who were abstinent at post-treatment had reported engaging in more mindfulness practice than participants who did not achieve abstinence. Results indicated that there was a negative point-biserial correlation between non-abstinence and the number of formal days per week, whereby participants who did not achieve abstinence spent fewer days engaging in formal practice, ($r = -.24$), however this was not significant. There was no correlation between abstinence and number of informal days per week.

To analyse the contribution of minutes of formal practice to outcome,

Inspection of the frequency distribution of total minutes of formal practice suggested cut-off points of zero to 205 minutes (33.3% of Treatment participants), 225 to 380 minutes (33% of participants), and 446 to 1125 minutes (33% of participants).

Inspection of the frequency distribution of average minutes per week of formal practice suggested cut-off points of zero to 52.5 minutes (46% or participants), 54 - 109 minutes (34% or participants), and 113 to 250 minutes (20% of participants). Chi-square analyses were performed to determine whether participants who engaged in more total and average minutes of formal practice were more likely to achieve post-treatment abstinence from bingeing and compensatory behaviours. There were no significant results from this analysis. Chi-square analyses were repeated for participants who had achieved clinically significant post-treatment improvements on
the OQ45 and DASS, which revealed no significant differences in levels of homework practice for participants who had achieved, or not achieved clinically significant change.

*Follow-up Practice.* The majority of participants (65.63% of the Treatment group) indicated that they maintained formal mindfulness practice in the post-treatment to follow-up period, although only a minority (6.3%) maintained daily practice. 28.1% of participants maintained practice for three to five days per week, and 31.2% reported engaging in formal practice for one to two days per week. The majority of participants (43.8%) spent 16 to 30 minutes in formal practice, 6.3% reported less than fifteen minutes, and 6.2% more than fifteen minutes. Results indicate that considerably more participants maintained regular informal mindfulness practice, with 40.6% reporting daily practice, 18% 5 to 6 days per week, and only 9.4% did not report engaging in any informal practice.
The first aim of the current research project was to investigate the effectiveness of a group mindfulness treatment for BN, BED and ED-NOS. Overall, the results showed that this treatment resulted in significant reductions on both primary and secondary variables, compared to a Waitlist control group. Pre to post treatment frequencies of binge episodes, purging and non-purging behaviours significantly decreased. The decreases in purging behaviours between the Treatment and Waitlist were not significant, as Waitlist participants’ purging frequencies also significantly decreased while on the waitlist.

There were significant pre to post treatment improvements in client functioning, depression, anxiety, stress, self-esteem, eating disordered-related cognitions, compared to the Waitlist control group. Large effect sizes were found on measures of client functioning (OQ45; Symptom Distress = 1.28, Interpersonal Relations = .91, Social Role = 2.84), depression, anxiety and stress (DASS; Depression = .66, Anxiety = .73, Stress = .86) and self-esteem (RSES = 1.13). Medium to large effect sizes were achieved on eating disorder-related cognitions (EDI-3; Drive for Thinness = 1.10, Bulimia = 1.32, Body Dissatisfaction = .72, Low Self Esteem = .85, Personal Alienation = .56, Interpersonal Alienation = .48, Interpersonal Insecurity = .63, Interoceptive Deficits = .64, Emotional Dysregulation = .32, Perfectionism = .40, Asceticism = .66). Levels of mindfulness significantly increased over treatment, with medium to large effect sizes (FFMQ; Nonjudge = 1.10, Nonreact = .86, Observe = .78, Act with Awareness = .90, Describe = .42). These improvements were not only maintained at one-month follow-up, as there were even further improvements on measures of depression ($d = .20$), stress ($d = .21$), and eating
related-cognitions, including body dissatisfaction ($d = .22$), low self esteem ($d = .24$), personal alienation ($d = .30$), and interoceptive deficits ($d = .24$).

The treatment also resulted in clinically significant change at a group level, whereby the mean post-treatment frequencies of binge eating (1.22 episodes per week) and compensatory behaviours (Purge = .54 episodes per week, Non-purge = .78 episodes per week) no longer met DSM-IV diagnostic criteria. At the participant level, 62% of participants achieved post-treatment abstinence from bingeing, 81% reported abstinence from purging behaviours, and 78% were abstinent from non-purging behaviours. These abstinence rates were maintained at follow-up. Analysis of clinically significant change on secondary outcome variables revealed that for a substantial proportion of participants, the mindfulness treatment program resulted in clinically meaningful improvements on a range of measures, particularly interpersonal relationships and the distress caused by their symptoms, whereby approximately two-thirds of the sample achieved recovery status. The considerable improvements on the OQ45 Symptom Distress subscale ($d = 1.28$, $p < .0005$) are conceptually consistent with the aims of a mindfulness intervention; the relationship to a particular experience is hypothesised to change, rather than attempting to change the experience or symptom itself (Baer et al., 2006; Kabat-Zinn, 1990). Thus, while some participants may be still experiencing symptoms such as eating-disordered related cognitions or stress, it appears the presence of these symptoms is resulting in less subjective distress, and is impacting less on their interpersonal relationships.

Group cohesion was found to significantly increase over the course of treatment, evidenced by increases in participants’ perception of engagement ($d = .92$, $p < .0005$), and decreases in their perception of avoidance ($d = .91$, $p = .001$) in the treatment groups. Levels of group cohesion did not significantly predict symptom
improvements. Meanwhile, significant increases in levels of mindfulness from pre to post treatment did significantly predict symptom improvement in the treatment group. Participants engaged in regular formal and informal homework practice, however the time spent practicing did not significantly contribute to outcomes.

Comparisons with Other Group Treatments

It is noteworthy that 69% of the sample reported receiving psychological treatment prior to the group mindfulness program. While it is unknown whether these treatments had also resulted in post-treatment abstinence or significant improvements, it does indicate that for the majority of participants in this project, previous treatments had not been effective in the long-term. Comparisons with treatments reviewed in Chapter One indicate that the mindfulness treatment used in the current research project shows considerable promise.

Bulimia Nervosa Group Treatments. This project was the first known group-mindfulness treatment for participants with BN. Compared to other group-BN treatments with available data, the current treatment resulted in higher rates of binge and purge abstinence (62% and 81%, respectively) and reductions in binge and purging frequency (65% and 58%, respectively). A meta-analysis of group-CBT for BN reported binge abstinence rates of 20.5% for treatment completers (Thompson-Brenner et al., 2003). Another CBT group treatment reported frequency reductions of 24% for binge eating, and 25% for purging behaviours, and abstinence rates of 45% (binge) and 63% (purge; Jacobi et al., 2002). It is the only BN group treatment to date, using any type of group intervention, in which mean post-treatment frequencies of binges and compensatory behaviours no longer meet diagnostic criteria.
Effect sizes for binges reported in the current research ($d = .65$) were larger than others reported for BN treatments ($d = .44$; Thompson-Brenner et al., 2003). While effect sizes for purging behaviours in the current study were smaller than reported elsewhere in the literature ($d = .33$ versus $d = .68$; Thompson-Brenner et al., 2003), the pre-treatment frequencies of purging behaviours in the current sample ($M = 1.30$ episodes per week) were less than those reported in other research, such as 15.7 biweekly episodes (Wolf & Crowther, 1990), due to the inclusion of diagnostic groups without comparatively lower levels of purging. The only BN group treatment study to assess clinical significance reported rates of below 10% (Openshaw et al., 2004); far below those reported in the current project, which for measures such as the OQ45 Symptom Distress and Interpersonal Relations subscales, exceeded 60%.

Comparisons of secondary outcome variables are difficult due to differences in measures used. In two studies which used the EDI, Wolf and Crowther (1992) reported statistically significant improvements on five out of the twelve subscales, and while Jacobi and colleagues (1992) reported improvements on all EDI subscales, although this latter study was compromised by the very high dropout rates. In the current study, there were statistically significant improvements on all but the EDI-3 Maturity Fears subscale however this subscale is more relevant to AN presentations (Fairburn & Cooper, 1993). Based on what comparisons can be made, the current research project overall appears to have comparatively resulted in more widespread improvements than existing group-treatments for BN.

**Binge Eating Disorder.** Comparatively, this study also demonstrated very good results for BED. The reductions in binge eating frequency in the current research project were of less magnitude than some reported in group-CBT and IPT treatment outcomes for BED. Agras and colleagues (1995) reported binge reductions of 77% for
CBT, Dingemans and colleagues (2007) reported reductions of 86%, Telch and colleagues achieved rates of 94%. Wilfley and colleagues (1993) reported reductions of 71% for IPT, but only 41% for CBT, and even higher rates of reductions (CBT = 94%, IPT = 90%) in a later study (2002), which was of a longer duration (20 sessions) than other research.

Binge abstinence rates in the current study were higher than other CBT (55%; Agras et al., 1995) and IPT treatments (CBT = 28%, IPT = 44%; Wilfley et al., 1993). Abstinence rates were equivalent to those reported by Dingemans and colleagues (63%; 2007), but lower than the CBT and IPT treatments reported by Wilfley and colleagues (82% and 74%, respectively; 2002). However, with the exception of Wilfley and colleagues (2002), this is the only group treatment study for BED in which all secondary outcome variables significantly improved, with the exception of the EDI-3 Maturity Fears subscale. The current treatment program was considerably shorter than the preceding treatments, and less than half the length of Wilfley and colleagues’ (2002) 20 session CBT versus IPT study. It is possible that even greater improvements could have been achieved with longer program duration. As clinically significant change (other than binge frequency) has not been reported in other BED studies, comparisons in terms of clinical significance data cannot be made.

**Mindfulness-based Treatments.** In comparison to the mindfulness studies which reported binge frequency reductions and abstinence rates, DBT treatments reported higher rates of reductions (79% and 100%; Telch et al., 2000, 2001) and abstinence rates (82% and 89%; Telch et al., 2000, 2001) than the current study, although it too was of longer treatment duration. DBT incorporates a mindfulness component, which may have contributed toward these outcomes. The only treatment
study of comparable length (Smith et al., 2006) did not provide enough data on binge frequency and diagnostic criteria to make robust comparisons.

A salient issue to emerge from these comparisons is that many of the studies which reported higher rates of binge reduction and abstinence were also of a considerably longer duration than the current treatment. However, many of the MBSR and MBCT studies that included clinical populations - and achieved positive outcomes - were also of eight sessions’ duration. None of these studies reported effect sizes, or reliable and clinically significant change, so comparisons with the mindfulness treatment in the current research project are not possible. In summary, the findings from the current research project suggest that mindfulness is indeed a promising alternative for the treatment of binge eating.

Diagnostic Issues

This was the first known treatment research project to include ED-NOS participants. Consistent with other estimates (Fairburn & Bohn 2005), the ED-NOS presentation was the most common, comprising 46.8% of participants. There were no significant differences between diagnostic variables on most pre-treatment demographic or outcome variables which were altogether unexpected’ given the recent evidence in support of a transdiagnostic approach. Consistent with other findings, there were differences between diagnostic groups on BMI, which was significantly higher for the BED than BN (Vervaet, van Heeringen, & Audenaert, 2004) and ED-NOS participants. However, there were no other demographic differences. BMI in the ED-NOS group was higher than BN, which may be due to significantly lower levels of EDE dietary restraint evidenced in the ED-NOS group,
and also possibly due to the BN participants reporting higher pre-treatment frequencies of purging behaviour.

Consistent with other research, there were few differences between diagnostic categories on baseline psychological features (Barry et al., 2003; Bulik et al., 2000), other than the BED group having significantly higher pre-treatment FFMQ Nonreact scores. The higher scores for BN participants on the EDI-3 Bulimia subscale are congruent with that diagnosis. Similar to other findings, BN participants had higher levels of eating concern, shape and weight concern, and fear of weight gain than the ED-NOS participants (Turner & Bryant-Waugh, 2004). There were no significant differences between BN and BED on the Eating Concern Subscale. Furthermore, there were no significant differences in response to treatment between the diagnostic categories. Thus, the pattern of findings from the current research project lends further support for a transdiagnostic solution to the nosological debate.

Previous research had suggested that the sense of loss of control, rather than the quantity of food consumed, should determine the presence of binge eating (Beglin & Fairburn, 1992; Johnson, Boutelle, Torgrud, Davig, & Turner, 2000). Findings from the EDE in the current research support this, in that 68% of participants reported a sense of loss of control in interviewer-rated subjective binges, which were of a lesser quantity than objective binge episodes.

This study also provided the first known assessment of both purging and non-purging compensatory behaviours. There were no significant differences between diagnostic groups on the pre-treatment frequency of non-purging compensatory behaviours (excessive exercise and fasting). This is a novel finding. In fact, while BED participants engaged in minimal purging behaviours at pre-treatment, their frequencies of non-purging behaviours were approaching diagnostic thresholds for
BN. It is not known how representative this is, as these behaviours are not routinely included in BED research. The mean pre-treatment binge and compensatory behaviour frequencies for ED-NOS are also within the diagnostic range for BN. According to the EDE diagnostic criteria, participants must receive a rating of at least 4 out of 6 on evaluations of shape and weight, in addition to bingeing and compensatory behaviours (Fairburn & Cooper, 1993); perhaps the relaxation of these criteria may have resulted in more BN cases. Non-purging compensatory behaviours were also less responsive to treatment, whereby abstinence and improvement rates were lower for non-purging versus purging behaviours.

Participants’ verbal reports during the course of treatment provided interesting insight into the effects of a mindfulness treatment on the experience of binge eating. Participants who had residual binge episodes at the conclusion of treatment reported that they were less distressed by binge eating, that the intensity and sense of urgency to binge had reduced, and they were able to stop binging after eating a smaller amount of food than before the program. As reported in other mindfulness-based research (Baer et al., 2006), some participants began recording any time they ate in response to stress or an emotional experience, rather than in response to hunger or for nutritional purposes, as a ‘binge’. Thus, it is possible that the post-treatment estimates of binging may be somewhat over-estimated, although by including the additional estimate of ‘loss of control’ on the BCBR rather than just the binge episode, some inflated reports may have been prevented.

*The Role of Mindfulness*

Consistent with predictions, levels of mindfulness significantly increased from pre to post treatment, and were maintained at one-month follow-up. All FFMQ
subscales significantly increased from pre to post treatment for the Treatment versus Waitlist control group, with the largest effect sizes for Nonjudge (\(d = 1.10\)) and Act with Awareness (\(d = .90\)). This is consistent with findings of larger effect size for the Nonjudgmental Acceptance subscale of the KIMS in an MBCT treatment for BED, and is not surprising, given that KIMS items were incorporated into the FFMQ Nonjudge subscale (Baer et al., 2006). Thus, unlike the CBT and IPT treatment studies, the mindfulness treatment did result in significant pre-post treatment changes on the construct (mindfulness) associated with the theoretical orientation (Wilfley et al., 1993). Although a previous MBCT study has demonstrated increases in mindfulness over treatment (Baer et al., 2006), the current research is the first to demonstrate this compared to a control group. As levels of mindfulness in the Waitlist control group did not significantly change, it can be tentatively interpreted that the increases in mindfulness may be due to the mindfulness treatment program.

Further, increases in mindfulness subscales were found to predict change on many of the outcome variables, particularly the secondary psychological measures. Each of the five FFMQ subscales predicted change on the RSES, and all three OQ45 subscales. Of the FFMQ subscales, the Nonjudge, Nonreact and Act with Awareness subscales predicted change on every secondary outcome variable. The Describe subscale evidenced a trend toward predicting change on the DASS-Depression, but not Anxiety subscales. Less impressive findings emerged for the FFMQ Observe subscale. This is a very interesting replication of a pattern of findings, in which scores on the Observe scale were either unrelated, or related to worse outcomes for inexperienced meditators, but were associated with positive outcomes for experienced meditators (Baer, 2007). This has previously been interpreted as being indicative of increased self-focused attention with beginning mindfulness practice, which becomes
more adaptive over time as self-acceptance increases (Baer, 2007). These findings require further exploration.

In terms of primary outcome variables, only the Nonjudge subscale predicted improvements on purging behaviour, while Describe and Nonjudge predicted change on non-purging. None of the subscales predicted change in binge frequency. These findings will be discussed further in terms of Transdiagnostic Process Model of Binge Eating.

The clinical significance data on mindfulness provided what may seem to be counterintuitive findings, in that a small percentage of participants’ scores on the FFMQ actually decreased from pre to post-treatment, which is indicative of becoming less mindful over time. However, consistent with previously mentioned findings of increases in the reporting of binges (Baer et al., 2006), this may actually reflect a relative lack of pre-treatment mindfulness, in which they lacked awareness of not being mindful. As treatment progressed, many participants reported changes in their perspectives on the assessment battery (administered weekly for another research project). For example, one participant stated that she wasn’t aware of times when she had previously been anxious – she had misinterpreted this as hunger. Thus, apparent decreases in levels of mindfulness may actually represent a more accurate estimation of actual levels of mindfulness, which has implications for the measurement of mindfulness. Of course, an alternative explanation is that these participants did in fact become less mindful.

*Implications for the Transdiagnostic Process Model of Binge Eating.*

This research project has introduced the Transdiagnostic Process Model of Binge Eating, which provides a parsimonious explanation of eating disorder etiology
and maintenance. This Model was supported by a transdiagnostic conceptualisation of mindfulness, and informed the mindfulness group treatment program. As this treatment resulted in significant improvements, with large effect sizes, it can be tentatively stated that this project has provided indirect support for the Transdiagnostic Process Model as a possibly useful conceptualisation of the pathways which contribute to eating disorder symptomatology. Direct support has yet to be demonstrated as the components and pathways were not explicitly measured in this research project.

Rather than aiming primarily for symptom reduction, this treatment targeted underlying transdiagnostic processes, which mindfulness was hypothesised to be effective in reducing. Some of the findings of the current research project lend particular support for this. Elaborative Processing is a major component of the Transdiagnostic Process Model, and the largest effect sizes were found on the Nonjudge subscale of the FFMQ, which is conceptually most similar to non-elaborative processing (Baer, 2007). The Transdiagnostic Process Model also places far more emphasis on the processes underlying the symptoms, rather than the symptoms themselves. Likewise, the FFMQ subscales also appeared to have less predictive power to account for the changes in primary outcome variables, but did predict changes in secondary outcome variables. These findings require replication.

The Contribution of Homework Practice

Compared to the only other known study that reported homework frequency (Ree & Craigie, 2007), participants in the current study reported engaging in slightly more frequent formal practice (3.28 versus 2.78 days per week), but less frequent informal practice (3.52 versus 5.21 days per week; Ree & Craigie, 2007). It was
predicted that homework meditation practice would be significantly related to both levels of mindfulness and symptom improvement in the treatment group, although it was also acknowledged that mixed findings have emerged.

The findings of the current study were consistent with research in which there were no significant relationships between formal or informal mindfulness practice and outcome scores (Astin, 1997; Carlson et al., 2003). While there was a negative correlation between non-abstinence and frequency of formal practice ($r = -.24$), this correlation was not significant. In addition, there was no significant relationship between time spent in formal practice and pre to post treatment increases in mindfulness. This is also consistent other research which found that intensive meditation practice was not associated with outcome measures (Ostafin et al., 2006), and research which found no significant relationship between everyday mindfulness, also measured by the FFMQ, and state mindfulness following meditation (Thompson & Waltz, 2007).

However, clinical observations suggested that those participants who did engage in practice, particularly informal practice, seemed to derive the most benefit from the treatment program. Clinically, some differences were observed in participants’ attitude to practice; while some reported engaging in formal practice as often as twice daily, this seemed to be accompanied by an expectation that this ‘should’ result in symptom reduction, while others approached homework practice with an attitude of curiosity and openness. However, as attitudes toward homework practice were not assessed, this remains unknown. One possible explanation is that the procedure of recording informal practice may not entirely capture the extent of informal practice. Other methods, such as ecological momentary assessment, may provide for the collection of such data in the participant’s natural environment,
without exclusively relying on memory, and limiting the potential for memory biases to distort data (Engel, Wonderlich, & Crosby, 2005). These issues require further research attention, as the apparent lack of contribution of homework practice has implications for mindfulness treatment programs. In summary, while the lack of contribution of homework practice did not provide evidence for a dose-response relationship of mindfulness to outcome, it is possible that homework practice may in fact not facilitate the development of mindfulness.

The Contribution of Group Cohesion

It was hypothesised that levels of group engagement would significantly increase from early to late treatment, and that high mid-treatment levels of engagement and low mid-treatment levels of avoidance would be related to outcome in the treatment group. The results indicated that engagement did significantly increase from early to late treatment ($d = .92, p = <.0005$) and that avoidance significantly decreased from early to end treatment ($d = .91, p = <.0005$). This was consistent with the findings of Castonguay and colleagues (1998), in that participants’ perception of group engagement increased in a linear pattern over the course of therapy. However, levels of group engagement and avoidance did not significantly predict change on any primary or secondary outcome variable at any stage of treatment. This was unexpected, and is inconsistent with previous research findings (Castonguay et al., 1998; Kivlighan & Lilly, 1997). Nonetheless, it is likely that positive outcomes could not have been achieved without group cohesion. The GCQ is a commonly used group measure, which has been previously linked to outcome (Johnson et al., 2006), thus it is unlikely to be an issue of construct validity or sensitivity to change with the measure itself, particularly as significant changes and
large effect sizes were achieved. As this is the first mindfulness-based treatment study to explore the contribution of group cohesion, it is too early to state that cohesion is not related to outcome, and is not a valid alternative mechanism of change – thus these findings require replication.

Limitations

There are several limitations of the current research project. Firstly, participants were not prevented from obtaining treatment while on the Waitlist or receiving concurrent treatment during the treatment program. In the event that additional treatment was sought, participants were encouraged to discuss participation in the group with their therapists, who were supportive in all instances. Despite this, the results indicate that participants who sought treatment were not particularly advantaged compared to those who did not. Participants who were receiving treatment demonstrated significantly greater post-treatment improvements on the FFMQ Act with Act with Awareness and EDI-3 Body Dissatisfaction subscales only. Thus, receiving individual treatment did not seem to lead to greater symptom improvement in terms of behavioural symptoms, or most psychological variables; however these findings also suggest that receiving concurrent treatment did not impede the mindfulness treatment. This seems to contradict research which suggests that mindfulness may be a useful adjunct to other treatment (Weiss et al., 2005). However, data on the length, frequency and type of concurrent treatment was not obtained.

A second limitation is that participants were randomised and informed of group assignment prior to completion of pre-treatment assessment measures, which could potentially have biased pre-treatment scores and influenced dropout. However, for the pre-treatment measures that were administered after randomisation, there were
no significant differences on any primary or secondary variables for participants who commenced versus did not commence treatment, or on primary variables between Treatment and Waitlist participants. While, there were significant differences between Treatment and Waitlist participants on two EDI-3 subscales, whereby the Treatment participants scored higher on Drive for Thinness, and the Waitlist group scored higher on Maturity Fears, there is no clear theoretical link between group allocation and these findings. While there was a higher rate of dropout for Waitlist participants, this is not unusual for treatment studies. However, it is possible that the randomisation and disclosure of group assignment prior to pre-treatment assessment may have influenced the findings in ways that are not discernable.

Waitlist participants receiving treatment reported significantly greater increases on the FFMQ Nonjudge subscale, and a significant reduction in purging behaviours while on the waitlist, compared to Waitlist participants who were not receiving treatment. They also reported a significant increase in the frequency of binges over this time. What is noteworthy is that despite receiving treatment, there were no significant improvements on most symptoms over this eight week period. Again, data as to the type, length and frequency of treatment is not available, nor is there any indication of whether participants were satisfied with treatment. Overall, while concurrent treatment may have represented a confound in the current research project, the data suggests that these treatments had minimal impact on either primary or secondary variables for these participants.

An additional potential confound was previous meditation experience. However, the results indicate that previous meditation experience did not impact on FFMQ scores, or treatment response; thus there was no indication that participants with previous meditation experience achieved comparatively enhanced outcomes.
versus participants with no experience. Previous experience also did not affect the likelihood of dropout, as there were no significant differences on meditation experience for drop-outs compared to completers. It is interesting that participants with meditation experience did not have significantly higher baseline FFMQ scores. Considering the findings regarding the contribution of formal meditation practice to outcome, it may lend support additional support to the theory that state mindfulness and trait mindfulness are not related (Thompson & Waltz, 2007). However, other research has indicated that more experienced meditators do score highly on mindfulness measures (Baer, 2007). As data on the type of meditation practice was not obtained in the current research, firm conclusions cannot be drawn.

Results indicate that participants who dropped out reported higher pre-treatment scores on DASS Anxiety and Stress subscales, OQ45 Symptom Distress, FFMQ Nonreact and EDI-3 Bulimia, Interpersonal Insecurity, Interpersonal Alienation, and Interoceptive Deficits subscales. Dropouts also reported a higher frequency of pre-treatment purging behaviour. This is similar to the findings reported in and individual-CBT versus group-CBT study of BN (Chen et al., 2003), in which dropouts reported higher bingeing, purging and EDI scores, and findings from individual CBT for BN which indicated that dropouts had higher levels of bulimic cognitions, impulsivity and greater shape concerns (Agras et al., 2000). Thus, there is some indication that participants with more severe pre-treatment levels of psychopathology did not find this treatment program beneficial, while elevated EDI-3 scores on Interpersonal Insecurity and Interpersonal Alienation subscales may suggest that for some participants, individual versus group therapy formats may be more acceptable. Limited data is currently available on populations for which mindfulness may not be helpful or be unacceptable, and further research into this is needed.
As the findings regarding the contribution of mindfulness practice to outcome are correlational, temporal precedence and causality cannot be established. While these findings regarding the predictive contribution of mindfulness to outcome are encouraging, until these results are replicated, and temporal precedence is established, it cannot be conclusively stated that mindfulness is necessarily the only active ingredient in this treatment approach.

A further limitation is the reliance on self-report; indeed this is a limitation which is pervasive in the eating disorder literature, particularly regarding constructs that require clinical judgment, such as definitions of a binge, or sense of loss of control (Mitchell & Peterson, 2005). The accuracy of this data is thought to be enhanced by providing definitions of terms (Mitchell & Peterson, 2005), and definitions of a binge, compensatory behaviour, and loss of control were included on the BCBR. However, the reliability of this data cannot be guaranteed.

The BCBR used in this study may not have accurately captured the frequency of compensatory behaviours. Although it included a definition of ‘excessive exercise’ as being more than 60 minutes per session, verbal reports by some participants revealed that they were documenting all exercise sessions, and in at least one instance, this consisted of attendance at a yoga class. Thus, the incidence of excessive exercise in this project may be overestimated. Recent research has revealed that exercise is related to eating disorder pathology only when its postponement is accompanied by guilt or when it is undertaken solely to influence weight or shape (Mond, Hay, Rodgers, & Owen, 2006). Thus, incorporating these features into an operational definition may have produced more accurate estimates.

This research program could have benefited from the inclusion of a longer follow-up period, which was not feasible within the timeline of the current project.
Although the data suggests that treatment effects were maintained at one-month follow-up, a longer period could have provided a stronger indication of the beneficial effects of this program over time. This is particularly salient in the case of eating disorders, in which the majority of relapse occurs four months after the completion of treatment for BN (Fairburn, Peveler, Jones, Hope, & Doll, 1993; Halmi et al., 2002; Mitchell et al., 2004), and within six months for BED (Safer et al., 2002). Finally, as it is to be noted that the components of the Transdiagnostic Process Model of Binge Eating were not explicitly measured in this research project.

**Suggestions for Future Research**

Based on the findings of the current research project, there are several recommendations for future research. There are many aspects of this project that have produced novel findings, and these require further exploration and replication. These include the response to treatment of ED-NOS participants, the frequency of non-purging behaviours in BED samples, and the response to treatment of non-purging versus purging behaviours. Current knowledge of binge eating may be enhanced by further exploration of binges, particularly as the experience of binge eating changes across the course of treatment.

As this is the first mindfulness-only treatment for BN, BED and ED-NOS, and which does not incorporate other therapeutic components, these findings also require replication. The addition of a longer follow-up assessment period would also provide an indication of the extent to which treatment gains were maintained, and rates of relapse. This would also help to provide information on whether residual non-purging behaviours were predictive of relapse. Future treatments could also be of a longer duration; it is possible that participants with more severe psychopathology
could benefit from more treatment sessions (McKisack & Waller, 1997), and higher abstinence rates may be evidenced. The apparent lack of contribution of group cohesion, and homework practice need to be further explored. The findings regarding the decrease in mindfulness for a minority of participants also requires clarification to determine whether this is a measurement issue, or whether mindfulness treatments may not be suitable for some participants.

The pathways outlined in the Transdiagnostic Process Model also require direct testing. This model outlines temporal pathways between transdiagnostic process components and eating disorder symptoms, and these pathways could be directly tested. Further, assessing mindfulness at multiple time points across treatment could provide evidence of a temporal relationship between mindfulness and symptom change. This could also help to determine whether some components of mindfulness, as measured by the FFMQ, increase at different rates. Although it has not been addressed in this thesis, this model could also be adapted for AN etiology, as well as other forms of psychopathology.

**Conclusion: Implications of the Current Research Project**

This research project has addressed many of the problems which have plagued the eating disorders literature. Firstly, this is the first treatment study to include ED-NOS participants and has demonstrated that treatment approaches which work for BN and BED can be generalised to this more common clinical presentation. This project has also provided findings which lend further support for the transdiagnostic solution for eating disorder classification (Fairburn et al., 2003). This is also the first treatment study to assess purging and non-purging behaviours in all current diagnostic groups.
This research project has demonstrated that a mindfulness-only group treatment can be effective in reducing both primary and secondary outcome variables for women who binge eat. It has resulted in abstinence rates which exceed those already achieved by current group treatments for BN. It is the first group treatment study in which mean post-treatment frequencies of binge episodes and compensatory behaviours do not exceed diagnostic criteria. This treatment also appears to be more effective than current group BED treatments in terms of widespread improvements on secondary variables.

In terms of the mindfulness literature, the current research project has been the first to compare levels of mindfulness across treatment with a control group, and was the first to assess the contribution of group factors. It is also the first study to demonstrate that changes in mindfulness predict symptom improvement. This study also provides evidence that mindfulness alone, rather than a combination of mindfulness with other treatment approaches, can be effective in treating binge eating. This project also introduced the Transdiagnostic Process Model of Binge Eating. It is hoped that this model will prompt further research into underlying psychological processes, and further the understanding and application of mindfulness components.

In closing, perhaps the most telling conclusion about the impact of a mindfulness approach for women with eating disorders is a direct quote from one of the participants:

“It’s like in any moment, you are perfect. When you stop comparing yourself with other people, and thinking about how different you are to what you want to be, and stop thinking about things from the past. Without all that, in each moment, it’s just like “I am”. Michelle, aged 32, (Final session of the Mindfulness Program).
References


Appendix A

Diagnostic and Research Criteria for Bulimia Nervosa, Eating Disorder Not Otherwise Specified, and Binge Eating Disorder

Table A1

Diagnostic Criteria for Bulimia Nervosa

<table>
<thead>
<tr>
<th>Criteria</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>A.</td>
<td>Recurrent episodes of binge eating, characterised by both of the following: (1) Eating, in a discrete period of time, an amount of food that is definitely larger than most people would eat during a similar period of time and under similar circumstances; (2) A sense of lack of control over eating during the episode.</td>
</tr>
<tr>
<td>B.</td>
<td>Recurrent inappropriate compensatory behaviour to prevent weight gain, such as self-induced vomiting, misuse of laxatives, diuretics, enemas or other medications, fasting; or excessive exercise.</td>
</tr>
<tr>
<td>C.</td>
<td>The binge eating and inappropriate compensatory behaviours both occur, on average, at least twice a week for 3 months.</td>
</tr>
<tr>
<td>D.</td>
<td>Self-evaluation is unduly influenced by body shape and weight.</td>
</tr>
<tr>
<td>E.</td>
<td>The disturbance does not occur exclusively during episodes of AN. Specify type: Purging Type: regular use of self-induced vomiting or the misuse of laxatives, diuretics or enemas; Non-purging Type: regular use of other inappropriate compensatory behaviours, such as fasting or exercise.</td>
</tr>
</tbody>
</table>

Note: From the Diagnostic and Statistical Manual of Mental Disorders-IV TR (p. 594), by the American Psychiatric Association, 2000, Washington DC: American Psychiatric Association. AN = Anorexia Nervosa
Table A2

*Diagnostic Criteria for Eating Disorder Not Otherwise Specified*

<table>
<thead>
<tr>
<th>Criteria</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>For females, all of the criteria for AN are met except that the individual has regular menses.</td>
</tr>
<tr>
<td>2.</td>
<td>All of the criteria for AN are met except that, despite significant weight loss, the individual’s current weight is in the normal range.</td>
</tr>
<tr>
<td>3.</td>
<td>All of the criteria for BN are met except that the binge eating and inappropriate compensatory mechanisms occur at a frequency of less than twice a week or for a duration of less than 3 months.</td>
</tr>
<tr>
<td>4.</td>
<td>The regular use of inappropriate compensatory behaviour by an individual of normal body weight after eating small amounts of food.</td>
</tr>
<tr>
<td>5.</td>
<td>Repeatedly chewing and spitting out, but not swallowing, large amounts of food.</td>
</tr>
<tr>
<td>6.</td>
<td>Binge-Eating Disorder: recurrent episodes of binge eating in the absence of the regular use of inappropriate compensatory behaviours characteristic of BN.</td>
</tr>
</tbody>
</table>

*Note:* From the *Diagnostic and Statistical Manual of Mental Disorders-IV TR* (p. 594), by the American Psychiatric Association, 2000, Washington DC: American Psychiatric Association. AN = Anorexia Nervosa; BN = Bulimia Nervosa
Table A3

Research Criteria for Binge Eating Disorder

<table>
<thead>
<tr>
<th>Criteria</th>
<th>Description</th>
</tr>
</thead>
</table>
| A.       | Recurrent episodes of binge eating. An episode of binge eating is characterised by both of the following:  
(1) Eating, in a discrete period of time, an amount of food that is definitely larger than most people would eat during a similar period of time and under similar circumstances;  
(2) A sense of lack of control over eating during the episode |
| B.       | The binge-eating episodes are associated with three (or more) of the following:  
(1) Eating much more rapidly than normal;  
(2) Eating until feeling uncomfortably full;  
(3) Eating large amounts of food when not feeling physically hungry;  
(4) Eating alone because of being embarrassed by how much one is eating;  
(5) Feeling disgusted with oneself, depressed, or very guilty after overeating. |
| C.       | Marked distress regarding binge eating is present. |
| D.       | The binge occurs, on average, at least 2 days a week for 6 months. |
| E.       | The binge eating is not associated with the regular use of inappropriate compensatory behaviours and does not occur exclusively during the course of AN or BN. |

AN = Anorexia Nervosa; BN = Bulimia Nervosa.*
Appendix B

List of Abbreviated Measures and Full Titles of Measures from Tables 1.4, 1.5 and 1.6 in Chapter 1 ‘Binge Eating’

BAI = Beck Anxiety Inventory;
BDI = Beck Depression Inventory;
BES = Binge Eating Scale;
BULIT-R = Bulimia Test-Revised;
EAT = Eating Attitudes Test;
EDE = Eating Disorders Examination;
EDI = Eating Disorders Inventory;
EDE = Eating Disorders Examination;
EEI = Emotional Eating Inventory;
EES = Emotional Eating Scale;
FSDK = Frankfurt Self-Concept Scale;
GSI = Global Severity Index of the SCL-90-R;
IIP = Inventory of Interpersonal Problems;
KIMS = Kentucky Inventory of Mindfulness Skills;
MAAS = Mindful Attention Awareness Scale;
MAC = Mizes Anorexic Cognition Scale;
NMR = Negative Mood Regulation Scale;
PANAS = Positive and Negative Affect Schedule;
RSES = Rosenberg Self-esteem Scale;
SCL-90 = Symptom Checklist – Revised;
SEDS = Stirling Eating Disorder Scales;
SPWB = Scales of Psychological Well-being;
STAI = State Trait Anxiety Inventory;

TFEI = Three-Factor Eating Inventory;

TFEQ = Three Factor Eating Questionnaire;

UCL = Utrecht Coping List;

YSQ = Young Schema Questionnaire
Appendix C

List of Abbreviated Measures and Full Titles of Measures from Table 2.1 in Chapter 2

‘Mindfulness’

BAI = Beck Anxiety Inventory;
BDI = Beck Depression Inventory;
BSI = Brief Symptom Inventory;
CORE = Clinical Outcomes in Routine Evaluation;
DAS = Dysfunctional Attitudes Scale;
DASS = Depression, Anxiety and Stress Scales;
ECRS = Empathy construct Rating Scale;
FSS = Fear Survey Schedule;
GSI = Global Severity Index;
HRS-A = Hamilton Rating Scale – Anxiety;
HRS-D = Hamilton Rating Scale – Depression;
INSPIRIT = Index of Core Spiritual Experiences;
IPSM = Interpersonal Sensitivity Measure;
ISI = Insomnia Severity Index;
LSAS = Leibowitz Social Anxiety Scale;
LSRDS = Liebowitz Self-rated Disability Scale;
MAAS = Mindful Attention Awareness Scale;
MACAM = Measure of Awareness and Coping in Autobiographical Memory;
MQ = Mindfulness Questionnaire;
MBI = Maslach Burnout Inventory;
PSS = Perceived Stress Scale;
QoLI = Quality of Life Inventory;
RSQ = Response Style Questionnaire;
SCI = Shapiro Control Inventory;
SCL-90 = Symptom Checklist – Revised;
SCS = Self-Compassion Scale;
SIAS = Social Interaction Scale;
SPS = Social Phobia Scale;
STAI = State-Trait Anxiety Inventory;
SWLS = Satisfaction with Life Scale
Appendix D

Eating Disorder Examination

To begin with, I should like to get a general picture of your eating habits over the last four weeks.
Have your eating habits varied much day-to-day?
_____________________________________________________________________

Have weekdays differed from weekends? ___________________________

What about the previous 2 months? ___________________________

**Pattern of eating**
I would like to ask about your pattern of eating. Over the past 4 weeks which of these meals or snacks have you eaten of a regular basis?

Breakfast [ ]  
Mid-morning snack [ ]  
Lunch [ ]  
Mid-afternoon snack [ ]  
Evening Meal [ ]  
Evening snack [ ]  
Nocturnal snack [ ]  
(after they have gone to sleep)

0 = not eaten  
1 =  
2 = eaten on less than half the days  
3 =  
4 = eaten on more than half the days  
5 =  
6 = eaten every day  
8 – difficult to classify (eg, shift work)

**Restraint over eating**  
(Restraint)
Over the past 4 weeks, have you been consciously trying to restrict what you eat, whether or not you have succeeded?
Has this been to influence your shape or weight? Y N

0 = no attempt at restraint  
1 =  
2 = attempted to exercise restraint on less than half the days  
3 =  
4 = attempted to exercise restraint on more than half the days  
5 =  
6 = attempted to exercise restraint every day  

[ ]
**Avoidance of eating**  
(Restraint)  
Over the past 4 weeks have you gone for periods of 8 or more waking hours without eating anything?  
Has this been to influence your shape or weight?  
(Y N)  
(Must be self-imposed, rather than due to circumstances)  
0 = no such days  
1 =  
2 = avoidance on less than half the days  
3 =  
4 = avoidance on more than half the days  
5 =  
6 = avoidance every day  

**Empty stomach**  
(Restraint)  
Over the past 4 weeks have you wanted your stomach to be empty?  
Has this been to influence your shape or weight?  
(Y N)  
0 = no definite desire to have an empty stomach  
1 =  
2 = definite desire to have an empty stomach on less than half the days  
3 =  
4 = definite desire to have an empty stomach on more than half the days  
5 =  
6 = definite desire to have an empty stomach every day  

**Food Avoidance**  
(Restraint)  
Over the past 4 weeks, have you tried to avoid eating any foods which you like, whether or not you have succeeded?  
Has this been to influence your shape or weight?  
(Y N)  
(Avoid food altogether rather than restrict consumption)  
0 = no attempts to avoid food  
1 =  
2 = attempted to avoid food on less than half the days  
3 =  
4 = attempted to avoid food on more than half the days  
5 =  
6 = attempted to avoid food every day
**Dietary Rules**

(Restraint)

*Over the past 4 weeks have you tried to follow certain definite rules regarding your eating; for example, kilojoule-limit, preset quantities of food, or rules about what you should eat or when you should eat?

RULES PRESENT  NOT PRESENT

*Have there been occasions when you have been aware that you have broken a dietary rule that you have set for yourself?  

Y  N

How have you felt about breaking them? How would you have felt if you had broken one of your dietary rules?

DISTRESS  NO DISTRESS

What are these rules?  

________________________________________________________________________

Why have you tried to follow them?  

________________________________________________________________________

Have they been designed to influence your shape or weight?  

Y  N

Have they been rigid rules or general principles? Examples of rigid rules would be “I must not eat eggs’ or “I must not eat cake”, whereas you could have the general principle “I should try to eat healthy food”.

SPECIFIC  GENERAL

0 = Has not attempted to obey such rules
1 =
2 = Attempted to obey such rules on less than half the days
3 =
4 = Attempted to obey such rules on more than half the days
5 =
6 = Attempted to obey such rules every day

[ ]
**Preoccupation with food, eating or kilojoules**  
*(Eating Concern)*

*Over the past 4 weeks, have you spent much time between meals thinking about food, eating or kilojoules?*

*Has thinking about food, eating or kilojoules interfered with your ability to concentrate? How about concentrating on things you are interested in, for example, reading, watching tv or following a conversation?*

*Concentration = intrusive thoughts that have interfered with activities*

0 = no concentration impairment

1 = concentration impairment on less than half the days

2 = concentration impairment on more than half the days

3 = concentration impairment every day

[ ]

**Fear of Losing Control over Eating**  
*(Eating Concern)*

*Over the past 4 weeks, have you been afraid of losing control over eating?*

*Loss of control = sense that one cannot stop or will not be able to resist eating*

0 = no fear of losing control

1 = fear of losing control present on less than half the days

2 = fear of losing control present on more than half the days

3 = fear of control every day

4 = unable to answer as has already lost control

[ ]

**Bulimic & Overeating Episodes**  
*(Diagnostic Item)*

*I would like to ask you about any episodes of overeating that you may have had over the past 4 weeks. If no such time, skip to Social Eating*

Different people mean different things by overeating. I would like you to describe any times when you have felt that you have eaten too much in one go.

*What have you eaten at these times? _________________________________

_____________________________________

_________________________________________________________________

_________________________________________________________________
What were others eating at the time? _______________________________________

Interviewer rating of ‘large’:  
Agree (obj)  
Disagree (subj)  

Did you have a sense of loss of control at the time?  Y (episode)  N (overeat)  

Number of days  [   ] [   ] (2+wk)  
Number of Episodes  [   ] [   ] [   ] (777 = too many to count)  

Over Preceding 2 months:  (3)  
No of days:  Month 2 [   ] [   ] [   ]  
No of episodes:  Month 2 [   ] [   ] [   ]  

*Have there been times when you have felt that you have eaten too much, but others might not agree?  
What have you eaten at these times? _______________________________________

What were others eating at the time? _______________________________________
Social Eating (Eating Concern)

* Over the past 4 weeks have you been concerned about other people seeing you eat?

Have you avoided such occasions? Y N

Do not consider objective bulimic episodes or objective overeating episodes

0 = no concern about being seen eating by others & no avoidance of such occasions
1 =
2 = has felt slight concern at being seen but no avoidance
3 =
4 = has felt definite concern and has avoided such occasions
5 =
6 = has felt definite concern & has avoided all such occasions
9 = possibility of eating with others has not arisen [ ]

Eating in Secret (Eating Concern)

* Over the past 4 weeks have you eaten in secret?

0 = has not eaten in secret
1 =
2 = has eaten in secret on less than half the days
3 =
4 = has eaten in secret on more than half the days
5 =
6 = has eaten in secret every day
9 = possibility of eating with others has not arisen [ ]

Guilt about Eating (Eating Concern)

* Over the past 4 weeks have you felt guilty after eating?

Have you felt that you have done something wrong? Y N

Why? ____________________________________________

On what proportion of the times that you have eaten have you felt guilty?

Do not consider objective bulimic episodes, but DO consider other objective overeating episodes. Distinguish guilt from regret – guilt implies having done wrong

0 = no guilt after eating
1 =
2 = has felt guilty after eating on less than half the occasions
3 =
4 = has felt guilty after eating on more than half the occasions
5 =
6 = has felt guilty after eating on every occasion [ ]
**Self-Induced Vomiting** *(Diagnostic Item)*

* Over the past 4 weeks have you made yourself sick as a means of controlling your weight or shape?

Rate the no of days there has been 1 or more episodes (00 = no vomiting) [ ][ ]

Number of discrete episodes (000 = no vomiting; 777 = too many to count) [ ][ ][ ]

**Ask about the previous 2 months?**

Rate the no of episodes over each 2 preceding months. (999 = not asked)

Month 2 [ ][ ][ ]
Month 3 [ ][ ][ ]

**Laxative Misuse** *(Diagnostic Item)*

*Over the past 4 weeks have you taken laxatives as a means of controlling your shape or weight?* *(Main, but no necessarily sole reason)*

Record what type of laxative ___________________________________________

No of days (00 = no use, or doubt over whether for weight, etc) [ ][ ]

No of individual episodes (000 = no use; 777 = too many to count) [ ][ ][ ]

Rate the average number taken on each occasion [ ][ ][ ]

(999 = n/a; 777 = not quantifiable, e.g. bran)

**Ask about the previous 2 months?**

Rate the no of episodes over each 2 preceding months (999 = not asked)

Month 2 [ ][ ][ ]
Month 3 [ ][ ][ ]

**Diuretic Misuse** *(Diagnostic Item)*

*Over the past 4 weeks have you taken diuretics as a means of controlling your shape or weight?*

What type of diuretics taken? ___________________________________________

No of days (00 = no use, or doubt over whether for weight, etc) [ ][ ]

No of individual episodes (000 = no use; 777 = too many to count) [ ][ ][ ]

Rate the average number taken on each occasion [ ][ ][ ]

(999 = n/a; 777 = not quantifiable)

**Ask about the previous 2 months**

Rate the no of episodes over each 2 preceding months. (999 = not asked)

Month 2 [ ][ ][ ]
Month 3 [ ][ ][ ]
**Intense Exercising to Control Shape or Weight** (Diagnostic Item)

*Over the past 4 weeks have you exercised as a means of controlling your weight, altering your shape, or amount of fat, or burning off calories?*

Typically, what form of exercise have you taken?

No of days of intense exercise (00 = none) [ ][ ]

Rate the average amount of time in mins/day (999 = none) [ ][ ][ ]

**Ask about the previous 2 months**

Rate the no of episodes (99 = not asked)

Month 2 [ ][ ]
Month 3 [ ][ ]

**Abstinence from Extreme Weight-Control Behaviour** (Diagnostic Item)

**Only ask this item if at least 1 form of behaviour has been at the required severity level over previous 3 months (fasting, exercise, vomiting, laxatives, and diuretics)**

Over the past 3 months has there been a period of time when you have not……

Ask for individual items

Rate how many ‘free weeks’, not due to circumstance (n/a = 99) [ ]

(No more than 2 free weeks)

**Dissatisfaction with Weight** (Weight Concern)

* Over the past 4 weeks have you been dissatisfied with your weight?

Have you been so dissatisfied that it has made you unhappy? Y N

Only rate 4 – 6 if distressed, do not prompt with terms ‘slight’, etc

0 = no dissatisfaction
1 =
2 = slight dissatisfaction (no associated distress)
3 =
4 = moderate dissatisfaction (some associated distress)
5 =
6 = marked dissatisfaction (extreme concern & distress; weight totally unacceptable)
9 = unaware of weight [ ]
**Desire to Lose Weight**  (Weight Concern)
*Over the past 4 weeks have you wanted to lose weight?*

**Have you had a strong desire to lose weight?**  

Y  N

0 = no strong desire to lose weight  
1 =  
2 = strong desire present on less than half the days  
3 =  
4 = strong desire present on more than half the days  
5 =  
6 = strong desire present every day

**Desired Weight**  (Weight Concern)
*What weight would you like to be?*

Rate in kg (888 = not interested; 777 = no weight low enough; 666 = concern about shape, rather than specific weight)

[ ] [ ] [ ]

**Reaction to Prescribed Weighing**  (Weight Concern)
*How would you feel if you were asked to weigh yourself once each week for the next 4 weeks?*

Ask to describe in detail; whether other aspects of life would be influenced

0 = no reaction  
1 =  
2 = slight reaction  
3 =  
4 = moderate reaction  
5 =  
6 = marked reaction (pronounced; would affect other aspects of life)  
= non compliance as extremely disturbing  
9 = positive reaction
**Dissatisfaction with Shape**

(Shape Concern)

*Over the past 4 weeks have you been dissatisfied with your shape?

**Have you been so dissatisfied it has made you unhappy?**

Y  N

*Do not rate body tone, do not prompt with terms*

0 = no dissatisfaction with shape
1 =
2 = slight dissatisfaction with shape (no associated distress)
3 =
4 = moderate dissatisfaction with shape (some associated distress)
5 =
6 = marked dissatisfaction with shape (extreme distress & concern, weight totally unacceptable)

\[
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**Preoccupation with Shape or Weight**

(Shape Concern; Weight Concern)

*Over the past 4 weeks have you spent much time thinking about your shape or weight?

*Has thinking about your shape or weight interfered with your ability to concentrate? How about concentrating on things you are interested in, for example, reading, watching tv or following a conversation?**

Y  N

*Concentration = intrusive thoughts that have interfered with activities*

0 = no concentration impairment
1 =
2 = concentration impairment on less than half the days
3 =
4 = concentration impairment on more than half the days
5 =
6 = concentration impairment every day

\[
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\]

**Importance of Shape**

(Shape Concern; Diagnostic)

*Over the past 4 weeks has your shape been important in influencing how you feel about (judge, think, evaluate) yourself as a person?

*If you think about things that influence how you feel about yourself – such as (work performance, being a parent, your marriage) - & put these things in order of importance, where does your shape fit in?
If, over the past 4 weeks, your shape has changed in any way, would this have affected how you feel about yourself?  

Y  N

Is it important to you that your shape does not change?  

Y  N

0 = no importance
1 =
2 = some importance (definitely an aspect of self-evaluation)
3 =
4 = moderate importance (definitely one of the main aspects of self-evaluation)
5 =
6 = supreme importance (nothing is more important in their self-evaluation)  

Ask about the previous 2 months (99 = not asked)

Month 2 [   ]
Month 3 [   ]

Importance of Weight (Weight Concern; Diagnostic)

*Over the past 4 weeks has your weight been important in influencing how you feel about (judge, think, evaluate) yourself as a person?

*If you think about things that influence how you feel about yourself – such as (work performance, being a parent, your marriage) - & put these things in order of importance, where does your weight fit in?

If, over the past 4 weeks, your weight has changed in any way, would this have affected how you feel about yourself?  

Y  N

Is it important to you that your weight does not change?  

Y  N

0 = no importance
1 =
2 = some importance (definitely an aspect of self-evaluation)
3 =
4 = moderate importance (definitely one of the main aspects of self-evaluation)
5 =
6 = supreme importance (nothing is more important in their scheme for self-evaluation)  

Ask about the previous 2 months (99 = not asked)

Month 2 [   ]
Month 3 [   ]
Fear of Weight Gain
(Shape Concern; Diagnostic)

*Over the past 4 weeks have you been afraid that you might gain weight or become fat? (Shorten question if obviously overweight)

0 = no definite fear of fatness or weight gain
1 =
2 = definite fear present on less than half the days
3 =
4 = definite fear present on more than half the days
5 =
6 = definite fear present every day

Ask about the previous 2 months (99 = not asked)
Month 2 [ ]
Month 3 [ ]

Discomfort Seeing Body
(Shape Concern)

Over the past 4 weeks have you felt uncomfortable seeing your body, for example, in the mirror, in shop window reflections, while undressing, or while taking a bath or shower? (Should be about shape, etc, rather than acne, modesty)

0 = no discomfort about seeing body
1 =
2 = some discomfort about seeing body
3 =
4 = moderate discomfort about seeing body
5 =
6 = definite discomfort about seeing body & attempts to avoid all such occasions
Avoidance of Exposure (Shape Concern)
Over the past 4 weeks have you felt uncomfortable about others seeing your body, eg, in communal changing rooms, when swimming, or when wearing clothes that show your shape? Y N

What about your partner or friends seeing your body?
Have you avoided such situations? Y N

Why? ____________________________________________
0 = no discomfort about others body
1 =
2 = some discomfort about others seeing body
3 =
4 = moderate discomfort about others seeing body
5 =
6 = definite discomfort about others seeing body & has attempted to avoid all such occasions
9 = possibility of “exposure” has not arisen

Feelings of Fatness (Shape Concern; Diagnostic)
Omit if obviously overweight, and rate ‘7’
Over the past 4 weeks have you felt fat?

0 = has not felt fat
1 =
2 = has felt fat on less than half the days
3 =
4 = has felt fat on more than half the days
5 =
6 = has felt fat every day

Ask about the previous 2 months (9 = not asked)
Month 2 [ ]
Month 3 [ ]
**Flat Stomach** (Shape Concern; Diagnostic)

*Omit if obviously overweight, and rate ‘7’*

*Over the past 4 weeks have you had a **definite** desire to have a flat stomach?*

0 = no definite desire
1 =
2 = definite desire on less than half the days
3 =
4 = definite desire on more than half the days
5 =
6 = definite desire every day [   ]

**Weight and Height**

*If not already known from intake call*

Weight (kg) [   ][   ][   ]
Height (cm) [   ][   ][   ]

**Maintained Low Weight** (Diagnostic Item)

*For those who may be underweight*

*Over the past 3 months have you been trying to lose weight?* Y N

*If no: have you been trying to make sure that you do not gain weight?*

0 = no attempts to lose weight or avoid weight gain
1 = attempts to lose weight or avoid gain for shape/weight reasons
2 = attempts to lose weight or avoid gain for other reasons [   ]
9 = not asked

**Menstruation** (Diagnostic Item)

*Have you missed any menstrual periods over the past few months?* Y N

*How many periods have you had?* Y N

*Are you taking the pill?*

*Rate number of periods over last 3 cycles*

7 = pill, pregnant or breastfeeding [   ]

END OF SCHEDULE
Appendix E

*Structure Clinical Interview IV—AXIS I*

I’d like to ask you about unusual experiences people sometimes have.

1. Have you ever heard things that other people couldn’t hear such as noises, or the voices of other people whispering or talking? **Y** **N**

   Were you awake at the time? **Y** **N**

   **If Yes:**

   What did you hear? ___________________________________________

   Did they comment on what you were doing or thinking? ________________

   How many voices did you hear? ________________________________

   Were they talking to each other? ________________________________

2. Have you ever had visions or seen things that other people couldn’t see? **YN**

   If yes: Were you awake at the time? **Y** **N**

   ______________________________________________________________

3. Have you ever felt that someone or something outside yourself was controlling your thoughts or actions against your will? **Y** **N**

4. Has it ever seemed like people were talking about you or taking special notice of you? **Y** **N**

   **If Yes:**

   Were you convinced they were talking about you or did you think it might have been your imagination? ________________________________

5. Have you ever felt that you were especially important in some way, or that you had special powers to do things that other people couldn’t do? **Y** **N**

6. What about receiving special messages from the TV, radio, or newspaper, or from the way things were arranged around you? **Y** **N**

7. What about anyone going out of their way to give you a hard time or trying to hurt you? **Y** **N**
8. Have you ever felt that something was very wrong with you physically even though your doctor said nothing was wrong…like you had cancer or some terrible disease?  Y   N

9. Have you ever been convinced that something was very wrong with the way a part or parts of your body looked?  Y   N

10. Have you ever felt that something strange was happening to parts of your body?  Y   N

11. Do you ever have unusual religious experiences?  Y   N

12. Have you ever felt that you had committed a crime or done something terrible for which you should be punished?  Y   N

13. Have you ever felt that certain thoughts were not your own or were put into your head?  Y   N
   What about taken out of your head?  Y   N

14. Have you ever felt as if your thoughts were being broadcast out loud so that other people could actually hear what you were thinking?  Y   N

15. Have you ever believed that someone could read your mind?  Y   N
   Yes: How do you explain that? ______________________________________

16. What about strange sensations in your body or on your skin?  Y   N

17. What about smelling or tasting things that other people couldn’t smell or taste?  Y   N
Appendix F

*Structured Clinical Interview - Axis II*

1. Are you different with different people or in different situations so that you sometimes don’t know who you really are?  
   Y  N
   Are you often confused about your long term goals or career plans?  
   Y  N
   Are you often confused about what kind of friends or lovers you want?  
   Y  N
   Do you also feel confused about whether you’re straight or gay?  
   Y  N
   Do you often feel confused about what your values are?  
   Y  N

2. Do your feelings toward people change a lot so you sometimes love or greatly admire someone at one time, and then hate or feel terribly disappointed by them at another time?  
   Y  N
   If Yes: Does this seem to happen in most of your relationships?  
   Y  N

3. Do you get out-of-control if you think someone important is going to leave you?  
   Y  N
   If Yes: What kinds of things would you do? __________________________

4. Have you done things impulsively that could have gotten you into trouble?  
   Like – spending too much money….sex….drinking too much or taking drugs…reckless driving…shoplifting?  
   Y  N

5. Have you tried to hurt or kill yourself or threatened to do so?  
   Y  N
   If Yes:
   When was the last time?  
   How many times have you done this?  

   Have you ever cut or scratched yourself or things like that?  
   Y  N
   If Yes:
   When was the last time?  
   How many times have you done this?  


6. Do you often have ups and downs in your mood, periods of depression, irritability or anxiety? Y N
How long does a particular mood last before it goes away?

7. Do you often feel bored or empty inside? Y N

8. Do you often have temper outbursts or get so angry that you lose control? Y N
Do you hit people when you are angry? Y N
Appendix G

Alcohol Use Disorders Identification Test

The following questions concern your use of alcohol

1. How often do you have a drink containing alcohol?
   (0) Never [skip to Q 9 and 10]   (3) 2 to 3 times a week
   (1) Monthly or less             (4) 4 or more times a week
   (2) 2 to 4 times a month

2. How many drinks containing alcohol a day do you have on a typical day when you are drinking?
   (0) 1 or 2                     (3) 7, 8, or 9
   (1) 3 or 4                     (4) 10 or more
   (2) 5 or 6

3. How often do you have six or more drinks on one occasion?
   (0) Never                      (3) Weekly
   (1) Less than monthly          (4) Daily or almost daily
   (2) Monthly

4. How often during the last year have you found that you were not able to stop drinking once you had started?
   (0) Never                      (3) Weekly
   (1) Less than monthly          (4) Daily or almost daily
   (2) Monthly

5. How often during the last year have you failed to do what was normally expected from you because of drinking?
   (0) Never                      (3) Weekly
   (1) Less than monthly          (4) Daily or almost daily
   (2) Monthly
6. How often during the last year have you needed a first drink in the morning to get yourself going after a heavy drinking session?
   (0) Never   (3) Weekly
   (1) Less than monthly   (4) Daily or almost daily
   (2) Monthly

7. How often during the last year have you had a feeling of guilt or remorse after drinking?
   (0) Never   (3) Weekly
   (1) Less than monthly   (4) Daily or almost daily
   (2) Monthly

8. How often during the last year have you been unable to remember what happened the night before because you had been drinking?
   (0) Never   (3) Weekly
   (1) Less than monthly   (4) Daily or almost daily
   (2) Monthly

9. Have you or someone else been injured because of your drinking?
   (0) No
   (2) Yes, but not in the last year
   (4) Yes, during the last year

10. Has a relative or friend or a doctor or another health worker been concerned about your drinking or suggested you cut down?
    (0) No
    (2) Yes, but not in the last year
    (4) Yes, during the last year
Appendix H

Drug Abuse Screening Test

The following questions concern information about your potential involvement with drugs not including alcoholic beverages during the last 4 weeks. ‘Drug abuse’ refers to prescription or non-medical drugs including cannabis, valium, cocaine, speed, LSD, heroin, morphine etc.

1. Have you used drugs other than those required for medical reasons? _______
2. Have you abused prescription drugs? _______
3. Do you abuse more than one drug at a time? _______
4. Can you always get through the week without using drugs? _______
5. Are you always able to stop using drugs when you want to? _______
6. Have you had ‘blackouts’ or ‘flashbacks’ as a result of drug use? _______
7. Do you ever feel bad or guilty about your drug use? _______
8. Does your partner (or parents) ever complain about your involvement with drugs? _______
9. Has drug abuse created problems between you and your partner or parents? _______
10. Have you lost friends because of your drug use? _______
11. Have you neglected your family because of your drug use? _______
12. Have you been in trouble at work because of your drug use? _______
13. Have you lost a job because of drug abuse? _______
14. Have you gotten into fights when under the influence of drugs? _______
15. Have you engaged in illegal activities in order to obtain drugs? _______
16. Have you been arrested for possession of illegal drugs? _______
17. Have you ever experienced withdrawal symptoms (felt sick) when you stopped taking drugs? _______
18. Have you had medical problems as a result of your drug use (e.g. memory loss, hepatitis, convulsion, bleeding, etc)? _______
19. Have you gone to anyone for help for a drug problem? _______
20. Have you been involved in a treatment program specifically related to drug use? _______
Appendix I

Eating Disorder Inventory-3

Please read each statement and place a letter in the blank line next to each statement using the following scale.

<table>
<thead>
<tr>
<th></th>
<th>A</th>
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<th>S</th>
<th>R</th>
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</thead>
<tbody>
<tr>
<td>1</td>
<td>I eat sweets and carbohydrates without feeling nervous.</td>
<td></td>
<td></td>
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<tr>
<td>2</td>
<td>I think that my stomach is too big.</td>
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<tr>
<td>3</td>
<td>I wish I could return to the security of childhood.</td>
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<tr>
<td>4</td>
<td>I eat when I am upset.</td>
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<tr>
<td>5</td>
<td>I stuff myself with food.</td>
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<tr>
<td>6</td>
<td>I wish that I could be younger.</td>
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<tr>
<td>7</td>
<td>I think about dieting.</td>
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<td>8</td>
<td>I get frightened when my feelings are too strong.</td>
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<tr>
<td>9</td>
<td>I think that my thighs are too large.</td>
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<tr>
<td>10</td>
<td>I feel ineffective as a person.</td>
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<tr>
<td>11</td>
<td>I feel extremely guilty after overeating.</td>
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<tr>
<td>12</td>
<td>I think that my stomach is just the right size.</td>
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<td>13</td>
<td>Only outstanding performance is good enough in my family.</td>
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<tr>
<td>14</td>
<td>The happiest time in life is when you are a child.</td>
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<tr>
<td>15</td>
<td>I am open about my feelings.</td>
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<tr>
<td>16</td>
<td>I am terrified of gaining weight.</td>
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<tr>
<td>17</td>
<td>I trust others.</td>
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<tr>
<td>18</td>
<td>I feel alone in the world.</td>
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<td>19</td>
<td>I feel satisfied with the shape of my body.</td>
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<td>20</td>
<td>I feel generally in control of things in my life.</td>
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<tr>
<td>21</td>
<td>I get confused about what emotion I am feeling.</td>
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<tr>
<td>22</td>
<td>I would rather be an adult than a child.</td>
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<tr>
<td>23</td>
<td>I can communicate with others easily.</td>
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<tr>
<td>24</td>
<td>I wish I were someone else.</td>
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<tr>
<td>25</td>
<td>I exaggerate or magnify the importance of weight.</td>
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<tr>
<td>26</td>
<td>I can clearly identify what emotion I am feeling.</td>
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<tr>
<td>27</td>
<td>I feel inadequate.</td>
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<tr>
<td>28</td>
<td>I have gone on eating binges where I felt that I could not stop.</td>
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<td></td>
<td>Always</td>
<td>Usually</td>
<td>Often</td>
<td>Sometimes</td>
<td>Rarely</td>
<td>Never</td>
</tr>
</tbody>
</table>

29. As a child, I tried very hard to avoid disappointing my parents and teachers. ________

30. I have close relationships. ________

31. I like the shape of my buttocks. ________

32. I am preoccupied with the desire to be thinner. ________

33. I don’t know what’s going on inside me. ________

34. I have trouble expressing my emotions to others. ________

35. The demands of adulthood are too great. ________

36. I hate being less than best at things. ________

37. I feel secure about myself. ________

38. I think about bingeing (overeating). ________

39. I feel happy that I am not a child anymore. ________

40. I get confused as to whether or not I am hungry. ________

41. I have a low opinion of myself. ________

42. I feel that I can achieve my standards. ________

43. My parents have expected excellence of me. ________

44. I worry that my feelings will get out of control. ________

45. I think my hips are too big. ________

46. I eat moderately in front of others and stuff myself when they’re gone. ________

47. I feel bloated after eating a normal meal. ________

48. I feel that people are happiest when they are children. ________

49. If I gain a pound, I worry that I will keep gaining. ________

50. I feel that I am a worthwhile person. ________

51. When I am upset, I don’t know if I am sad, frightened, or angry. ________

52. I feel that I must do things perfectly or not do them at all. ________

53. I have the thought of trying to vomit in order to lose weight. ________

54. I need to keep people at a certain distance (I feel uncomfortable if someone tries to get too close). ________

55. I think that my thighs are just the right size. ________

56. I feel empty inside (emotionally). ________

57. I can talk about personal thoughts or feelings. ________
<table>
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<th>S</th>
<th>R</th>
<th>N</th>
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</thead>
<tbody>
<tr>
<td>58.</td>
<td>The best years of your life are when you become an adult.</td>
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<tr>
<td>59.</td>
<td>I think my buttocks are too large.</td>
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<tr>
<td>60.</td>
<td>I have feelings I can’t quite identify.</td>
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<tr>
<td>61.</td>
<td>I eat or drink in secrecy.</td>
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<tr>
<td>62.</td>
<td>I think that my hips are just the right size.</td>
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<tr>
<td>63.</td>
<td>I have extremely high goals.</td>
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<tr>
<td>64.</td>
<td>When I am upset, I worry that I will start eating.</td>
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<tr>
<td>65.</td>
<td>People I really like end up disappointing me.</td>
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<tr>
<td>66.</td>
<td>I am ashamed of my human weaknesses.</td>
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<tr>
<td>67.</td>
<td>Other people would say that I am emotionally unstable.</td>
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<tr>
<td>68.</td>
<td>I would like to be in total control of my bodily urges.</td>
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<td>69.</td>
<td>I feel relaxed in most group situations.</td>
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<tr>
<td>70.</td>
<td>I say things impulsively that I regret having said.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>71.</td>
<td>I go out of my way to experience pleasure.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>72.</td>
<td>I have to be careful of my tendency to abuse drugs.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>73.</td>
<td>I am outgoing with most people.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>74.</td>
<td>I feel trapped in relationships.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>75.</td>
<td>Self-denial makes me feel stronger spiritually.</td>
<td></td>
<td></td>
<td></td>
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<td></td>
</tr>
<tr>
<td>76.</td>
<td>People understand my real problems.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>77.</td>
<td>I can’t get strange thoughts out of my head.</td>
<td></td>
<td></td>
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</tr>
<tr>
<td>78.</td>
<td>Eating for pleasure is a sign of moral weakness.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>79.</td>
<td>I am prone to outbursts of anger or rage.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>80.</td>
<td>I feel that people give me the credit I deserve.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>81.</td>
<td>I have to be careful of my tendency to abuse alcohol.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>82.</td>
<td>I believe that relaxing is simply a waste of time.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>83.</td>
<td>Others would say that I get irritated easily.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>84.</td>
<td>I feel like I am losing out everywhere.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>85.</td>
<td>I experience marked mood shifts.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>86.</td>
<td>I am embarrassed by my bodily urges.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>87.</td>
<td>I would rather spend time by myself than with others.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>88.</td>
<td>Suffering makes you a better person.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
89. I know that people love me.  
90. I feel like I must hurt myself or others.  
91. I feel that I really know who I am.
Appendix J

Measure of Bingeing and Compensatory Behaviour

Over the last week, please indicate by circling ‘yes’ or ‘no’ whether you have engaged in any of the following activities:

**Binge** = an amount of food that most people would consider to be ‘large’ in one go.

**Loss of control** = not being able to control, or stop the binge.

Please indicate whether you engaged in any activities to compensate for the binge.

<table>
<thead>
<tr>
<th>Thurs</th>
<th>Fri</th>
<th>Sat</th>
<th>Sun</th>
<th>Mon</th>
<th>Tues</th>
<th>Wed</th>
</tr>
</thead>
<tbody>
<tr>
<td>Binge:</td>
<td>Yes</td>
<td>No</td>
<td>Binge:</td>
<td>Yes</td>
<td>No</td>
<td>Binge:</td>
</tr>
<tr>
<td>How many times</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Loss of control:</td>
<td>Yes</td>
<td>No</td>
<td>Loss of control:</td>
<td>Yes</td>
<td>No</td>
<td>Loss of control:</td>
</tr>
<tr>
<td>Vomit:</td>
<td>Yes</td>
<td>No</td>
<td>Vomit:</td>
<td>Yes</td>
<td>No</td>
<td>Vomit:</td>
</tr>
<tr>
<td>Laxatives:</td>
<td>Yes</td>
<td>No</td>
<td>Laxatives:</td>
<td>Yes</td>
<td>No</td>
<td>Laxatives:</td>
</tr>
<tr>
<td>Exercise (+1 hr):</td>
<td>Yes</td>
<td>No</td>
<td>Exercise (+1 hr):</td>
<td>Yes</td>
<td>No</td>
<td>Exercise (+1 hr):</td>
</tr>
<tr>
<td>Fasting:</td>
<td>Yes</td>
<td>No</td>
<td>Fasting:</td>
<td>Yes</td>
<td>No</td>
<td>Fasting:</td>
</tr>
</tbody>
</table>
Appendix K

*Five Facet Mindfulness Questionnaire*

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.

<table>
<thead>
<tr>
<th></th>
<th>Never or Very Rarely</th>
<th>Sometimes or Occasionally</th>
<th>About Half the Time</th>
<th>Often or Most of the Time</th>
<th>Very Often or All of the Time</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>When I’m walking, I deliberately notice the sensations of my body moving.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>I’m good at finding words to describe my feelings.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>I criticize myself for having irrational or inappropriate emotions.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4</td>
<td>I perceive my feelings and emotions without having to react to them.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>5</td>
<td>When I do things, my mind wanders off and I’m easily distracted.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>6</td>
<td>When I take a shower or bath, I stay alert to the sensations of water on my body.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>7</td>
<td>I can easily put my beliefs, opinions, and expectations into words.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>8</td>
<td>I don’t pay attention to what I’m doing because I’m daydreaming, worrying, or otherwise distracted.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>9</td>
<td>I watch my feelings without getting lost in them.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>10</td>
<td>I tell myself I shouldn’t be feeling the way I’m feeling.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>11</td>
<td>I notice how foods and drinks affect my thoughts, bodily sensations, and emotions.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>12</td>
<td>It’s hard for me to find the words to describe what I’m thinking.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>13</td>
<td>I am easily distracted.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>14</td>
<td>I believe some of my thoughts are abnormal or bad and I shouldn’t think that way.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>15</td>
<td>I pay attention to sensations, such as the wind in my hair or sun on my face.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>16</td>
<td>I have trouble thinking of the right words to express how I feel about things.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>17</td>
<td>I make judgments about whether my thoughts are good or bad.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>18</td>
<td>I find it difficult to stay focused on what’s happening in the present.</td>
<td></td>
<td></td>
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<td></td>
</tr>
</tbody>
</table>
19. When I have distressing thoughts or images, I “step back” and am aware of the thought or image without getting taken over by it.

20. I pay attention to sounds, such as clocks ticking, birds chirping, or cars passing.

21. In difficult situations, I can pause without immediately reacting.

22. When I have a sensation in my body, it’s difficult for me to describe it because I can’t find the right words.

23. It seems I am “running on automatic” without much awareness of what I’m doing.

24. When I have distressing thoughts or images, I feel calm soon after.

25. I tell myself that I shouldn’t be thinking the way I’m thinking.

26. I notice the smells and aromas of things.

27. Even when I’m feeling terribly upset, I can find a way to put it into words.

28. I rush through activities without being really attentive to them.

29. When I have distressing thoughts or images I am able just to notice them without reacting.

30. I think some of my emotions are bad or inappropriate and I shouldn’t feel them.

31. I notice visual elements in art or nature, such as colours, shapes, textures, or patterns of light and shadow.

32. My natural tendency is to put my experiences into words.

33. When I have distressing thoughts or images, I just notice them and let them go.

34. I do jobs or tasks automatically without being aware of what I’m doing.

35. When I have distressing thoughts or images, I judge myself as good or bad, depending what the thought/image is about.

36. I pay attention to how my emotions affect my thoughts and behaviour.
37. I can usually describe how I feel at the moment in considerable detail. _______
38. I find myself doing things without paying attention. _______
39. I disapprove of myself when I have irrational ideas. _______
Appendix L

Outcome Questionnaire 45.2

Looking back over the last week, including today, help us understand how you have been feeling. Read each item carefully and indicate which category best describes your current situation. For this questionnaire, work is defined as employment, school, housework, volunteer work, and so forth.

<table>
<thead>
<tr>
<th></th>
<th>Never</th>
<th>Rarely</th>
<th>Sometimes</th>
<th>Frequently</th>
<th>Almost Always</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>I get along well with others.</td>
<td>________</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>I tire quickly.</td>
<td>________</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>I feel no interest in things.</td>
<td>________</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4</td>
<td>I feel stressed at work/school.</td>
<td>________</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>5</td>
<td>I blame myself for things.</td>
<td>________</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>6</td>
<td>I feel irritated.</td>
<td>________</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>7</td>
<td>I feel unhappy in my marriage/significant relation</td>
<td>________</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>8</td>
<td>I have thoughts of ending my life.</td>
<td>________</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>9</td>
<td>I feel weak.</td>
<td>________</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>10</td>
<td>I feel fearful.</td>
<td>________</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>11</td>
<td>After heavy drinking, I need a drink the next morning to get going (if you do not drink, mark “never”).</td>
<td>________</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>12</td>
<td>I find my work/school satisfying.</td>
<td>________</td>
<td></td>
<td></td>
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</tr>
<tr>
<td>13</td>
<td>I am a happy person.</td>
<td>________</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>14</td>
<td>I work/study too much.</td>
<td>________</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>15</td>
<td>I feel worthless.</td>
<td>________</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>16</td>
<td>I am concerned about family troubles.</td>
<td>________</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>17</td>
<td>I have an unfulfilling sex life.</td>
<td>________</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>18</td>
<td>I feel lonely.</td>
<td>________</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>19</td>
<td>I have frequent arguments.</td>
<td>________</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>20</td>
<td>I feel loved and wanted.</td>
<td>________</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>21</td>
<td>I enjoy my spare time.</td>
<td>________</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>22</td>
<td>I have difficulty concentrating.</td>
<td>________</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>23</td>
<td>I feel hopeless about the future.</td>
<td>________</td>
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<td></td>
</tr>
<tr>
<td>0</td>
<td>Never</td>
<td>1</td>
<td>Rarely</td>
<td>2</td>
<td>Sometimes</td>
</tr>
</tbody>
</table>

24. I like myself.  
25. Disturbing thoughts come into my mind that I cannot get rid of.  
26. I feel annoyed by people who criticize my drinking (or drug use).  
(If not applicable, mark “never”)  
27. I have an upset stomach.  
28. I am not working/studying as well as I used to.  
29. My heart pounds too much.  
30. I have trouble getting along with friends and close acquaintances.  
31. I am satisfied with my life.  
32. I have trouble at work/school because of drinking or drug use.  
33. I feel that something bad is going to happen.  
34. I have sore muscles.  
35. I feel afraid of open spaces, of driving, of being in buses, subways and so forth.  
36. I feel nervous.  
37. I feel my love relationships are full and complete.  
38. I feel that I am not doing well at work/school.  
39. I have too many disagreements at work/school.  
40. I feel something is wrong in my mind.  
41. I have trouble falling asleep or staying asleep.  
42. I feel blue.  
43. I am satisfied with my relationships with others.  
44. I feel angry enough at work/school to do something I might regret.  
45. I have headaches.
Appendix M

*Rosenberg Self-Esteem Scale*

Here is a list of statements dealing with your general feelings about yourself. Please choose a number which best reflects these feelings.

<table>
<thead>
<tr>
<th></th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Strongly Agree</td>
<td>Agree</td>
<td>Disagree</td>
<td>Strongly Disagree</td>
</tr>
</tbody>
</table>

1. On the whole, I am satisfied with myself.  
2. At times I think I am no good at all.  
3. I feel that I have a number of good qualities.  
4. I am able to do things as well as most other people.  
5. I feel I do not have much to be proud of.  
6. I certainly feel useless at times.  
7. I feel that I’m a person of worth, at least on an equal plane with others.  
8. I wish I could have more respect for myself.  
9. All in all, I am inclined to feel that I am a failure.  
10. I take a positive attitude toward myself.
Appendix N

The Depression Anxiety and Stress Scale – Short Form

Please read each statement and enter the number which indicates how much the statement applied to you over the past week. There are no right or wrong answers. Do not spend too much time on any statement.

<table>
<thead>
<tr>
<th></th>
<th>Did not apply to me</th>
<th>Applied to me some degree</th>
<th>Applied to me a considerable deal, or a good part of the time</th>
<th>Applied to me very much or most of the time</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>I found it hard to wind down.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>I was aware of dryness of my mouth.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>I couldn't seem to experience any positive feeling at all.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4</td>
<td>I experienced breathing difficulty (e.g. excessively rapid breathing, breathlessness in the absence of physical exertion).</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>5</td>
<td>I found it difficult to work up the initiative to do things.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>6</td>
<td>I tended to over-react to situations.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>7</td>
<td>I experienced trembling (e.g. in the hands).</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>8</td>
<td>I felt that I was using a lot of nervous energy.</td>
<td></td>
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</tr>
<tr>
<td>9</td>
<td>I was worried about situations in which I might panic and make a fool of myself.</td>
<td></td>
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<td></td>
</tr>
<tr>
<td>10</td>
<td>I felt that I had nothing to look forward to.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>11</td>
<td>I found myself getting agitated.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>12</td>
<td>I found it difficult to relax.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>13</td>
<td>I felt down-hearted and blue.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>14</td>
<td>I was intolerant of anything that kept me from getting on with what I was doing.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>15</td>
<td>I felt I was close to panic.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>16</td>
<td>I was unable to become enthusiastic about anything.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>17</td>
<td>I felt I wasn't worth much as a person.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>18</td>
<td>I felt that I was rather touchy.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>19</td>
<td>I was aware of the action of my heart in the absence of physical exertion (e.g. sense of heart rate increase, heart missing a beat).</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
20. I felt scared without any good reason.

21. I felt that life was meaningless.
Appendix O

Group Climate Questionnaire

Read each statement carefully and try to think of the group as a whole. Use the Rating Scale as a guide; choosing the number which best describes the group during today’s session.

<table>
<thead>
<tr>
<th></th>
<th>0</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Not at all</td>
<td>A little bit</td>
<td>Somewhat</td>
<td>Moderately</td>
<td>Quite a bit</td>
<td>A great deal</td>
<td>Extremely</td>
</tr>
</tbody>
</table>

1. The members liked and cared about each other. __________
2. The members tried to understand why they do the things they do, tried to reason it out. __________
3. The members avoided looking at important issues going on between themselves. __________
4. The members felt what was happening was important and there was a sense of participation. __________
5. The members depended on the group leader(s) for direction. __________
6. There was friction and anger between the members. __________
7. The members were distant and withdrawn from each other. __________
8. The members challenged and confronted each other in their efforts to sort things out. __________
9. The members appeared to do things the way they thought would be acceptable to the group. __________
10. The members distrusted and rejected each other. __________
11. The members revealed sensitive and personal information. __________
12. The members appeared tense and anxious. __________
Appendix P

*Mindfulness Practice Record Form*

<table>
<thead>
<tr>
<th>Day</th>
<th>Type of Practice: Formal/Informal</th>
<th>Minutes</th>
<th>Comments</th>
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</table>
Follow-up Practice Questionnaire

It has been approximately one month since the end of the program. Please indicate how often you have been practicing mindfulness since then:

**1. Formal practice:**
   How many days per week have you been practicing formal mindfulness meditation?
   (a) Every day    (e) 3 days/week  
   (b) 6 days/week  (f) 2 days/week  
   (c) 5 days/week  (g) Once a week  
   (d) 4 days/week  (h) not at all

On average, how much time do you spend engaging in formal practice?

__________________________________________________________

**2. Informal Practice:**
   How many days per week have you been practicing informal mindfulness meditation?
   (a) Every day    (e) 3 days/week  
   (b) 6 days/week  (f) 2 days/week  
   (c) 5 days/week  (g) Once a week  
   (d) 4 days/week  (h) not at all

On average, how much time would you spend practicing informal mindfulness?

__________________________________________________________
Appendix R

Demographic Information

To assist with the research aspect of the program, we first need some information about the different people who take part. Please answer all of the following questions. All information is confidential.

1. What is your age? __________ Years

2. Which of the following best describes your marital status (please tick)?
   - Single (never married) □ 1
   - Married □ 2
   - Defacto □
   - Partnered □ 4
   - Divorced □ 5
   - Widowed □ 6

3. Which of the following best describes your employment status (please tick)?
   - Employed full-time (30+ hrs/week) □ 1
   - Employed part-time/casually □ 2
   - Home duties □ 3
   - Unemployed □ 4
   - Disability pension □ 5
   - Student □ 6
   - Retired □ 7
   - Other (please specify ___________) □ 8

4. Which of the following best describes your level of completed education? (please tick)
   - Primary □ 1
   - Secondary □ 2
   - TAFE/Apprenticeship □ 3
   - Tertiary □ 4

5. Have you had previous meditation experience (please tick)?
   - No □ 1 (please proceed to question 9)
   - Yes □ 2 (please continue to question 6)

6. How long have you been practicing meditation (please tick)?
   - Less than 1 year □ 1
   - 1 – 2 years □ 2
   - 2- 5 years □ 3
   - More than 5 years □ 4
   - Other (please specify) □ 5
7. Which of the following would best describe how frequently you meditate?  
(please tick)  
- Daily □ 1  
- Few times per week □ 2  
- Once per week □ 3  
- Once per month □ 4  
- Other (please specify) □ 5

8. Which of the following would best describe the average duration of a typical meditation session?  
- 5 - 10 mins □ 1  
- 10 – 20 mins □ 2  
- 20 – 30 mins □ 3  
- More than 30 mins □ 4  
- Other (please specify) □ 5

9. Have you ever received psychological treatment (please tick)?  
- No □ 1 (please proceed to the next page)  
- Yes □ 2 (please continue to question 10)

10. When was your most recent psychological treatment (please tick)?  
- Currently □ 1  
- Less than 1 year □ 2  
- 1 – 2 years □ 3  
- 2 – 5 years □ 4  
- More than 5 years □ 5  
- Other (please specify) □ 6

11. What is the longest period of time you have spent in therapy (e.g. 6 months)?  
_______

12. Have you ever been given a mental health diagnosis?  
- No □ 1 (please proceed to question 15)  
- Yes □ 2 (please continue to question 13)

13. What was your diagnosis? _______________________

14. Do you take medication for your diagnosis?  
- No □ 1  
- Yes (please specify) □ 2 ________________________
INNOVATIVE TREATMENT PROGRAM FOR BULIMIA AND BINGE EATING

- Mindfulness is rapidly gaining recognition in the field of psychology. Research has shown that it is effective for a range of issues, including anxiety, stress management, depression and chronic pain.

- Recently, mindfulness-based treatments such as Dialectical Behaviour Therapy and Mindfulness-Based Cognitive Therapy have been found to be effective in managing binge eating.

- Griffith University is currently conducting research into the effectiveness of an 8-session mindfulness group treatment for binge eating. The treatment will be conducted at the Psychology Clinic, Mt. Gravatt campus.

- The program is being offered free of charge. Participants will also receive printed resources and CDs.

- To be eligible for the program, participants will need to be female, over the age of 18, and not be experiencing psychosis, imminent risk of suicide, substance abuse at harmful levels, or currently meet criteria for anorexia. Participants currently receiving individual therapy will not be excluded.

- The next treatment groups will commence in late January, 2007.

- Please find attached a copy of the print ad, which can be distributed to clients.

- For further details and information on how to refer eligible participants, please contact the researcher by phone (07) 3735 3324, or by e-mail:

  Angela Morgan  a.morgan@griffith.edu.au
Do you secretly **binge eat** then go to extreme lengths to **compensate**? Are you intensely **dissatisfied** with your body? Would you like to manage your life better?

If "yes", a research team at Griffith University is currently offering a group **Mindfulness Program** for people with similar concerns. There is **no charge** for the program. It will involve: 1hr individual interview; 2hr sessions per week for 8 weeks; completion of several questionnaires.

Suitable female participants will over 18 yrs, will not have anorexia nervosa, and will not be regularly using alcohol or recreational drugs at harmful levels.

Groups will be at Griffith University’s Mt. Gravatt campus. If you are interested in participating in this program, please call **(07) 3735 3324** or email:

Angela Morgan    a.morgan@griffith.edu.au
Appendix T

Telephone Screening Procedure

Hello ______________. This is ______ from the Griffith University Mindfulness Program. You have shown some interest in our program/left your contact details for us to get back to you. This is just a brief phone call – it should only take about 10 minutes. Is this a good time for you or can we arrange a more convenient time?

First, I’d just like to ask a few questions about you, and then if you have any questions for me, I’d be happy to answer them.

Some of these questions might seem a bit personal in terms of specific eating habits, but we need to know this information so we can make sure that this program is going to be of value to you. First of all are you over 18?  

Y  N

Do you binge eat?  

Y  N

How much would you typically eat during a binge?

____________________________________________________________________

____________________________________________________________________

How often on average do you do this?  

- 2 wk  + 2 wk

How long has that been happening for you?  

____________________________________________________________________

Some people do things to make up for the binge – is this something you would do?  

Y  N

(a) purge  (b) exercise excessively  (c) laxatives  
(d) restrict eating  (e) enema  (f) medication

How often on average do you do this?  

- 2 wk  + 2 wk

How long has that been happening for you?  

____________________________________________________________________

How do you currently feel about your body?  

____________________________________________________________________

Have you ever had, or currently have, anorexia? Current Y  N  Previous Y  N

How tall are you? ____________  How much do you weigh? ________________

BMI  +18  -18

If -18:
Do you currently weigh less than other people think you should weigh?  Y  N
If Yes: Do you still feel too fat, or that a part of your body is too fat?  Y  N
    Have you stopped menstruating?  Y  N

NOT ACCEPTED:
Unfortunately, from what you have told me, this particular group doesn’t sound like it
would be very helpful for you, because………….
(a) BMI: Your body mass index is below that range that we are accepting into the groups
at this stage.
(b) Binge versus overeating: While it sounds like you are concerned with how much you
are eating, this program is intended for people who are actually consuming considerably
more food.
I can give you some details of other organisations you could contact, and I’d like to keep
your contact details in case there are additional programs in the future. Is that ok with you?
RBH Eating Disorders Unit: 3636 5241; Overeaters Anonymous: 3229 6977
Thankyou for your time.

ACCEPTED:
It sounds like this program could be of benefit to you. It will run over 8 weeks on
…………….evenings from 6.30 – 8.30pm. There will be other women in the group with the
same sorts of concerns as you. This is an innovative program that is based on
Mindfulness, which has been used to help improve the quality of people’s lives. At its
most basic, it is about bringing acceptance and awareness to the present moment but we
will explain this in much more depth. Does this sound ok to you? Do you have any
questions?
The first step is you will meet me for an interview that will take about an hour. You will
fill out some questionnaires, we can answer your questions, and we can discuss some of
the things that are happening for you at the moment in more detail.
We can offer this program at no charge to you because it’s a research project.
There will be 2 programs running this year, one starting in ………., and the other in
……….. At the end of the interview you will draw an envelope out of a box that will say
which program you attend. If this is the ……… [Waitlist] group, we’ll call you during this time though to see how you’re going.

[Arrange appointment time; Confirm time and date.]
I’d like to send out some information on the program and directions how to get here. What’s the best address to send it to?

_______________________________________________________________

Thankyou for your time - I look forward to meeting you.
Appendix U

Semi-Structured Intake Interview Procedure

“The purpose of today’s interview is to determine whether this program will be helpful for you. As we said on the phone, we are able to offer this program at no cost because it is a research project, but what this also means is that we have to abide by certain guidelines and can’t necessarily include everyone who is interested. If this is the case, for you, we will provide with referrals to other services”.

“I will ask you a series of questions that I would like to you to answer as truthfully as possible, with the understanding that this is confidential. Not all of the questions will necessarily apply to you, but we need to ask them all. Although the focus of many of these questions is on eating habits, weight and body image issues, the program itself is gentler, and has a much broader focus.

Let me know if you would like to take a break at any time, or no longer wish to proceed with the interview”.

“Do you have any questions for me at this stage?”

1. Administer EDE
   - If criteria are not met: “The issues you describe do not fully meet our criteria, and in this case, this program would not be the most suitable treatment for you. We appreciate your time” (provide referrals and debrief/provide explanations as necessary).

2. Administer SCID-IV
   - If psychosis is present, conduct risk assessment
   - If risk is present: “There are some things happening for you right now that may require further assessment and treatment (Refer to hospital following Clinic protocol if necessary).
3. Administer SCID-II
   - If suicide risk is present: “Right now I am more concerned about your safety and I think it’s important that we focus on this” (Follow Clinic protocol for assessment if necessary).

4. Administer AUDIT
   - If 20+: Determine whether levels of alcohol use would interfere with their participation and capacity to benefit from the program (provide referrals and debrief/provide explanations as necessary).

5. Administer DAST
   - If 6+: Determine whether levels of substance use would interfere with their participation and capacity to benefit from the program (provide referrals and debrief/provide explanations as necessary).

**If Uncertain about Suitability:**
“Thank you for answering these questions. There are a couple of things about the guidelines for inclusion that I need to clarify with my supervisor, to ensure that this is the most appropriate program for you at this time. I’m sorry I can’t give you a definite answer now; can I get back to you within the week to confirm?” (debbrief/provide explanations as necessary).

6. If Accepted:
   “On the basis of your responses, it is likely that this program will be suitable for you”.
   - Go through information sheet – ensure this is read and understood.
   - Go through consent form, obtain participant’s signature.
7. Randomisation:
“As we mentioned in the phone call, there are two programs that will be running. If you would like to select an envelope out of this box, this will determine whether you begin on …… (Treatment Commencement Date) or …….(Waitlist Commencement Date)”
- Confirm dates and provide flyer with session dates and times

8. Administer Assessment Package
“The next stage is for you to complete some questionnaires. They will take approximately 40 minutes. If you would like, it may be more convenient for you to fill out some questionnaires before you leave today”.

- Waitlist Group: “Please complete these, and return them in this reply paid envelope by [provide date]”.
- Treatment Group: “Please fill these out prior to group, and bring with them with you to the first session.

Thankyou for coming in today. If you have any further questions, please do not hesitate to call me, or another member of the research team. I look forward to seeing you [mention commencement date]”.
Appendix V

Information Sheet

[Griffith University Letterhead]

An Evaluation of a Mindfulness-based Group Program for Binge Eating

INFORMATION SHEET

Research Supervisor
Dr. Analise O’Donovan
School of Psychology
Griffith University
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(07) 3735 3373

Researchers
Angela Morgan
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Michelle Hanisch
School of Psychology
Griffith University
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(07) 3735 3324

The purpose of this research
The practice of mindfulness has been described as a process of bringing non-judgemental awareness and acceptance to moment-by-moment experience. A growing body of research suggests that mindfulness practice may be helpful in managing the symptoms of a wide range of problems, including depression, stress, anxiety, binge eating, and chronic pain and illness. Mindfulness practice can also enhance a sense of general well-being and quality of life. The aim of this research is to evaluate the effectiveness of a mindfulness-based group program to manage symptoms and difficulties associated with Binge Eating.

Your role in the research
You are invited to participate in the Mindfulness-based Group Program with a small group of people experiencing symptoms associated with Binge Eating. You will be allocated to either join the program immediately or wait for an eight-week period before starting. Prior to commencing the program, you will be required to complete a number of questionnaires.
During the program, you will be presented with information about the practice of mindfulness. You will also be provided with the opportunity to participate in a variety of exercises designed to give you hands-on experience with the practice. Qualified and experienced intern psychologists will facilitate the program. All facilitators have a personal experience with mindfulness, and will receive supervision by an experienced clinical psychologist throughout the course of the program.

You will be asked to respond to a number of pencil and paper questionnaires before, during and after the program commences. These questionnaires should take approximately 40 minutes of your time, and can be completed before the commencement of the session. You will also be invited to provide feedback on your personal experience of participation in the program. Throughout the program, you will be asked to keep a record of the duration of homework mindfulness practice. The practice will take approximately 20 minutes per day. The recording of practice should take no more than approximately 5 minutes per day, and will be collected each week. Assistance will be available during completion of the questionnaires if required. Follow-up assessment will occur one month after completion of the program. This information will be obtained either during a follow-up session or by post.

Participation in the study is voluntary and you can decide to withdraw from the study at any time without explanation or penalty.

**The expected benefits of this research**

It is expected that this research will have benefits for you as an individual and at a wider community level. Current research indicates that mindfulness can significantly enhance a person’s ability to cope with stress, anxiety, depression, and binge-eating.

Mindfulness-related research is rapidly increasing in the psychological research community. Participating in this research study will add to the existing knowledge about mindfulness and encourage more discussion about the utility of mindfulness in the treatment of a wide range of personal concerns.

**Potential risks to you**

In the short term, mindfulness can sometimes increase attention to, and awareness of, feelings of emotional or physical discomfort. These experiences are normal, and do not necessarily occur for all people. To receive maximum benefit from this program requires a commitment to persist with the group through these feelings of discomfort. Facilitators are trained to ensure your safe and therapeutic facilitation of the group, and will remain vigilant to promote your comfort and safety at all times. A referral to an alternative treatment or intervention service will be provided in the event that this group does not adequately support your needs.

**Confidentiality**

On agreeing to participate in this research, you will be allocated a code to identify your details. The code will then be used to identify the data collected from your responses to the completed questionnaires. The data and identifying code will be stored separately so
that your confidentiality will be preserved. The information you provide will not be reviewed by anyone other than the Researchers or Research Supervisor.

If you wish, you will be provided with a summary of your results following participation in the program, and of the overall results on completion of the study.

The conduct of this research involves the collection, access and/or use of your identified personal information. The information collected is confidential and will not be disclosed to third parties without your consent, except to meet government, legal or other regulatory authority requirements. A de-identified copy of this data may be used for other research purposes. However, your anonymity at all times will be safeguarded. For further information consult the University’s Privacy Plan at [www.griffith.edu.au/ua/aa/vc/pp](http://www.griffith.edu.au/ua/aa/vc/pp) or telephone (07) 3735 5585.

**Further information**

This project is being conducted as a requirement of the Doctor of Philosophy (Clinical Psychology). Please contact the Researcher or Research Supervisor using the contact details above if you require any additional information.

Furthermore, Griffith University conducts research in accordance with the *National Statement on Ethical Conduct in Research Involving Humans*. If you have any concerns or complaints about the ethical conduct of the project, please contact the Manager, Research Ethics on (07) 3735 5585 or [research-ethics@griffith.edu.au](mailto:research-ethics@griffith.edu.au).

If you require further counselling support at any time prior to, or during the program, and are unable to contact the researcher, it is recommended that you contact Lifeline on 131114.
Appendix W

Consent Form

[Griffith University Letterhead]

An Evaluation of a Mindfulness-based Group Program for Binge Eating

CONSENT FORM

Research Supervisor
Dr. Analise O’Donovan
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Michelle Hanisch
School of Psychology
Griffith University
M.Hanisch@griffith.edu.au
(07) 3735 3324

Statement of Consent
By signing below, I confirm that I have read and understood the information provided and in particular that:

- I understand that my involvement in this research will include the completion of a set of paper and pencil questionnaires and records before, during and after participation in the Mindfulness-based Group Program for Binge Eating;
- I have had any questions answered to my satisfaction;
- I understand the risks involved;
- I understand that my participation in this research is voluntary;
- I understand that I am free to withdraw at any time, without comment or penalty from the research project, and then continue to participate in the program;
- I understand that if I have any additional questions I can contact the research team;
- I understand that I can contact the Manager, Research Ethics at Griffith University Human Research Ethics Committee on (07) 3735 5585 (or research-ethics@griffith.edu.au) if I have any concerns about the ethical conduct of the project; and
- I agree to participate in the project.
Statement of Video-tape Consent

- Video tape recordings are made to enable clinicians to maintain consistent delivery of the program.
- The video recordings will be viewed by the clinicians involved in the research team to maintain program integrity.
- The tape will be erased as soon as the research process is complete.
- I understand that I have the right to request that the tape be turned off at any point during the sessions.
- I hereby consent to have a video tape made on the above conditions.
- All video tapes will be securely maintained.

Name: ________________________________________________

Signature: ____________________________________________

Date: _________
Appendix X

Waitlist Screening Call

This is …….. from the Griffith University Mindfulness Program. This is just a quick call to discuss the program, which is staring soon. Is this a good time to have a quick chat?

Firstly, I just wanted to make sure that you’re still interested in attending.

- If ambivalent – inquire further; try to make a therapeutic connection with them.

How have things been with since you were here last?

  Prompt if necessary to assess:

  - Whether binge eating is still present. If not, congratulate them and suggest that program may not be useful as eating issues seem to have resolved at this time;
  - Any stressors have occurred that might suggest that this is not a good time to attend the group/will affect their capacity to commit to or attend the entire program.

We’ll be sending out some questionnaires this week. Can you please fill them out and bring them to the first session. We’re really looking forward to seeing you.
Imagine if you told a family living in abject poverty that there was a treasure of gold under the dirt floor of their shanty. They would only have to remove the layers of dirt hiding it and they would be rich forever. In the same way, we are not aware of our true nature, hidden by our own defenses.
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WELCOME

We are delighted to have you as a participant in the Griffith University Mindfulness Program and hope that you find mindfulness as helpful as we have.

Traditionally, mindfulness is used as a practice to ease suffering and enrich our lives, and has its origins in Buddhist philosophy. In the west, our cultural values are somewhat different from eastern countries and the reasons for practicing mindfulness can therefore also be different. In our culture practicing mindfulness can help us to know and accept ourselves with compassion and kindness.

The beauty of mindfulness is that you can practice it anywhere, anytime. While engaging in formal practice (meditation) offers many benefits (slowing down the ageing process, improved immune function, increasing positive emotions), simply bringing your attention to the here and now (the essence of mindfulness) has its own benefits (increased ability to cope with stress, awareness and better control of our emotional reactions, improved concentration). At the end of the course, you can take these skills with you.

You might like to think of the next eight weeks as a journey. You cannot be certain exactly where it will take you, for it will be different for everyone, but there will be many opportunities for rewarding experiences along the way. With this in mind, we hope you decide to approach and engage in the learning with all the enthusiasm and curiosity you can gather.

Angela Morgan and Michelle Hanisch will be sharing your journey. We have developed this guidebook to accompany you through the program and beyond.
WHY ARE WE HERE?

This group has formed because of a particular relationship with food and body image. We recognise that this relationship with food is only one aspect of who we are. Mindfulness encourages us to discover ourselves, and be caring and compassionate towards every aspect of ourselves. Practicing mindfulness may lead us to want to reduce things in our lives that cause us suffering. You may be surprised to find that some of the behaviours associated with eating that make you unhappy may reduce without specific focus on changing them.

Many of the exercises and techniques will apply to different areas of your life and you can choose whether you apply them to how you relate to food. Some of you may have previously been part of groups, or had individual therapy that has heavily focused on controlling eating. However, we respect your choices and autonomy in how you decide to live your life.

This guidebook has been inspired by the wisdom of the Buddhist philosophy, and has adopted some concepts, including those from the following sources:
Thich Nat Hahn
Jon Kabat-Zinn
Ronna Kabatznick
Tara Brach
Malcolm Huxter

While some of the concepts are drawn from Buddhism, it is not necessary to either believe in or to understand Buddhism. Many concepts have universal application and feature in many current psychological and spiritual practices and theories.
Session One

OUR JOURNEY

Congratulations on choosing to learn about mindfulness!

Mindfulness can be many things – a way of being, skills you learn, even a type of meditation. Your interest may begin as a trickle, but the more you use it, the more likely it is that it will become a cascade, enriching your life and easing the daily struggles.

By joining this eight-week program, you have started on a journey to freedom. Freedom from your habitual reactions, freedom from impulses to do the things that ultimately hurt you, and freedom to relate to yourself in a different way – with compassion, patience, kindness and understanding.

_I am larger and better than I thought_
_I did not think I had so much goodness_

Walt Whitman
All of us are different and we will all be constantly in motion, constantly changing, for no two people, no two processes and no two moments are ever alike. There may be times in our journey where, for some, all will flow smoothly, while for others, there may be some turbulence. There may be times where a breakthrough for us will leave us feeling excited, and we will bubble with it like a babbling brook. There may be times when we feel as though the current has stopped flowing and we will feel stuck. We will be reminded that, at these times, we are still in flow, somewhere within us. This is the time to be the most caring and compassionate with ourselves, and to remember that where we feel stuck will free up once again.

Just as in nature, our river is constantly changing. Through practicing mindfulness, we may begin to widen our banks, to change the course of our meanderings. We may learn to ride the fast-flowing surface currents or to settle into the still and tranquil tide below. Mindfulness provides us with the rudder to guide the course of our journey.

**SO.....WHAT IS MINDFULNESS?**

At it’s most basic, mindfulness is about bringing our attention back time and time again to the present-moment. This can be done by bringing attention the breath, to body sensations, by observing our passing thoughts and changing emotions. It’s incredibly simple, yet still quite complex.

In this course we are going to be focusing on being aware of what is happening within. The skills you will be learning will assist you in experiencing calm and relieving distress. It will help you examine, tolerate and digest your emotions and thoughts now and in the future. Through learning how to manage what goes on inside, we can better manage what comes at us from outside.

Rather than attempting to change any aspect of this experience, we can bring an attitude of gentle, accepting, non-judgemental curiosity to it, no matter what it is. In this way mindfulness practice builds the capacity to accept, tolerate and transform painful mind...
and body states without feeling the necessity to react to them. Mindfulness interrupts the spiral of distress so that we can manage unruly and disruptive feelings and thought processes, allowing us to respond creatively to situations that would have previously elicited intense and habitual reactions.

Whatever we choose, we can do it with clarity and awareness.

In order to facilitate an environment that encourages everyone to find their own method of navigating the river, we make a few small requests of everyone.

- Please attend all weekly classes. Each session will build on the last and it is important to keep the momentum going.
- Try, as best you can, to do the personal practice. You wouldn’t start weaving a parachute when you’re about to jump out of a plane. Each moment of personal practice is another thread in your parachute.
- Please treat your fellow group participants with respect – allow them to talk without interrupting, appreciate and acknowledge that their learning may be different from yours, and accept that they have as much to teach as you and the facilitators do. Every journey is unique.
WHY IS MINDFULNESS SO HELPFUL?

For many of us, things may have needed to be different to be OK. We may have been told that what we’re doing is wrong. We may have been told that we need to change, or that we are not good enough as we are. And we may have come to tell ourselves that we would be happier if only things were different.

We live in a society that promotes this type of thinking. Surely we can’t be satisfied until we have that new dress, that colour-coded kettle, that new car. And if we had a smaller butt, a bigger bust, fuller lips and were a bit taller, we would happy. Our culture, advertising, and other people endorse and support these views. We can be led to believe that it is possible to change these things about ourselves. But somehow, even when we get these things, we’re still not happy. And we don’t know why.

Acquiring and ‘needing’ possessions and desiring perfection distracts our attention from ourselves. For some of us, this might seem like a good thing – on the surface. Maybe we have emotional pain that we don’t want to face. Maybe we don’t like who we are. With distraction, we will never begin to see the way things really are; that we can actually be with our pain and it will pass, and that underneath that pain is a happiness that is not dependent on external possessions and being perfect. While we are wanting ourselves and our environment to be different, we are perpetuating our unhappiness. We stay caught in the ‘if only’ trap.

Mindfulness can help us unravel the ‘if only’ trap. Mindfulness can help us appreciate each moment, appreciate ourselves, and embrace both our pain and our happiness with tenderness and compassion.
APPLICATIONS OF MINDFULNESS:

Mindfulness of the Body

This includes the breath, being aware of our posture and how we are moving, the sensations inside our body, sensations of heat and cold, tingling, hunger, pain and contact. We might notice the feeling of our feet on the ground, our back on the chair, the warmth in our hand from holding a coffee cup. We might notice our breath in our stomach, in our chest, or our nose. We might notice our ribs contract and expand with our breath. We might notice that our posture is uneven when we stand, we might notice more weight in one foot than the other, or one shoulder higher than the other. We might feel a cool breeze on our skin, the sun on our faces; we might feel our lips curve into a smile or our forehead frown in response to a comment.

The list of what we can experience within this domain is endless. **When we start to notice these things, we begin to know ourselves better.** We can also bring our attention back to these things when we are feeling stressed or anxious. If we can take our attention to our body when we have strong emotions, we can often take the sting out of them and they don’t seem so overwhelming. If we can practice watching our breath, we can always have something to bring our focus back to ground us no matter what is happening.

Mindfulness of Evaluating

This refers to the judgements, interpretations and evaluations that we attach to experience. When we label an experience as pleasant, unpleasant, or neutral, or say that we like, dislike, or are indifferent to the experience, we are infusing it with our feelings in response to it. When we become aware of our feelings towards the experience, we can recognise that the experience itself does not have a good, bad or indifferent quality. We give it that quality. **When we become aware of our tendency to label events, people, food etc in this way, we can begin to let go of labelling and just let things be as they are.**
Mindfulness of Thoughts

This refers to being mindful of the content of our mind. This can include our thoughts, and how they interact with other things like our emotions. We can also become aware of how some thoughts have a tendency to be repeated even though they may cause us distress. Becoming aware of thoughts can assist us in creating a gap between an event and our reaction to it. When we become aware of our habitual responses, we can often take a breath and choose to react in a different way.

Mindfulness of Emotions

This is very similar to mindfulness of thoughts. We can observe emotions as passing phenomena, as experiences that don’t define us, and that have no power over us.

With practice we can begin to recognise things within ourselves that we have never known before. Sometimes we might not like the things we notice about ourselves, but just because we have not seen them before does not mean they have not always been there. With awareness we are able to see, accept and let go of them. If we approach our mindfulness with the attitudes listed below, we will have the patience, kindness and compassion towards ourselves to be able to witness all things within ourselves without judgement or condemnation.
THE ATTITUDES OF MINDFULNESS

Non-judging

We are often locked into the habit of constantly judging and reacting to our experiences. These judgements tend to dominate our minds making it difficult to ever find peace. We judge ourselves, we judge other people. We are constantly making evaluations about whether something is good or bad, whether we like it or not, whether we want it or not. This habit of judging locks us into a pattern of reacting in ways that may be damaging to ourselves or others, and we are probably not even aware of them.

When we practice mindfulness, we begin to assume the stance of an impartial witness, and can observe our own ‘judging mind’. We can observe our reactions, observe how we base our judgements on very little information, and observe how our judgements can cut us off from other people, or from ourselves. We can then learn to step back from our judging mind and begin to accept things just as they are.

Patience

Patience is a form of wisdom. Patience allows us to accept that everything unfolds in its own time. When we approach ourselves with patience, we are reminded that we don’t need to be perfect at something immediately, that we don’t need to judge ourselves harshly because we have not mastered meditation yet, or because we don’t ‘get it’, or because we still feel agitated or tense despite practicing. With patience we give ourselves room to experience ourselves and other people just as they are. Paradoxically, this often frees us to move forward.

Beginner’s Mind

Often what we think we ‘know’ prevents us from experiencing the richness that each and every moment has for us. With beginner’s mind, we can approach each experience as if it is the first time we have had it. In this way, each ‘ordinary’ moment can become extraordinary. The simple exercise of eating a raisin, or of witnessing a sunset, can become a fulfilling experience when approached with beginner’s mind. Relationships with friends, relatives, and even with ourselves can become enlivened when our beginner’s mind allows us to see them with fresh eyes, letting go of the
expectations we have for the way they are. Mindfulness helps us to cultivate beginner’s mind.

**Trust**

*It is helpful to develop a basic trust in ourself and our feelings.* It is better to trust our own intuition and authority even if we make some ‘mistakes’ along the way, than to always look outside ourselves for guidance. If something doesn’t feel right, trust and honour these feelings. Our experience may be different from others but it doesn’t mean it is not OK. The philosophy behind mindfulness encourages questioning of what is taught so that we may find the way that is right for us. That applies to this program too.

**Non-Striving**

We live in a world where we are encouraged to constantly strive for success, to achieve, to ‘do’, to have a purpose. We want to make money, be perfect, have the ideal body, or be the best meditator. If we bring this attitude to mindfulness, we miss out on the sheer joy of just ‘being’. With mindfulness we don't strive to be anything or anyone else. **We have no goal other than to be ourselves.** And the irony is that we already are. With a non-striving attitude, we may begin to see ourselves in a new way, and can begin to try less and ‘be’ more.

**Acceptance**

Acceptance means seeing things as they are in the present moment. This does not mean passively accepting things that are damaging, or that could be altered to bring more joy. It does not mean accepting unacceptable behaviour from someone else, or passive resignation to difficult circumstances. **Acceptance is coming to terms with what cannot be changed right now.** We may have to accept someone’s death, we may have to accept that it is raining even if we want it to be sunny, we may have to accept that we will never be a size 6 no matter how much we diet. Often acceptance is only reached after some emotion-filled periods of denial and anger. We can accept that these stages are natural progressions in the process of coming to terms with what is, and that they are all part of the healing process. **The more we practice acceptance, the easier it becomes, and the less pain and suffering we feel.**
Simply notice the natural order of things, work with it rather than against it.

For to try to change what ‘is’ only sets up resistance.

Lao Tzu

Letting Go
There is a story about a monkey who saw a banana inside a cage with a small hole in it. The monkey could fit his hand in the cage but couldn’t pull it out with the banana in his fist. Even though all he had to do was let go of the banana to be free, he wanted it so much that he wouldn’t let go and slowly died of starvation. Sometimes we are that monkey. We want to hold on to people, to experiences, to desires so badly that even though we are suffering because of it, we won’t let them go. We think holding on brings us pleasure but it is often accompanied by pain. This works in the reverse too, where instead of holding onto things we want, we push away things we don’t want. If we don’t push them away we often realise they are not as bad as we had originally thought. With mindfulness, we intentionally put aside the tendency to cling to some aspects of our experiences and reject others. Instead we just let experience be what it is and practice observing it from moment to moment. Letting go is a way of letting things ‘be’ just as they are.
Happiness cannot be found through great effort,
But is already there, in relaxation and letting go.
Don’t strain yourself, there is nothing to do...
Only our search for happiness prevents us from seeing it.
Don’t believe in the reality of good and bad experiences;
They are all rainbows.

Wanting to grasp the ungraspable, you exhaust yourself in vain.
As soon as you relax this grasping, space is there
- open, inviting and comfortable.
So make use of it. All is yours already.

Don’t search any further...
Nothing to do.
Nothing to force,
Nothing to want,
- and everything happens by itself.

Lama Gendun Rinpoche
SESSION 1
STEPPING STONES:

Try to choose one thing that you can be mindful of this week. You might like to choose one thing from the following list, or decide on your own activity. Try to be mindful of this activity every time you do it. It’s helpful to choose something that you do daily, and preferably something you do a few times throughout the day, for example:

- Washing up
- Showering
- Having a cup of tea or coffee
- Eating breakfast, lunch, dinner, or a snack
- Driving your car
- Brushing your hair
- Waking up
- Turning door handles

Listen to mindfulness of breath and body scan on the CD provided and record your experiences on the following page. Remember that each time you practice you are weaving another thread in the parachute that will save you when life decides to push you out of the plane.
## Mindfulness Practice Record Form

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Session 2

EXPERIENCING MINDFULNESS

The Hindrances

As we follow our journey of mindfulness, it is inevitable that hindrances will arise along the way. The good news is that these hindrances don’t have to be obstacles we can’t overcome – if we respond to them mindfully, they can become part of the journey itself. These hindrances generally fall into five categories: desire and craving, aversion, sleepiness, restlessness, and doubt.

Desire or craving: this is when our minds wander to things we want, desire, or have strong cravings for. For example, if we enjoy planning and organising, this may be where our mind will go. Desires are usually illusions - we believe that once we achieve the object of our desire we will be happy, however enduring satisfaction is rarely achieved. Desires also prevent us being in the present moment.

Antidotes to desire

● be mindful, and note ‘desire’, ‘craving’, or ‘wanting’ when it occurs
● reflect on the impermanent and changing nature of all things, and remember that even pleasant things will not last forever.

Aversion: this is when we evaluate the present moment as being unpleasant, and wish it was different. Aversion can manifest as many different things, including boredom, anger, or frustration. We often avoid experiencing emotional or physical pain because of aversion. However, this is ultimately futile, as wishing something away cannot work – it can only add to suffering. It may even manifest as thoughts about not wanting to meditate.

Antidotes to aversion:
be mindful, and note ‘aversion’ – or ‘boredom’, ‘frustration’, as it arises
be mindful, and note ‘aversion’ – or ‘boredom’, ‘frustration’, as it arises
cultivate a willingness to experience the present moment as it is.
bring curiosity to the experience – note where you feel boredom or frustration in
the body – does it change in any way as you bring mindful awareness to it?

Sleepiness: although sleep is a natural and healthy thing to do, during our mindfulness
practice it can take us out of the present moment. It may feel like dullness, or a lack of
clarity, or drifting in and out of dreamy states that may seem quite pleasant.

Antidotes to sleepiness:
- bring mindful attention to it – note ‘sleepiness’, or ‘tiredness’, or ‘dullness’...
- try not to judge yourself harshly – be kind to yourself
- adjust your posture, sit up, or even open your eyes
- try mindful walking
- after all this, if you still feel sleepy, perhaps it is wise to listen to your body, and
  actually sleep.

Restlessness: this is when you find it hard to settle, or sit still. Your mind may be racing
from one thought to the next, you may feel uptight, agitated, irritable, or be worrying.
You may become quite distracted by external events around you – such as dogs barking,
or people moving around.

Antidotes to restlessness:
- be mindful, and note restlessness, or whatever it is you are experiencing
- be mindful of external things, such as sounds, maybe making them the focus of
  your awareness
- watch the restless mind – observe it, see if you can notice subtle changes in it as it
  eventually slows down
- try mindful walking
Doubt: this may manifest as scepticism and uncertainty in the belief that this will actually work. Doubt is often helpful, as there are times when we need to base decisions on evidence, and not blind faith in order to gain understanding. However, it can also get in the way of practice – we may question whether mindfulness will work, and then not practice at all.

Antidotes to doubt:

- mindfully note ‘doubt’, or ‘uncertainty’ as it occurs.
- Explore where you feel the doubt in your body and note any accompanying thoughts.

The hindrances may arise at any time, but may pass just as easily. When you notice the hindrances, you are already being mindful – sometimes this noticing is called ‘decentred awareness’ and it is as though you have become an observer of your experiences. This is the same approach you will use with mindfulness of thoughts.

Mindfulness of Thoughts

Thoughts, like all phenomenon, are impermanent. A thought will come into our mind, and if left alone, will eventually pass. As you begin to meditate, before too long you will notice that your mind is full of thoughts. Just as you notice one thought, another pops in to take its place – at times this may seem like a random and haphazard process, but at others, you will notice a definite sequence to the thoughts – how one thought leads to and builds on another. Thoughts are OK. Thoughts are normal. Thinking is what minds do. Where we get into trouble is when we start believing that our thoughts are real.

Thoughts are not real. They are just our best guess at reality.

The Buddha
Mindfulness is not about pushing thoughts away, or trying to suppress or change them. When we are being mindful, we acknowledge the presence of the thought: we observe it, but we do not get attached to it – we do not get lost in the thought, or become involved with what the thought means, or analyse why we are having the thought. **We simply allow it to be there**, with the knowledge that if it is left well enough alone, it will simply pass of its own accord.

When there is awareness of a thought, some helpful techniques may be to:

- Imagine the thought is a cloud that is passing across the sky – eventually it will dissolve and fade away.
- Imagine the thought resting on a leaf as it floats away down a river.
- Visualise the thought as a train carriage as it passes along the track in front of us – without getting on board.
- Maybe it is like a mouse on a treadmill – if we engage with it, it just stays longer. If we turn off the treadmill, it will be on its way.
- Perhaps our thoughts are more like a monkey jumping from tree to tree.
- We can try to project our thoughts onto a movie screen in our mind.

In each case, we can see that we are **not our thoughts** – they are separate from the sense of ‘me’ that we may call ‘self’, or identity. Thoughts themselves pass in and out of our minds all the time – in and of themselves, they are powerless. **It is only when we become entangled with them, and react to them, that we create optional suffering.**
SESSION 2

STEPPING STONES:
Continue to record your Mindfulness practice. You have more options to choose from this week – mindfulness of the breath, mindfulness of thoughts, or the body scan.

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Session 3

INEVITABLE AND OPTIONAL SUFFERING

The Story of the Grief-Stricken Mother:

A young woman, after years of trying to fall pregnant, had finally given birth to a baby boy, and she and her husband were overjoyed with happiness. However, when the boy was barely a few months old, he caught a terrible illness, and died suddenly. The woman had never before experienced death - or any suffering of this magnitude - and she went mad with grief. In this state of insanity, the woman took her dead child and carried him from house to house, desperately begging for medicine to bring him back to life.

One kind old man directed her to the wise village sage. The sage said, 'I can relieve your suffering. Go and bring a white mustard seed from a house where no one has died.' Hearing his words, she immediately rushed off in the innocent faith that if she brought a white mustard seed to this enlightened sage, it would be the medicine that could miraculously bring her child back to life.

The woman went from house to house, at each house asking, and at each house learning that there too, someone had died. The truth struck home. 'My child,' she said. 'I thought that death had happened to you alone; but it is not to you alone. It is common to all people.' Then, still holding the body of her child in her arms, she carried him to the forest and gently laid him to rest.

This story demonstrates that suffering is an inevitable part of life, because of the events and situations that are inevitably part of the human experience. We experience suffering associated with illness, with ageing, with the awareness of our own mortality, through witnessing the suffering of others, and when we experience the death of a loved one.

Disasters occur regularly throughout the world – earthquakes, war, famine, drought, disease, accidents. None of us are immune from suffering; it is woven into the fabric of life, it is inevitable. Thus, in this story we see how the young mother experiences the inevitable suffering associated with the death of her child.

However, this story also highlights another form of suffering – the type we create ourselves, and add to a situation. The woman’s reaction to the suffering, her struggle against the reality of the death, sent her mad, as she sought to bring her child back to life. This is optional suffering, based on our interpretation of the event.
Consider another scenario that could result in optional suffering: you receive a phone call from a friend who tells you that they cannot make the dinner you had planned. There are many possible ways to respond to this. One is to become angry, and resolve to not invite them next time. Another may be to feel rejected, and think they have cancelled because they don’t like you. Or, perhaps you are relieved, because you really just wanted to have an early night and read your new book. There are many possible responses to the one event, and the nature of our interpretation determines the level of suffering.

So, there are essentially 2 types of suffering:

1. **Inevitable** – resulting from the very nature of human existence.
2. **Optional** – what we add to our experience.

### There is a Path out of Suffering

Mindfulness provides us with a means of enduring—and ultimately moving beyond—Inevitable Suffering.

But first, we need to become aware of another fundamental truth about life: *that everything changes.* Nothing stays the same forever. This is the concept of Impermanence.

When we focus our full awareness on any experience, when we are mindful of that experience, we notice that it changes. Although this change may be subtle, fleeting, or even very slow, we become aware that each moment is different from the one before.

Everything in life changes – a flower bud will bloom, but then wilt. If you allow yourself to mindfully observe an itch without scratching it, you will find that although it may become more intense and annoying, eventually it will subside. Grief and hurt, although
painful, eventually subsides. All good things and all bad things will change and pass with
time. Suffering comes when we want the good things to last forever, and the bad things to pass
immediately. Happiness and joy will pass; but so too will sadness and anger.

This is the notion of Impermanence – that everything changes; nothing lasts forever.

We get stuck when we are not aware of Impermanence. The mother in the story did not
want to accept the Impermanence of life. As a result, she experienced more anguish than
was necessary. Once she was able to acknowledge the reality of the situation, that life is
impermanent, she could then lay her child to rest and embark on the work of grieving –
continuing to deny the reality of the loss delayed this process, and created more
suffering.

This does not only apply to major life events. Have you ever felt disappointed when a
holiday has ended and you wake up to go back to work? Have you ever been convinced
that loneliness will last forever, or a broken heart would never mend?

Just as objects of nature are impermanent, so are our thoughts and emotions – they too
change and pass. It is how we respond to the thoughts and emotions that determine how much distress
they cause us – we will continue to explore this in more detail as the journey continues.

Now we turn our focus to Optional Suffering – what it is, how to recognise it, and how
to best respond to it.

The Story of the Thirsty Monk:
A monk was travelling great and vast distances across the land. He had been
travelling night and day, and was becoming exhausted. After some time he had
run out of water. Eventually, he collapsed in the dark one night, with an
overwhelming thirst. His throat parched, he blindly fumbled on the ground
around him, desperately searching for something to drink. Miraculously, he found
a container of water, and as he drank from it, was filled with joy as the water
filled his body. That night, he slept better than he had for ages. When he awoke
the next morning, he laid his eyes upon the container of water that had satiated
his thirst the previous night. He saw that this container was very old and dirty,
and was filled with disgust.
Optional suffering is within your control. It comes from your reactions to situations and your desire for things to be different than how they are. Think back to the story of the grief-stricken mother – she was desperately searching for a way to bring her child back to life. In the story above, the thirsty monk’s experience with the container of water led him to feel both joy and disgust, depending on his reactions. The water itself is neutral – his interpretation of it led to his emotions.

If you are unaware of your struggle with how things are, or are unaware of your reactions, even more suffering is generated. You become stuck in an endless cycle of suffering. There are always situations or people to blame that keep suffering alive. For instance, the grief stricken mother could have become angry as she was unable to find a mustard seed, and directed this anger on to the unsuspecting villagers, causing more suffering. Filled with disgust, the monk may have avoided all water and eventually become ill with dehydration.

Consider the following examples of the effects of possible reactions and interpretations:

- What is your immediate reaction when you think about people eating dogs? This is a cultural norm in some places. Examine your personal response to this...is it disgust, anger, or perhaps something else? Does thinking about eating steak elicit the same response? However, eating dogs in itself is neutral just as eating cows for us might be neutral. Would eating cows elicit a different reaction for vegetarians? What about in India, where cows are sacred?

- How would it be if you hated work? If you didn’t have to work, you would be happy. Perhaps you feel unappreciated, you may not like your boss, you might feel inadequate, or that your talents are being wasted. But where is the source of suffering? Within you. You’re the one filled with resentment and frustration, not the job. Your job is a series of impermanent actions: filing, or typing at the computer etc. Each task passes and changes. It doesn’t have the power to make you happy or miserable. The reactions come from you. And
while you’re getting up in the morning thinking “I hate this job. I wish I didn’t have to go”, you’re also missing out on the beauty of that moment. You have missed the contrast of the warm bed to the cooler air outside, the fresh smell of the morning, the feeling of the water cascading over you in the shower, the smells of coffee brewing, and bread toasting. You have introduced suffering before you even get to where the supposed source of your suffering begins.

The first step in ending this cycle of suffering is to learn to recognise and identify where and when it occurs.

*Men are disturbed not by things that happen,*

*but by their opinion of things that happen.*

Epictus (55AD – 135AD)
Reflections

- Can you recognise any experiences of optional suffering from your own life?

- Can you think of a time when you have felt an intense reaction to a situation?

- How much was generated by you?

- Are there particular people who are more likely to trigger a strong reaction?

- In what ways does this lead to more suffering?

---

*We all seek happiness, but turn our backs on it*

*We all wish to avoid misery, but race to collect its causes.*

Shantideva
Often our reactions are so automatic and habitual that at first they may be difficult to recognise. Then, we may find that we’re shocked and overwhelmed at just how much we react to inherently neutral events. If this occurs, it is very important to remember to treat ourselves with compassion, and not judge ourselves harshly for our reactions. Mindfulness is about awareness, with an attitude of curiosity and acceptance.

Mindfulness can help us become more aware of when we are creating additional suffering. Practicing mindfulness of thoughts can help us to recognise our habitual thoughts in response to situations. Practicing mindfulness of emotions can help us to realise how our reactions to events can lead to more emotional suffering. With time, we can begin to see the interplay between our thoughts and emotions and how they can build on each other and lead us far from the original situation.

Practicing mindfulness in everyday life can help us to disentangle ourselves from the tendency to react to, and elaborate on, situations, and can remind us of just how rich each moment is.

Reality is an illusion, albeit a persistent one
Albert Einstein

Mindfulness of Emotions
We have emotions for a reason – they are a signal for us to pay attention to what is happening and take action. Emotions always have a reason but sometimes we can overreact to them, or become overwhelmed by them. This prevents us from responding to the message and we can spend a lot of energy avoiding the emotion itself or being consumed by it.

For example, if we are feeling lonely, we can either respond to the message and phone a friend, or we can avoid the feelings and binge eat, or shop, or do something else that may make us feel worse afterwards.

Emotions – just like thoughts – are also impermanent. Despite the emotions that sometimes may swirl around us, we can learn to recognise and contact a place of stillness within.

Imagine a tree in a storm - its roots remain strong and grounded despite the wind whipping the branches; the rock in the ocean storm – although the waves crash overhead, pounding on the rock, the rock stays firm, solid and calm. That place of inner stillness is available to us and is believed to be our inherent nature.

Some helpful analogies:

- Emotions are like waves – they may swell, increase in size, crest and peak, but they also inevitably fall away.
- They may be like a storm passing – full of thunder, lightening, noise and torrential rain, but underneath, there is still the clear sky that was there all along.

It is helpful to try to become an observer of our emotional experience – just as we did with our thoughts. It can also be helpful to use noting or labelling to describe our emotional experience rather than getting caught up in the story about what we are feeling. The following is a list of emotion words to help you with noting:
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<th>Emotion Words</th>
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<td>Anxious</td>
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<td>Apathetic</td>
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<td>Anguish</td>
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<td>Discouraged</td>
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<td>Disgusted</td>
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SESSION 3
STEPPING STONES:

Test the notion of Impermanence for yourself. See if you can find anything that is Permanent.

Do you think you might have found something? If you think you might have, ask yourself the following questions:

- How likely is it that it will remain unchanged, exactly as it is in 50 years? 100 years?
- Is it somehow different when observed from another angle?
- Does it continue to exist unchanged when you leave the room?
- Is it exactly the same when the wind blows it? When light or shadow pass over it?

Through the week, take note of a time when you are experiencing a strong reaction to a person, an event or a situation. Try to differentiate between the event and your reaction to it. Begin to note and label your reactions (e.g., angry thought, excited thought, joy, sadness, etc).

Example: you sleep in.

<table>
<thead>
<tr>
<th>Event</th>
<th>Reaction</th>
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<tbody>
<tr>
<td>Sleeping past the alarm</td>
<td>Irritation, anger, thoughts about already having a bad day</td>
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</table>
How much is inevitable, and what proportion is optional suffering? Notice how all this comes from you, and not the situation itself.

Listen to mindfulness of emotions on the CD provided and record your experiences.
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Thoughts, Inspirations and Observations
THE HUNGRY GHOST AND THE CONTROL FREAK

The Hungry Ghost is characterised by insatiable cravings and often addictions. It constantly yells to us: ‘I want this, I need this, I have to have this’. The Hungry Ghost has an enormous stomach and a tiny neck. It constantly wants to eat, but cannot swallow; and when it tries to drink, the liquid turns to fire, intensifying its thirst. The torture of the hungry ghost is not so much the frustration of not being able to get what it wants, but rather, it’s clinging to those things it mistakenly thinks will bring satisfaction and relief. You might think of your Hungry Ghost like Gollum from ‘Lord of the Rings’, constantly chasing his ‘precious’ even while it was turning him into the creature that he didn’t want to be. What you chase may not be a magical ring, maybe it is recognition, support, maybe chocolate, shoes, perfection.

Just like Gollum, the Hungry Ghost does not realise that having these desires fulfilled does not bring happiness. The more we fill the Hungry Ghost, the more it wants. It cannot get enough. And if it has enough of one thing, it will desire something else.

Have you wanted desperately to be loved, and then, miraculously, you meet the man of your dreams and he loves you. Somewhere, sometime down the line, that is not enough anymore. Now you want him to do more around the house, you want him to change, to be exactly how you want him to be.

Because one desire has been fulfilled, we must want something else, and life will not be good enough until we have that desire met. But then there is another, and another, and another.

For example, you may have lost the 2kilos you ‘had to’ lose but now our hair isn’t right. If only it were silkier, we would be beautiful and happy. And if our hair becomes silky, we will want to get rid of our freckles. Our desire for beauty or perfection will never be fulfilled because we are so attached to it that we cannot see
anything beyond it. We are in the grips of the Hungry Ghost. Our thirst will not be quenched, our belly will not be filled. And all this time, we are dissatisfied, angry maybe, unhappy – suffering!

Sometimes, what we will do is enlist the help of the Control Freak to help manage the Hungry Ghost. This already sounds like a recipe for disaster! The Control Freak works against the Hungry Ghost by pushing the opposite: abstinence instead of craving. If the Hungry Ghost wants lasagne, the Control Freak will demand that we have a salad with no dressing. If we’ve been working hard and the Hungry Ghost wants to party, the Control Freak will demand we stay in so that we will be OK for work on Monday. The Control Freak is often a very harsh, critical, punitive, and judgemental master. It sets extremely high standards for us to follow, and expects perfection every time, no matter what. If we do not obey it and keep in line, it gets mean. It tells us we are weak, we are bad; we should be ashamed of ourselves for not being stronger, for not being perfect.

The war between the Hungry Ghost and the Control Freak is bitter. If the Hungry Ghost is momentarily victorious, the Control Freak is infuriated and vengeful. Give the Hungry Ghost an inch and he will take a mile. If the Control Freak even relents a little bit, the Hungry Ghost will take over, and gorge on what was denied. But the aching emptiness is still there. After the Hungry Ghost has been fed, the Control Freak returns with a vengeance, resolves never to be so weak again, and may engage in behaviours to attempt to undo the damage caused by the rampant Hungry Ghost.

Being caught in the middle, we get pushed from bank to bank on our river, facing deprivation on one side and damaging excess on the other. And somehow, no matter which bank we hit, we are always left feeling guilty, weak and imperfect.

But.....wanting or desiring in itself is not a problem. We will explain why in Session 5.
SESSION 4

STEPPING STONES:

Recognising Your Hungry Ghost and Control Freak

You may have heard the saying ‘keep your friends close and your enemies closer’. If we can know our Hungry Ghost and Control Freak, we will know how and when they are in operation. When we can recognise them, know they are not us, and know their methods of trying to bend us to their will, we will have a much better chance of accepting that they are demanding without having to give in to their demands.

You might like to draw or write about your Hungry Ghost and Control Freak.

❖ Give them a name.
❖ Listen for them.
❖ What do they say?
❖ Are they sneaky, desperate, demanding, hurtful?
❖ What do they look like?
❖ When are they most likely to appear for you?
❖ What do they say that you need?
❖ What do they say you cannot have?
❖ What do are your thoughts when they turn up?
❖ What are your emotions?
❖ What are their favourite strategies?
❖ Do they have any tricks up their sleeves?
❖ How do they work together against you?
❖ How do they work against each other?

As we get to know and understand our Hungry Ghost and Control Freak more and more, we may begin to see them with compassion. To see that they are misguided in
what they want. We may be able to bring the same kindness, patience, and
compassion to them that we are beginning to bring to ourself. Rather than increasing
their hold, our patience and compassion may lessen their suffering, and reduce their
demands on us. Mindfulness is like the rudder that steers your boat away from
the shores of excess and deprivation and allows us a free flowing experience of
life.
Recognising Your Hungry Ghost

You can use this space to draw or describe your Hungry Ghost.
Recognising Your Control Freak

You can use this space to draw or describe your Control Freak
Continue to record Mindfulness practice.

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Thoughts, Inspirations and Observations
Session 5

ATTACHMENT AND CRAVING, AND HOW TO FIND PEACE

Everyone has basic needs that when they're met, nourish us and bring us joy and comfort. The problem develops when we become so attached to our needs that they get out of control, rule our lives and create suffering. For example, we all have a basic need for love and approval but if we are very attached to this need, it may become a clinging dependency on another person that is fuelled by fear of them leaving us or of us not having our need to be loved met by them. If we can acknowledge that we have this basic need but that it will not be permanently fulfilled, that this person may not always love us, that we may not even always love them, that love changes, as does our need for it, then we can let go of the clinging. If you have ever been in this position, you might remember that holding on so tight actually has the paradoxical effect of pushing the person away. This sort of thing can manifest in numerous ways.

Our need for approval can result in being a people pleaser if we are attached to it, or a need for shelter and clothing can result in insatiable greed where we have closets full of clothing that we never wear. When we become this person who is attached to our needs, we often punish ourselves for being like this. We might deprive ourselves of food, rest, or the comfort another person can offer. The worst thing is that if this desire was not there then that desire would be there because the experience of wanting is to want. The Hungry Ghost has no loyalty to what it wants. It will crave one thing after another.

Mindfulness can help us learn to experience even the most intense cravings without acting on them and without pushing them away.

We can acknowledge and accept the feelings of urgency, tension and fear using the attitudes of mindfulness. We can learn to manage the stress that goes with them, and then we don’t HAVE to act on them. We don’t have to satisfy the craving, we can let it express itself and pass by. We can watch the Hungry Ghost and the Control Freak waging their war within us with curiosity and patience. We don’t have to bounce off
the banks of deprivation and excess, we can flow smoothly with the current down the centre of the river.

We can also use mindfulness to gain insight into what is beneath the craving. If we can sit with the craving, watch what is happening with curiosity, patience, kindness, and nonjudgement, we can begin to see what is driving it. Maybe we are so used to being distant from our feelings and from ourselves that when we have a moment of peace, we feel uncomfortable and ‘bored’ and want to escape. Maybe we are having thoughts that we are not good enough and want to feel comforted. Maybe we feel lonely, or maybe we’re listening to the Control Freak being critical of us. Ironically, it may be the thought (and associated feelings) that we are overweight that drives us to crave food that we will later feel terrible about eating. Eventually we may begin to recognise these thoughts and feelings when they arise and be aware of them as triggers to the cravings. Catching the triggers before they become cravings reduces their impact. It takes practice to develop this insight. Mindfulness of thoughts and emotions will help us to do this. But...what we need to do first is to be able to tolerate the cravings and to be able to step back from the Hungry Ghost and Control Freak war.

All the mindfulness skills we have learnt throughout the course so far can be used to protect ourselves from becoming possessed by the Hungry Ghost or the Control Freak. Another method we can adopt is just to stop and slow down.

**Take a ‘sacred pause’**.

When we’re in the grip of desire, there can be a sense of urgency, of ‘having to have’ what we want NOW. This is the ploy of the Hungry Ghost. By stopping for a sacred pause, we have already loosened its hold on us. If we can be mindful of the urgency, mindful of the craving, mindful of the emotions, thoughts, and bodily sensations that arise with the craving, we might just be able to observe it passing. Even if we can only do this one in ten times, we have started to become free and end the terrible reign of the Hungry Ghost and the Control Freak. If we do not give in to the Hungry Ghost, we do not have to enlist the Control Freak and we can be free from feeling guilty, weak and imperfect.
FINDING PEACE

The Sacred Pause

We can weave the sacred pause into our life by pausing for a few moments during our regular daily activities. We can pause while sitting, standing, lying down, working, walking, or washing dishes. The more regularly we do this, the more likely it is that we will be able to slow everything down when something big or urgent takes hold of us.

These mini-pauses are each a thread in our mindfulness parachute.

A sacred pause begins with stopping what we are doing and allowing our awareness to focus on the present moment. We might decide to take a few breaths, observing the worries or thoughts we may have been experiencing. We might witness some tension leaving our body.

We can notice what we experience as we inhabit the sacred pause. We can bring our attention gently to the sensations in our body. We can observe what happens when we step out of our habitual way of being. We can try to simply allow this moment to be, no matter what is happening inside.

Whenever we feel stuck, agitated, or disconnected, we can begin our life fresh in that moment by taking a sacred pause. It doesn't have to be for long. We can simply pause, relax and pay attention to our immediate experience.

The Peace Walk

Sometimes the hold of the Hungry Ghost and the Control Freak seems very strong. At these times, and while our skills are developing, it can be easier to distract ourselves from them through bringing our awareness to a physical activity. Mindful walking is one way of restoring peace within. If our thoughts are racing, our heart is pounding, we feel anxious, urgent, agitated, or unsettled, we can begin our peace walk at faster pace. As we settle, our steps can become slower, and more deliberate. If we can bring
attention to our peace walk, the battle within will gradually subside, and we feel serenity again.

The peace walk involves intentionally bringing awareness to the sensation of walking. We can begin by focusing our attention on the sensations of the body moving through space. We might notice our arms swinging, our weight shifting, the sensation of the whole foot making contact with the ground. We might notice our breathing and how it naturally adjusts itself to our pace. We might notice the change in temperature as we move from a sunny to a shaded area, or the breeze on our skin.

After some time, we can slow everything down. We might begin to notice that each step has a beginning, a middle and end. That each foot touches first with the heel and rolls forward to the toes. That as one foot is touching, the other is lifting from the ground. Labelling what is happening helps to further focus our attention. Lifting, bending, placing, shifting.

We can continue to practice the peace walk until we feel free from the Hungry Ghost/Control Freak war. Their battle is only short-lived if we do not enter the struggle. We can also practice the peace walk anywhere we go: from the kitchen to the bedroom, to the shop, the car, or work. The more often we experience peace when we walk, the easier it will be to find peace through walking when the battle is in full swing.
SESSION 5
STEPPING STONES:

The Sacred Pause

You might like to experiment by choosing one thing that you do daily and make a week-long commitment to pause before beginning this activity. It might be brushing your teeth, taking a sip of tea, getting into your car, or having your breakfast. Each time, take a few moments to pause and bring awareness to what is going on within you. After you have taken your sacred pause, notice if anything has changed in how you approach your activity.

The Peace Walk

You might like to choose one distance that you walk regularly (bedroom to kitchen, etc) and, for the next week, walk that mindfully using the Peace Walk.

Continue to practice mindfulness of thoughts and mindfulness of emotions. You might begin to develop curiosity about how they feed off each other and potentially lead to cravings. Try to become aware of the thoughts and feelings that trigger your cravings. Remember to put aside judgement, and to be kind and patient with yourself.

Continue to record Mindfulness practice.

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Thoughts, Inspirations and Observations
Session 6

ACCEPTANCE & LETTING GO

So far on our journey, we have learnt to recognise and develop awareness of the Hungry Ghost, the Control Freak, and the extent of the optional suffering we generate. We have become familiar with some of our thought processes, our emotional patterns, and the physical sensations we experience.

The next step in our journey is learning how to transcend them, how to end the trance of the Hungry Ghost and Control Freak. Just as it is unhelpful to try to push away, or deny the existence of the Hungry Ghost, the path of transcendence is to not push away, but to accept.

Acceptance means seeing things as they actually are in the present.

It does not mean that you have to necessarily like what is happening, though. Remember, liking and disliking are both reactions that we add to a situation.

Think back to the grief-stricken mother – much extra suffering was caused by her non-acceptance of the death of her child. Once she accepted the reality, she could lay him to rest and begin the grieving process. This did not mean that she was happy, she just accepted the reality of the situation.

*The truth shall set you free*

John 8: 31
What Acceptance is NOT:

Acceptance does not mean passive resignation, or not taking steps to respond to self-defeating habits, or injustice. It just means recognising things as they actually are.

For example: if we feel angry at being unfairly treated – we can accept the experience of anger, but not the conditions that led to it.

Remember the serenity prayer:

Grant me the serenity accept the things I cannot change, the courage to change the things that I can, and the wisdom to know the difference.

Acceptance is not denying feelings, or pretending they are not there – this is just fooling ourselves. Accepting is about acknowledging their presence, not trying to push them or force them away, while also not acting on them.

Have a look of the following example of mindful acceptance applied to having a headache at work:
<table>
<thead>
<tr>
<th>Stance of acceptance</th>
<th>Stance of non-acceptance</th>
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<tbody>
<tr>
<td>Recognition and observation of pain as pain: “I am aware of a throbbing sensation in my forehead”</td>
<td>Recognition of pain plus interpretation: “Oh God, I’ve got the most awful headache”</td>
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<tr>
<td>Awareness of initial reaction of dislike, but do not engage with it: “I am noticing thoughts about not wanting this experience”</td>
<td>Habitual reaction of dislike: “This is so bad; this hurts so much; this is all I need; I hate this”, accompanied by feelings of frustration, anger.</td>
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<tr>
<td>Accept the experience of the headache in the present moment: “Right now, I have headache, but I am tolerating it and I know it will pass”</td>
<td>Become focused on the past &amp; the origin of the headache: “If I wasn’t so overworked/unsupported, this wouldn’t happen” Become future focused: “This is never going to end; now I won’t be able to concentrate; now I’m going to feel bad all day”</td>
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<td>From calm &amp; mindful stance, develop wise insight into the possible causes: eg, dehydration, tiredness, too long in front of screen, onset of illness, increased work pressure.</td>
<td>Completely caught up in feelings, emotions – no wise insight</td>
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<td>Choose mindful response based on wise insight: Dehydrated – drink water Tired/computer screen – take break Illness onset – initiate self-care Work pressure - prioritise, delegate, take assertive action Take painkiller if appropriate</td>
<td>Habitual, non-mindful response: Become impatient &amp; irritable with everyone; growing resentment Immediately take painkiller while source of headache (eg, dehydration, ineffective work practice, illness) remains unacknowledged and gets worse, creating more suffering</td>
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Why should we accept or let go?

Accepting rather than avoiding painful and difficult experiences seems like a very unnatural thing to do. Avoiding and non-accepting can also be a habitual pattern – things that seem familiar can feel comfortable, even when they are not in our best interest:

The 2 Monks:

There is a story of two monks who were great friends in life, and eventually died within a short space of time. While one monk went directly to heaven, his friend was reincarnated as a worm. The monk in heaven searched for him everywhere, eventually finding him living in a pile of garbage. The monk tried his very best to help his friend join him in heaven. He told him of the all beauty and peace in heaven, but the worm just turned him away – he wasn’t interested. The monk tried to explain that if the worm could just let go of this pile of garbage, he could also ascend to heaven. The worm still did not want to go, so the monk tried to physically pull him off his pile of garbage, but the harder the monk pulled, the tighter and firmer was the worm’s grasp on the garbage.

We may also have our own pile of garbage that we cling to. But, there are some quite compelling reasons to learn the process of letting go.

Reasons to adopt an accepting stance:

1. Non-acceptance just doesn’t work. Try this – squeeze your finger really hard, and try to tell yourself that it doesn’t hurt.

2. At best, non-acceptance (or avoidance) is a short-term strategy – the source of the problem will never completely go away – it may lead to anger, may build resentment, or bitterness; may manifest in other ways that also cause suffering - irritability that affects relationships, substance abuse, eating, even physical illness.

For example, imagine trying to restrain an angry bull within a small paddock. The closer he perceives the fences to be, the angrier he becomes and the more he fights against the paddock. When the bull is given space, and the restrictions are removed, he will eventually calm down.
Similarly, the more that we try to restrain and suppress our urges and emotions, the stronger and more powerful they seem to become. Our practise of acceptance and letting go is like a large paddock, providing the space for our emotions to settle.

3. Acceptance allows us to be fully in the present moment.

4. Acceptance allows us to respond mindfully, with wisdom - If we accept the feeling of anger, we then create a calm mind from which to choose the most effective response to the unfair situation. If we are reacting to anger, we might shout at someone else, impulsively resign, or try and suppress the anger, but inside the fuming continues. If we accept the experience of being angry, being impermanent as all things are, the intensity will soon pass, and then we can choose how best to respond – e.g. by taking a more assertive stance.

5. The paradox of acceptance – only full acceptance leads to change and growth. A desire for things to be different than they are is just wishful thinking – in itself it is not an effective way of creating change.

Acceptance may also involve actually seeing ourselves as we really are – warts and all. This may seem quite scary at first:

Shadow story:

There was once a man who was terrified of his own shadow. His terror was so great that he was constantly trying to run away from it. He truly believed that if he could just run fast enough, or far enough, to get away from it for once and for all, that he could then be happy. He devoted so much energy to this running that he eventually died from exhaustion. What he did not realise was that if only he had rested in the shade, his shadow would have disappeared.
How to recognise non-acceptance:

Non-acceptance can masquerade as activities that can seem, at first glance to be worthwhile pursuits. However, these are also ways in which we do not accept the reality of what is:

1. **Embarking on self-improvement plans** – while a focus on positive growth and enhancement is desirable, many of these goals and exercises can be driven by a lack of acceptance, of striving to become an ideal that is often based on cultural standards. Any self-improvement plan is based on the premise that we are somehow not ok as we are.

2. **Playing safe – rather than risking failure.** In Homer Simpson’s words, “trying is the first step to failure”. We may avoid risky situations, such as being intimate, stretching oneself, exploring creativity, or saying what we really mean.

3. **Withdrawing from present moment experience** - too much living in the future, planning, organising, preparing, constantly evaluating how we might be perceived by others, what everything means, how other people are or are not meeting our needs, whether situations are pleasant or unpleasant……generally thinking too much!

4. **Keeping busy** – filling up all our time – TV, internet, magazines, chatting on the phone, cleaning, organising, writing lists, listening to music, snacking….anything to avoid the reality of our own company, and what shadows may appear…

5. **Becoming our own worst critics** – the Control Freak emerges again, telling us that we are not OK just as we are.

6. **Focusing on others’ faults** – the more we do not accept ourselves, the more difficult it is to admit our faults, so placing the blame on others can help to relieve this.

All of these strategies end up reinforcing our non-acceptance, because they prevent us from really ever facing ourselves, even those aspects we do not like.

**The Four Steps to Letting Go and Acceptance**
**Step 1:** Recognise and acknowledge what you are experiencing in the present moment, no matter what it is.

**Step 2:** Note any initial reactions to the present experience – it could be that you don’t want to be experiencing this, or you want this feeling to last forever, and are scared that it will end.

**Step 3:** Allow the initial experience to just be there, without getting caught up in the thoughts about the experience.

**Step 4:** Bring mindful attention & curiosity to the experience. Remember the concept of impermanence.
SESSION 6

STEPPING STONES:

Identify the ways in which you avoid/do not accept experience (eg, self-improvement, being busy, watching TV, eating). What stops you from fully engaging in the present moment?

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Thoughts, Inspirations and Observations
Session 7
LOVING-KINDNESS

All you need is already within you,
Only you must approach yourself with reverence and love.
Self-condemnation and self-distrust are grievous errors...
All I plead with you is this:
Make love of yourself perfect.

Sri Nisargadatta

We have learnt on our journey how to navigate some of the more treacherous aspects of our paths. We have found ways to still the turbulent tides, to ride the tempestuous waves, and to float through the stormy seas. And now we have reached the part of our journey where we can fill ourselves with love and compassion.

We all have a desire to be loved and cared for. Sometimes in our lives, we find that instead of love and kindness, we are surrounded by feelings of anger, resentment, antagonism – emotions that feel unpleasant and promote unkindness. Sometimes we direct these feelings towards ourselves. Sometimes we are downright nasty towards ourselves. It is at these times that it helps to cultivate loving-kindness.

Loving-kindness can arise spontaneously or we can make an effort to cultivate it. Our natural state is one of love and happiness, goodwill and compassion, but sometimes the way our life has evolved makes it difficult to access this inherent loving and happy nature. Loving-kindness can help uncover this part of our nature.

Loving-kindness is the practice of directing feelings of friendly love, warmth, compassion, and acceptance towards ourselves first of all, and then on to others. When we direct these feelings towards ourselves on a regular basis we begin to notice some changes in our lives. We may notice that we feel healthier, that we sleep more restfully, have more pleasant dreams, and most importantly, have better relationships with ourselves and others.
For some of us, there may have been such a long history of unkindness directed at us that when we practice loving-kindness, feelings that do not seem loving, or kind, may arise. They may be anger, sadness, judgement, or critical thoughts about ourselves and others. They may be feelings of vulnerability that we have been protecting. Maybe directing loving-kindness towards ourselves has made us recognise that we have come to believe the criticisms, the unkind words, and have come to identify not with our deepest nature but with the self built on unkindness. Maybe we don’t feel like we deserve love and kindness.

No matter what feelings arise for you when you try to cultivate loving-kindness, you can attempt to surround yourself with acceptance, just as someone would comfort a frightened child. Maybe at first, you can only manage this for a moment. With time, you will be able to hold yourself for longer, and feelings of loving-kindness will begin to arise. You might like to observe your reactions to loving-kindness with curiosity, or to see them as providing you with a tool for greater acceptance. Your loving-kindness practice has opened a compassionate space for your anger, sorrow or resentment to be cared for. Each time you do this, even if it only lasts for a heartbeat, you have made your suffering less. You are not angry at your anger. You do not resent your resentment so much, and you are not so afraid of your fear. These emotions will still be there but you have not added to them, which can make them seem overwhelming and uncomfortable.

Loving-kindness can be used to make friends with unpleasant situations and unpleasant emotions when they are there. When we have unpleasant emotions, when we have physical pain, mental pain, we don’t like them, hate them, dislike them, or resist them. But by hating them, we give them more power, more energy. Instead, we can use loving kindness to make friends with these unpleasant sensations. One very simple way of making friends with them is by learning to say to yourself ‘it’s OK not to be OK.’
Here are some reasons to cultivate loving-kindness:

- **Hatred cannot coexist with loving-kindness;** it dissipates and is not replenished if we replace thoughts rooted in anger with thoughts rooted in love.

- **Loving-kindness allows us to see the positive elements and the goodness in ourselves.** Often, we only see our mistakes, the negative things about us. Loving-kindness helps us to see the positive elements too. And when we learn to do this, we begin to see the positive elements in others as well.

- **Loving-kindness can help us to resonate with other people,** to care more deeply for them, and to have more open relationships. After some time, you can direct your loving-kindness out to others – to people you feel love for, to those you feel some affection for, to those you have mild feelings towards and eventually to those you struggle to get along with. The more loving-kindness you cultivate, the easier it is to forgive, and the less suffering we endure because of it. You will know when you are ready to direct loving-kindness outward. It’s a good idea to feel strong and solid in the practice towards yourself first, to be able to cherish yourself. But, as always, experiment to find what feels good for you.

> This being human is a guesthouse.

> Every morning is a new arrival.

> A joy, a depression, a meanness,

> Some momentary awareness comes as an unexpected visitor.

> Welcome and entertain them all……

> The dark thought, the shame, the malice,

> Meet them at the door laughing and invite them in.

> Be grateful for whoever comes

> Because each has been sent as a guide from beyond.

Rumi
The Story of the Too-Kind Cobra:

A cobra in a forest was practising loving kindness and saying to himself: may all beings be well, may all beings be happy, may all beings be free of suffering. There was an old woman who was almost blind. She was collecting firewood and when she saw the cobra, she thought it was a rope. She used the "rope" to bundle the firewood she had collected. As the cobra was practising loving kindness, the cobra allowed the old woman to do use him to tie the firewood together. The old woman carried the bundle of firewood home.

Eventually the cobra escaped but he was in a lot of pain from all the wounds in his body. The cobra slithered painfully to see his teacher. He said to the teacher ‘Look at what has happened. I adopt your loving kindness. See the wounds, see the pain that I’m experiencing in my body.’ But the teacher very calmly and gently told the cobra, ‘You have not been practising loving kindness, you have been practising foolish loving kindness. You should have just shown yourself, hissed at the blind woman, that you are a snake, you are a cobra.’

So it is very important that in everyday life we also learn what the cobra had to learn. **It is so important to treat yourself with loving-kindness first.** Trying to be there for other people before you look after yourself can lead to unnecessary pain.

So…… how do we do it? Once again, experiment with what feels best for you. For some, repeating words will generate these feelings the easiest, for others imagining times when loving-kindness has been felt will be good. Each technique may work differently at different times.

If feelings other than loving-kindness arise, acknowledge them and welcome them. Then ask yourself to be ok to feel happiness just for a moment. Maybe to forgive yourself, whatever it is, use all your mindfulness skills to approach yourself with awareness, acceptance and patience. Maybe this is not the right time for you. Allow your experience to unfold, and let go of the desire to have it any other way than how it is right here, right now.
SESSION 7

STEPPING STONES:

You might like to listen to Loving-Kindness on the CD provided and record your experiences on the following page. Try to be gentle and patient with yourself if feelings of loving-kindness do not arise. You may find that 5 minutes of loving-kindness is enough for you but you can build up over time.

You might like to bring your awareness to your thoughts and emotions before and after practicing and record them on the following page. You might also like to pay attention to whether there are differences for you on the days you do practice loving-kindness compared to the days you do not.
Record of your practice of Loving-Kindness meditation, and other Mindfulness practice

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Session 8

YOUR JOURNEY CONTINUES....

Life will continue to unfold...there will be ups and downs, and at various times you may find yourself at different places along the river – sometimes flowing with peace and contentment, or caught momentarily on either bank, perhaps caught up in an emotional current, or in a rip of habitual thought patterns.

While it is uncertain as to what may actually happen, it is likely that the course of the river will not always be smooth sailing. The river, and your journey, will meander. It is important to remember that what we may think of as ‘progress’ may not always be predictable, and it may not always happen at the same pace, or in the same direction that we would expect. There may be times when we need to re-learn old lessons, or remind ourselves of what we already know, and at these times we may find ourselves in situations that we thought we had left behind, or doing things that we thought we had stopped needing to do. As this occurs, it would be easy to become disappointed, disheartened, and judge ourselves harshly. Actually, these are the times when we need to practice compassion, acceptance, and loving-kindness toward ourselves. There will undoubtedly be plateaus, there will be hitches and snags, as well as growth and flow.

If we were to climb a very steep mountain, we would probably not take a direct path up it’s steepest face – you would approach it with awareness, perhaps taking a path that criss-crosses along a gentler side. Each step would be carefully and mindfully chosen, we would not place all our weight onto a rock without testing it first. We would wait until we felt ready until taking the next step. At times, it might not even seem like we’re getting anywhere, until we stop to look back at where we had come from. Then we might realise that we had, in fact, come a long way, that even though the path sometimes went backwards and forwards, it was still heading upward.

*Freedom is not worth having if it does not include the freedom to make mistakes*

Mahatma Gandhi
You may have come to realise that mindfulness is more than just a technique or strategy to help navigate the troubled times...it is also an approach to life that can be practised all the time. While mindfulness can help us to endure the difficult times, the times of suffering, it can also help us to fully experience all aspects of our lives, in every moment. By continuing practice, we are moment-by-moment weaving the parachute that will help to catch our fall when crises hit. And in the meantime, mindfulness can assist us to live in the bloom of each present, unique moment, to really live our lives.

If we stray, starting again on the path is as simple as remembering to focus on the next breath. Every time we remember to come back to the breath, we are being mindful.

The benefits that can be obtained from mindfulness are directly proportionate to the amount of time spent practicing and developing them. Quite simply, we get out what we put in. During these 8 weeks, we have been guided and supported on this journey by our fellow group members, and by the facilitators. The next steps we take are on our own.

There are a number of ways that mindfulness can be integrated and maintained in everyday life:

- this book itself can be a resource to come back to
- continue use of the CDs
- stay in contact with your fellow group members
- a list of further reading and resources has also been provided for ongoing learning and support
- some people find that joining meditation groups are a useful support and motivation – some helpful websites have also been included
- choose a time of the day when you can commit to some mindful practice – some activities may be a touchstone for you
Ways in which I can continue to lay my own Stepping Stones:
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Useful Resources

Books


Websites

[www.dharma.org.au](http://www.dharma.org.au)
Links to meditation groups and retreats, other meditation links.

[www.buddhanet.net](http://www.buddhanet.net)
Information and resources on mindfulness, e-Book library, Buddhism, other links

[www.meditationcenter.com](http://www.meditationcenter.com)
Information about mindfulness meditation, meditation instructions, interactive Q & A