Chapter 1

Literature Review 1

Overview of eating disorders and treatment approaches

Eating disorders are associated illnesses largely defined by the presence of behaviours aimed at controlling body weight and shape (American Psychiatric Association, [APA], 2000). They are amongst the most incapacitating of psychiatric conditions (Klein & Walsh, 2003). Much research has focused on the clinical features, comorbidities, course, treatment and outcome of these disorders. Whilst a great deal of research has focused on the varied treatment options, to date no pharmacological or psychotherapeutic approach has been reliably demonstrated to produce long-term significant change. This chapter will provide a review of the features and treatment literature concerning the eating disorders, specifically, Anorexia Nervosa ("**AN"**), Bulimia Nervosa ("**BN**"), and Eating Disorder Not Otherwise Specified ("**EDNOS**").

1.1 Overview of the Diagnostic and Clinical Features of Eating Disorders

1.1.1 Anorexia Nervosa

Anorexia nervosa is one of the most severe illnesses affecting young women and adolescent girls (Beumont & Touyz, 2003). It is the third most common chronic illness plaguing this population with a point prevalence rate of 0.29% according to the DSM-IV-TR (APA, 2000) and is only occasionally seen in males (Beumont, Russell, & Touyz, 1993; Lucas, Beard, O'Fallon, & Kurlan, 1991). High rates of psychological and medical comorbidities are associated with AN. Long-term outcome studies indicate that only approximately one half of sufferers achieve a complete recovery and that the mortality rate is greater than fifteen percent over twenty-one years (Zipfel, Lowe, Reas, Deter, & Herzog, 2000).

The disorder is characterised by extreme weight loss due to behaviours including restriction of food intake, laxative abuse, excessive exercise, and self-induced vomiting, in conjunction with an intense fear of gaining weight or becoming fat, and a powerful influence of body shape and weight on self-esteem. Weight loss results in the loss of menstruation in females. Other medical complications include gastrointestinal problems, endocrine abnormalities, kidney problems, low bone

density, dental erosion, paraesthemia and polyuria (Touyz & Beumont, 1991; Klein & Walsh, 2003; Patrick, 2002). Subtypes of AN are categorised by the presence or absence of bingeing and purging symptoms (APA, 2000; see Table 1.1). A number of psychological features, many of which are related to semi-starvation, are often present, including depression, irritability, obsessional thinking and compulsive behaviour, reduced concentration and alertness, and social withdrawal (Beumont et al., 1993). Despite the correspondence between clinical features, the underlying psychopathology and aetiology can vary between patients.

Table 1.1
DSM-IV-TR criteria for Anorexia Nervosa (American Psychological Association, 2000).

DSM-IV-TR Diagnostic Criteria for Anorexia Nervosa
A. Refusal to maintain body weight at or above a minimally normal weight for age and height (e.g., weight loss leading to maintenance of body weight less than 85 percent of that expected; or failure to make expected weight gain during period of growth, leading to body weight less than 85 percent of that expected).
B. Intense fear of gaining weight or becoming fat, even though underweight.
C. Disturbance in the way in which one's body weight or shape is experienced; undue influence of body weight or shape on self-evaluation, or denial of the seriousness of the current body weight.
D. In post menarchal females, amenorrhea (i.e., the absence of at least three consecutive menstrual cycles).
Subtypes:
Restricting type: During the episode of anorexia nervosa the person does not Regularly engage in binge eating or purging behaviour (i.e., self-induced Vomiting or the misuse of laxatives or diuretics).
Binge eating/purging type: During the episode of anorexia nervosa, the person Regularly engages in binge eating or purging behaviour (i.e., self-induced vomiting or the misuse of laxatives or diuretics).

1.1.2 Bulimia Nervosa

Bulimia Nervosa was not described in the clinical literature until 1979 (Russell, 1979), yet a recent review states that it is now common amongst young women, with a prevalence rate of approximately 1% (Hoek, 2006). It is primarily characterised by repeated episodes of binge eating, that is, discrete periods of overeating during which patients experience a subjective sense of loss of control (Beumont & Touyz, 2003). Episodes of bingeing are cycled with the use of compensatory behaviours to rid the

body of unwanted calories (APA, 2000). Such behaviours include fasting, vomiting, laxative abuse, diuretic usage and excessive exercise. Like AN, BN is classified into subtypes, which are defined by the nature of the compensatory behaviours that are employed (see Table 1.2). BN also involves an over-emphasis on the importance of weight and shape for self-evaluation, and self-depreciation is exacerbated by the presence of the bulimic behaviours (Beumont & Touyz, 2003).

Table 1.2
DSM-IV-TR criteria for Bulimia Nervosa (American Psychological Association, 2000).

DSM-IV Diagnostic Criteria for Bulimia Nervosa
A. Recurrent episodes of binge eating. An episode of binge eating is characterized by both of the following: 1. Eating, in a discrete period of time (e.g., within any 2-hour period), 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 (e.g., a feeling that one cannot stop eating or control what or how much one is eating).
B. Recurrent inappropriate compensatory behaviour to prevent weight gain, such as, self-induced vomiting, misuse of laxatives, diuretics, or other medications; fasting; or excessive exercise.
C. The binge eating and inappropriate compensatory behaviours both occur, on average, at least twice a week for 3 months.
D. Self-evaluation is unduly influenced by body shape and weight.
E. The disturbance does not occur exclusively during episodes of anorexia nervosa.
Subtypes: *Purging type*: the person regularly engages in self-induced vomiting or the misuse of laxatives or diuretics. *Nonpurging type*: the person uses other inappropriate compensatory behaviours, such as fasting or excessive exercise, but does not regularly engage in self-induced vomiting or the misuse of laxatives or diuretics.

1.1.3 Eating Disorder Not Otherwise Specified

Eating Disorder Not Otherwise Specified (EDNOS) is a final grouping that allows for an eating disorder diagnosis for patients not fitting the strict criteria for AN or BN, yet still exhibiting significant symptoms (APA, 2000), as well as others with disordered eating consequent to supplementary psychiatric disturbances (Beumont & Touyz, 2003). It has been reported that more than 50% of clinical eating disorders presentations

are best classified as EDNOS (Turner & Bryant-Waugh, 2004; Ricca, Mannucci, & Mezzani, 2001).

Table 1.3
DSM-IV-TR examples of eating disorder not otherwise specified (American Psychological Association, 2000).

DSM-IV-TR Examples for EDNOS
A. For females, all of the criteria for anorexia nervosa are met except that the individual has regular menses.
B. All of the criteria for anorexia nervosa are met except that, despite significant weight loss, the individual's current weight is in the normal range.
C. All of the criteria for bulimia nervosa are met except that the binge eating or inappropriate compensatory mechanisms occur at a frequency of less than twice a week or for a duration of less than 3 months.
D. The regular use of inappropriate compensatory behaviour by an individual of normal body weight after eating small amounts of food (e.g., self-induced vomiting after the consumption of two cookies).
E. Repeatedly chewing and spitting out, but not swallowing, large amounts of food.

1.1.4 Comparison of the Subgroups

There is constant debate within the literature concerning the relationship between BN, AN, and the residual EDNOS category. It remains unclear as to whether these are distinct disorders especially as patients may change diagnostic categories during the course of their eating disorder presentation (Zipfel et al., 2000; Fairburn & Harrison, 2003); however, a diagnosis of AN overrides a diagnosis of BN, which in turn overrides EDNOS, according to the diagnostic criteria dictated by the APA (2000). The most resonant similarities between the AN and BN diagnoses are the overvaluation of weight and shape, the presence of behaviours aimed at controlling body weight and excessive worry about shape. Individuals with BN are usually within the normal weight range, while individuals with AN are, by definition, underweight and individuals fulfilling the criteria of EDNOS range from underweight to obese.

The widespread theoretical views regarding AN and BN are in line with cognitive theory, which conceptualises the disorders as being similar entities with similar psychopathological maintaining processes. Indeed Fairburn, Cooper, and Shafran

(2003) posit a "Transdiagnostic Theory" encompassing all eating disorders. This theory, that common mechanisms exist in and maintain all eating disorders, is based on Fairburn's (2005) observations that the shared clinical features exist only within these disorders, and not within other psychiatric disorders, and that temporal migration of patients between diagnostic categories is the norm, rather than the exception.

In opposition to Fairburn and colleagues, Beumont and Touyz (2003) contended that AN and BN do *not* share a common psychopathology, despite having a number of behavioural and cognitive similarities. They argued that the content of cognition in patients with these illness (i.e. preoccupation with food, focus on weight and shape, relation of self esteem to body shape etc.) is also found in many healthy young women, not just in those with eating disorders, despite Fairburn's (2005) claim that the shared clinical features exist only within AN and BN. Indeed some of the behavioural features of AN and BN are also prevalent within a healthy population. Thus, Beumont and Touyz challenged that AN and BN can, and should be, distinguished from each other, and from "normal" behaviour, by their intensity, rather than by their quality. The distinction between AN and BN is further supported by their differing comorbidities, as outlined in section 1.1.5. However, there is no debate surrounding the fact that the behavioural and cognitive features of AN and BN overlap to a degree. Furthermore, the authors noted that diagnoses are no more than aides of the clinician, which can help determine suitable treatment. It seems reasonable to continue to treat individuals with AN and severe BN within the same inpatient unit, without necessarily having to classify them as entailing the same, or distinct, illnesses.

1.1.5 Psychiatric Comorbidity

Psychiatric comorbidity is common in eating disorders and is relevant to the understanding and treatment of these illnesses. Comorbidities include depression, anxiety disorders and personality disorders (Carroll, Touyz & Beumont, 1996; Råstam, Gillberg & Gillberg, 1995).

The lifetime prevalence of affective disorders in patients with eating disorders has been estimated at approximately 70% (Råstam et al., 1995; Halmi et al, 1991). In a review of

the psychiatric comorbidity, O'Brien and Vincent, (2003) stated that major depression is the most common comorbid diagnosis in both AN and BN.

Anxiety plays a role in the aetiology and maintenance of eating disorders. Kaye and collaborators (Kaye, Bulik, Thornton, Barbarich, & Masters, 2004) reported a lifetime incidence of an anxiety disorder to be more than 60% in a sample of patients with AN or BN. Bulik, Sullivan, Carter, and Joyce (1996) found that 60% of AN patients and 57% of BN patients suffered from a comorbid anxiety disorder. Social phobia was the most common diagnosis in BN and obsessive-compulsive disorder was most prevalent in AN in one study (O'Brien & Vincent, 2003), however Kaye and others (2004) did not find significant differences in the prevalence of the anxiety disorders across eating disorder subgroups, except for Post Traumatic Stress Disorder being more common among individuals with BN.

In fact, the underlying aetiology of an eating disorder may be untreated posttraumatic stress disorder. Torem and Curdue (1988) presented a series of case reports indicating that treatment focusing on the resolution of the trauma in such patients resulted in an improvement in eating disorder symptomatology. Furthermore, there is a link between a reported history of childhood sexual abuse and specific eating disorder symptomatology (namely bingeing, vomiting, and negative body image) (Waller, 1992; Waller, Hamilton, Rose, Sumra, & Baldwin, 1993). Van Gerko, Hughes, Hamill and Waller (2005) concluded that the abuse might act as a moderator between a range of causal factors and eating disorder symptomatology.

There are high rates of Axis II comorbidity amongst sufferers of eating disorders, with over 30% of individuals with BN meeting criteria for a personality disorder compared to fewer than 7% of controls in one study (Carroll et al., 1996). Cluster B personality disorders, especially borderline, are more common in individuals with bulimic behaviours (O'Brien & Vincent, 2003), whereas Cluster C disorders are reported in review papers to be either equally prevalent amongst AN and BN (Rosenvinge, Martinussen, & Ostensen, 2000) or more common in individuals with AN (O'Brien & Vincent, 2003). For instance, Thornton and Russell (1997) reported that 35% of individuals with AN met criteria for obsessive-compulsive personality disorder compared to only 5% of patients with BN. In fact, some authors controversially suggest

that AN should be considered not as an independent disorder, but as part of the obsessive-compulsive spectrum (Bellodi et al., 2001). This proposal is furthered by work which suggests that both AN and obsessive-compulsive disorder may be mediated by serotoninergic dysfunction, and that this altered serotonergic function may persist following recovery (classified by weight restoration) (Bailer et al., 2005; Barr, Goodman, Price, McDougle, & Charney, 1992). The authors posit that these biological alterations may be a causal factor in the development AN.

Many papers support the widespread clinical belief about the encompassing effect of the presence of an Axis II disorder on the individual sufferer's life, suggesting that the presence of a Cluster B personality disorder is associated with a poorer outcome in AN and BN (Wonderlich & Mitchell, 2001). However, others indicate that personality disorders are weak prognostic predictors of eating disorders (Grilo et al., 2003). Grilo and colleagues (2003) furthered this argument through a study of 92 patients with diagnoses of BN and EDNOS. Whilst BN had a longer course to remission than EDNOS, the course of the eating disorder over two years was not influenced by the presence and severity of co-occurring personality disorders (Avoidant, Borderline, Obsessive-Compulsive or Schziotypal personality disorders) or Major Depressive Disorder. The temporal interaction of eating disorders and personality disorders is ill-defined, as despite personality disorders being defined as "stable and enduring maladaptive patterns of behaviour traits" (APA, 1994), a study by Rø, Martinsen, Hoffart, and Rosenvinge (2005) found that the rates of comorbid personality disorders within a sample of inpatients with eating disorders significantly decreased from 77% at admission to 57% at two year follow up.

Whilst comorbidity may or may not affect treatment outcome for the eating disorder, some studies have highlighted additional negative impacts of comorbidity. For instance, Milos, Spindler, Hepp, and Schynder (2004) report that the presence of affective disorders and Axis II diagnoses, particularly Cluster B personality disorders, is associated with suicidal ideation and a history of suicide attempts amongst patients with eating disorders.

There appears to be a relationship between BN and binge eating / purging subtypes of AN and substance abuse that is not present in restricting type AN (O'Brien & Vincent,

2003). Individuals with BN report higher rates of hazardous drinking (61-67%) than a university control group (35.7%) (Kozyk, Touyz, & Beumont, 1998). Individuals with eating disorders also often abuse weight control drugs such as laxatives, diet pills, diuretics and emetics. Despite these primarily being used for weight control, rather than for their psychoactive effects, the maintaining factors such as craving, positive reinforcement and physiological dependence may be similar to psychoactive drugs (O'Brien & Vincent, 2003).

Comorbidity is important in that it affects treatment choices. For instance, BN patients with psychiatric comorbidity, specifically any Axis I and Axis II, especially cluster B personality disorders and depressive/negativistic personality disorders (APA, 2000), are more likely to be hospitalised than BN patients who do not have additional psychiatric diagnoses (Spindler & Milos, 2004). Thus, the high levels of comorbidity in the eating disorders population and the associated complicated case formulations are likely to contribute to difficulties in determining optimal psychological and/or pharmacological treatment for such individuals (O'Brien & Vincent, 2003; Anderson, 2001).

1.2 Treatment for Eating Disorders

There are currently numerous theories that purport to explain eating disorders in the literature and hence there are a multitude of treatment strategies that have been proposed. Due to the variety of medical, behavioural and psychological variables, it is generally agreed that a multidisciplinary approach is the optimal treatment for eating disorders (Royal Australian and New Zealand College of Psychiatrists Clinical Practice Guidelines [RANZCPG] Team for Anorexia Nervosa, 2004). Accordingly, treatment can include a number of strategies. This review focuses primarily on AN, BN and subclinical presentations of these illnesses (i.e. EDNOS), with particular reference to the inpatient population.

1.3 Hospital based treatment

Touyz and Beumont (1991) suggested that patients with AN may need to be hospitalised for a number of medical reasons including low body weight or an abrupt weight loss, abnormalities in heart and/or liver function, abnormal biochemistry and

haematology test results, marked dehydration and hypotension. The authors noted that hospital management aims to increase weight and reverse the effects of starvation. Patients with BN may also be hospitalised if there are severe medical complications, if their bingeing and purging is extremely frequent, or due to concerning psychological co-morbidity (e.g. major depression). Patients in an inpatient unit generally attend group therapy programs and individual therapeutic, medical and nutritional counselling sessions. Occasionally psychotropic medication is also used[1].

Literature reviews regarding the treatment of AN suggest that weight restoration can be accomplished through intensive hospital programs utilising a behaviour modification paradigm (e.g. Kaplan, Kerr & Maddocks, 1992). This type of treatment often follows a strict and restrictive regimen, in which negative behavioural consequences are imposed for rule violations and a lack of weight regain.

However, opposing research suggests that these traditional programs may be unnecessarily rigid and that more flexible programs can achieve equivalent results (Touyz et al., 1984; Dalle-Grave, Bartorir, Todisco, 1993). In fact, the guidelines of the National Institute for Health and Clinical Excellence (NICE, 2004) state that strict inpatient behaviour modification programs should not be used in AN. Furthermore, the Australian and New Zealand clinical practice guidelines team recommend a lenient as opposed to a punitive approach in terms of operant programmes aimed at weight restoration (RANZCP CPG Team for Anorexia Nervosa, 2004). Despite this widespread endorsement, very few studies have assessed symptomatic change over short inpatient admissions using more lenient approaches, in which the primary focus is on shaping and positively reinforcing appropriate behaviours, rather than constantly punishing patients for eating disordered behaviours.

[1] Despite the recent increase in research (for reviews see, for example, Mitchell, de Zwaan, & Roerig, 2003; Casper, 2002; Pederson, Roerig, & Mitchell, 2003) the optimal role of medication in the treatment of eating disorders remains enigmatic. Currently, the regular use of medication to treat primary AN is unjustified, and that psychotropic medication should be used only if indicated for comorbid conditions (Gowers & Bryant-Walsh, 2004). There is also no clear evidence that drug based treatments are effective for weight restored patients (Kaplan, 2006). Additionally, the existing research suggests that medication alone is unable to produce full recovery in BN. A number of new psychopharmacologic strategies for eating disorders are in development (Kaplan, 2006).

Treat and colleagues (2005) reported the short-term outcome of inpatients with AN who were placed on clinical pathways determined by the subtype of AN present (i.e. binge/purge or restricting) during their inpatient admission within a structured, but predominantly lenient cognitive-behaviourally oriented program. The hospital stay was sufficient to initiate re-feeding and initial weight regain, and to interrupt compensatory behaviours in the 41 patients who completed treatment. Unfortunately 33% (20/61) of participants were discharged prematurely against medical advice. Rø and others (Rø, Martinsen, Hoffart & Risenvinge, 2004) studied the one-year post hospitalisation outcome for 24 patients with eating disorders (exhibiting mainly anorectic psychopathology). Changes on formal assessment measures occurred during this comparatively long inpatient stay (23 weeks), with no differences between post-treatment and follow up reported. Disturbingly, more than half (58%) of patients were classified as having a "poor" outcome at follow up. Lowe and associates (Lowe, Davis, Annunziato, & Lucks, 2003) reported on 472 patients with either AN, BN or EDNOS who spent approximately 2 ½ to 3 weeks in an inpatient unit following a lenient approach that consisted mostly of individual therapy (utilising strategies from psychodynamic, interpersonal and cognitive-behavioural therapy) with weekly group meetings. Patients exhibited statistically significant reductions in depressive and eating disordered symptoms during hospitalisation, with the majority of improvements (i.e. 68-98%) maintained at the 3-month follow-up. However, more favourable outcome during admission was related to less favourable outcome during the follow-up period.

Recently, researchers from the Karolinska Institute in Sweden have generated interest in their inpatient program that is founded on the premise that eating disorders develop as a consequence of starvation, rather than mental illness (Bergh & Södersten, 1998). The program focuses on re-teaching AN and BN patients to eat via a computer based feedback system called the Mandometer®. A small trial randomised with a waitlist control, concluded that the rate of remission in the treatment group was 75% at 14.7 months, with 93% of those remaining in remission at one-year follow-up. These results, which appear quite extraordinary considering previous rates of remission following treatment for eating disorders, are not conclusive. Schmidt (2003) noted a number of methodological limitations including the criteria for "remission" in AN not including a resumption of menstruation, nor a BMI within the normal range.

Furthermore, the mean illness duration of the sample was short and the mean age was 16 years, and young patients with a short illness course tend to have better prognoses. The authors defended these claims in a subsequent article (Bergh & Södersten, 2004). Nonetheless, more research is required into this type of treatment, in particular, to examine which components are the key factors.

Conclusions drawn from the current literature suggest that the rates of both short and long-term recovery and treatment adherence associated with inpatient eating disorder programs are unacceptably low. Some trials appear to have serious methodological faults. In general, studies have not been conducted with controlled designs capable of providing evidence for effectiveness of interventions for older adolescents and adults with anorexia nervosa and bulimia nervosa serious enough to warrant hospitalisation. The existing studies lack control groups and the differing treatment methods between units prohibits overarching conclusions.

1.4 Psychotherapeutic treatment

Psychological consequences of disordered eating comprise anxiety, depression, suicidal ideation, despair, lability of mood, irritability, social withdrawal, food preoccupation, obsessional thinking, poor concentration and other neuropsychological abnormalities (Touyz & Beumont, 1991; Manley & Leichner, 2003; Klein & Walsh, 2003). Most inpatient programs include psychological therapy as a major treatment component. However, the exact type of psychological therapy used may differ between programs, given that many forms of psychotherapy have been advocated for use with patients with eating disorders.

Despite the considerable number of studies of psychotherapy for BN, it is difficult to arrive at solid conclusions due to methodological difficulties in the literature. These difficulties, as outlined by Gowers and Bryant-Waugh (2004), include the heterogeneity of techniques and approaches exhibited within therapies of similar names (e.g. ‘generic CBT’ compared to CBT specifically for eating disorders [Fairburn et al., 1991]), the vast range of outcome measures and differing definitions of recovery, the timing of follow up and the presence of other concurrent therapy (e.g. inpatient general treatment programs). There are relatively few trials of

psychotherapies for AN and those that do exist are plagued by similar difficulties. Not withstanding these concerns, some general conclusions regarding the efficacy of various psychotherapeutic approaches can, and will, be drawn.

1.4.1 Cognitive Behavioural Therapy

The most widespread psychological treatment for eating disorders is cognitive behavioural therapy ("**CBT**"). Generally, this type of approach utilises a specific form of CBT which focuses on the interaction between overvalued ideas regarding weight and shape, associated maintaining thoughts, and strict dieting practices that result in disordered eating (Fairburn et al., 1991; Fairburn, Marcus, & Wilson, 1993). Treatment includes the prescription of regular normalised eating, graded exposure to feared foods, and monitoring and challenging distorted thoughts about weight, food and the self.

This specific type of CBT is the most comprehensively studied treatment for adult BN and has been shown to be efficacious across numerous reviews and more than thirty clinical trials utilising both outpatient individual (e.g. Fairburn et al., 1991) and group formats (e.g. Chen et al., 2003). Approximately one third to one half of patients make a lasting recovery, with the remainder exhibiting some improvement or no improvement (Wilson & Fairburn, 2002). In a review of the literature, Lundgren, Danoff-Burg, and Anderson (2004), concluded that CBT is widely regarded as the treatment of choice for this population. Accordingly, the NICE guidelines (2004) recommend that CBT be offered to adults with BN. However, whilst CBT does usually provide statistically significant changes in symptoms in BN, it may not reliably reduce symptoms to within the normative range.

Despite the method for implementing CBT for AN being well documented (e.g. Garner, Vitousek, & Pike, 1997), only a few controlled studies have examined the use of individual CBT for patients with AN, with the majority treated on an outpatient basis (e.g. Halmi et al., 2005; McIntosh et al., 2005; Ball & Mitchell, 2004; Serfaty et al., 1999; Channon, de Silva, Hemsley, & Perkins, 1989). Furthermore, CBT has not been comprehensively studied for adolescents with eating disorders. However, a much needed treatment trial for this population is currently underway in England which includes three randomised treatments (inpatient, outpatient, or community

treatment as usual), of which one, the outpatient program, is predominantly an individual / family cognitive behavioural intervention (Gowers, 2006).

Recently, Fairburn and colleagues (Fairburn, Cooper, & Shafran, 2003) have proposed a transdiagnostic CBT treatment for AN, BN and EDNOS, based on the premise that the shared features of these eating disorders are maintained by comparable psychological processes. This so called "enhanced" CBT ("**CBT-E**") includes specific techniques aimed at addressing perfectionism, mood intolerance, low self-esteem, and interpersonal problems as needed, and aims to improve upon the current results of CBT for eating disorders. However, the only currently existing study comparing CBT-E with the existing CBT for BN (Fairburn et al., 1993) found no differences between the treatments on eating disorder psychopathology, other than CBT-E being superior at reducing eating concerns, body shape dissatisfaction and the duration of abstinence from bulimic episodes.

There are a few studies examining the use of group CBT for AN. For instance, Wiseman, Sunday, Klapper, Klein, and Halmi (2002) compared a short term CBT group with a psycho-education group for inpatients who met criteria for either AN (n = 36) or BN (n = 4). The therapy groups were held in addition to standard hospital treatment for forty-five minutes four times a week over two weeks. Both patient groups demonstrated statistically significant improvements on measures of food preoccupation and rituals, however there were no changes in motivation or in behavioural symptomatology over the two weeks. Patients reportedly found the CBT groups more effective and enjoyable than the psycho-education groups. However, there have been no systematic studies directly evaluating the use of group CBT of equivalent length to those studies assessing individual CBT for this population.

Conclusions drawn from the existing literature suggest that CBT for AN may be moderately effective, but perhaps no more so than alternative psychotherapies. The current NICE (2004) guidelines note the absence of clinically applicable studies in this area, and suggest that CBT is just one of a number of psychological therapies that should be considered for AN. Moreover, there is a distinct lack of studies with designs capable of providing evidence for the effectiveness of CBT interventions for a

mixed group of eating disorder patients (i.e. with AN, BN or EDNOS) with illnesses serious enough to warrant hospitalisation.

1.4.2 Interpersonal Psychotherapy

Interpersonal Psychotherapy ("**IPT**") is a brief time-limited therapy that aims to resolve interpersonal difficulties that are associated with the cause and maintenance of psychiatric disorders (Fairburn, 1993). Skills are built in communication and interpersonal relations with the goal to improve interpersonal functioning and therefore decrease symptomatology (McIntosh, Bulik, McKenzie, Luty, & Jordan, 2000). It has been shown to be a moderately effective treatment for BN (e.g. Fairburn et al., 1991). Whilst CBT has been shown to produce results more quickly in BN, several studies have found IPT to be as effective at reducing symptoms at up to one year follow up (Agras, Walsh, Fairburn, Wilson, & Kramer, 2000; Fairburn et al., 1995). Nevonen and Broberg (2006) recently employed IPT subsequent to CBT, and found that this sequence worked well in both individual and group formats for outpatients with BN. Like CBT, there are no trials examining the use of this therapy with adolescent sufferers. Authors have also advocated for the examination of IPT in the AN population (McIntosh et al., 2000; McIntosh et al., 2005).

This 2005 paper by McIntosh and collaborators described the results of a randomised trial of 20 sessions of either CBT, IPT or non-specific supportive clinical management (described as a combination of clinical management and supportive psychotherapy i.e. involving education, support, praise, reassurance and advice) for 56 women with AN. In this study, non-specific management was associated with better outcomes than either CBT or IPT, a finding contrary to the authors' hypothesis. The authors suggest a number of possible reasons for this including the sense of autonomy that non-specific management allowed, and conclude that it may be a useful early phase treatment approach.

1.4.3 Psychodynamic psychotherapy

Psychodynamic therapy is based on the need to understand the patient's experience of the therapist and on the need of the therapist to understand his/her reactions to the patient (Murphy, Russell, & Waller, 2005). The majority of the literature regarding psychodynamic approaches to eating disorders describes clinical examples, with most empirical evaluations involving a modified, time limited approach.

In a controlled trial, thirty outpatients with AN were randomised to either a brief psychodynamic / behavioural psychotherapy (cognitive analytic therapy) or educational behaviour therapy (Treasure et al., 1995). There were no differences in treatment effects at treatment cessation with 63% of participants showing an improved nutritional outcome after five months of therapy. At one-year follow up, no differential treatment effects had emerged, however, only 37% of the sample were classified as "recovered".

In 2001, Dare, Eisler, Russell, Treasure, and Dodge conducted a trial for 84 adult AN out-patients who were randomly allocated to either one year of psychoanalytic psychotherapy, seven months of cognitive-analytic therapy or one year of family therapy. These treatments were compared to low contact 'routine' treatment. Psychoanalytic psychotherapy and family therapy were superior to cognitive analytic therapy in regards to symptom improvement, however the results were modest with two-thirds of the sample remaining underweight at treatment conclusion.

Murphy, Russell and Waller (2005) described the use of a psychodynamic approach in conjunction with behavioural strategies for BN and binge eating disorder. The results of the study suggest that this approach lead to significant reductions in bulimic behaviours. However, patients were only included in this study if they exhibited "sufficient motivation to effect some change" (p.385), hence the sample was possibly not entirely comparable to those individuals in an inpatient unit.

1.4.4 Emerging Psychotherapies for eating disorders

Given the relatively poor outcome of the most common psychotherapeutic approaches for eating disorders, a number of new treatment approaches have emerged in the

literature. The initial trials of family therapy, dialectical behaviour therapy, mindfulness mediation, and self-help treatment are summarised below.

Maudsley Family Therapy

Family therapy views the whole family as the source of the difficulties for the identified patient and thus aims interventions at the family system. Whilst family therapy has been of interest to eating disorders clinicians and researchers since the 1970s, it has only recently started to be examined in methodologically sound clinical trials, the first of which was conducted by Dare and colleagues (Dare, Eisler, Russell, & Szmukler, 1990).

The work of The Maudsley Hospital has been a source of interest with the team's manualised guide published in 2001 (Lock, le Grange, Agras, & Dare, 2001). This approach, which runs in parallel to medical monitoring, focuses on family management of the symptoms of AN rather than on presumed pathological features of the patient or family. The first stage of treatment focuses on enlisting the parents as "allies" in the re-feeding process, and using them to take control of their child's intake of food. The second stage aims to transfer control back to the young person as they gain weight. The third stage, which begins when the young person achieves a healthy weight, is concerned with assisting normal adolescent development including supporting the adolescent's autonomy and establishing appropriate parent-child boundaries.

Thus far, the literature suggests encouraging findings particularly with younger patients with short illness duration. From an examination of five controlled trials and case reports, Le Grange (2004) concluded that approximately 70% of patients reached a healthy weight at termination and between 75 - 90% of individuals were fully recovered at a five-year follow-up. It is generally accepted as the treatment of choice for adolescents with AN (Wilson & Sysko, 2006), with a recent study indicating that a short course (6 months) of treatment was just as effective as a longer course (12 months) (Lock, Couturier, & Agras, 2006). An ongoing study is also examining the Maudsley approach for adolescents with BN (Le Grange, 2004).

Dialectical Behavioural Therapy and Mindfulness

Dialectical Behavioural Therapy ("**DBT**") is a manualised treatment shown to be helpful in reducing life-threatening and quality of life impairing behaviours in patients with borderline personality disorder (Linehan, 1993a; 1993b). It aims to achieve this by training patients in more functional emotion management strategies including mindfulness skills, distress tolerance, emotional regulation and interpersonal effectiveness. Since DBT aims to promote affect regulation, it may be useful for those eating disorder patients with poor emotion tolerance and control (Kotler, Boudreau, & Devlin, 2003).

The use of DBT has been examined in a controlled trial featuring 31 individuals with BN or sub-threshold bulimia (EDNOS) (Safer, Telch, & Agras, 2001). Following the twenty-week individual intervention, four participants in the DBT group compared with no participants in the waitlist control were binge free. There were significant treatment effects on frequency of bulimic behaviours and on measures of emotional eating and negative affect.

Mindfulness meditation, which is included in the DBT approach, involves patients learning to become aware of their thoughts or feelings, acknowledge them as merely thoughts or feelings and move their attention to their breathing, therefore separating themselves from negative patterns of thinking and disengaging from rumination (Teasdale, Segel, & Williams, 1995). The principles of mindfulness have been incorporated into a number of treatment strategies for eating disorders including mindfulness-based CBT (Segal, Williams, & Teasdale, 2002), acceptance and commitment therapy (e.g. Orsillo & Batten, 2002) and mindfulness based eating-awareness training (Kristeller, Baer, & Quillian-Wolever, 2006). The majority of papers examining these treatments involve case studies, prohibiting general conclusions about their usefulness. However, the strongest predictor of improvement in eating control in the 1999 study of eating awareness training was the amount of time participants engaged in eating-related meditation. This was probably moderated by high motivation to overcome the disorder, again highlighting the importance of fostering readiness to recover.

Self-help treatment

Self-help treatments are of use for some individuals with BN, with approximately 20% of patients benefiting from using a manual alone (Treasure et al., 1994; Schmidt & Treasure, 1997). In these studies, the manual was problem-oriented and included strategies from a CBT framework. This self-help approach was compared to eight individual sessions of CBT or a waitlist control group. The was no significant difference in the numbers of participants who undertook treatment reaching full remission from bulimic symptoms, however the researchers suggest appeared to be more effective. The main difficulty in this study was a lack of compliance with only 60% of participants reading and completing more than half of the manual. The researchers noted that participants reported being overwhelmed by the amount of information in the manual and suggested that eight weeks of self-guided work with the manual may have been too long to maintain motivation. Of those who completed the manual, 40% became abstinent from bulimic behaviours. Therefore, self-help treatment could be a cost effective management option for certain motivated individuals with BN. Perhaps some preliminary individual or group motivational work may have improved the outcome from the manual group.

Palmer, Birchall, McGrain, and Sullivan (2002) conducted a randomised trial of three forms of self-help with or without guidance (minimal guidance, four sessions of face-to-face therapy or four sessions of telephone guidance) compared with a waitlist control group for patients with BN, binge eating disorder or EDNOS (bulimic type). Twenty-five percent of the sample of 121 patients dropped out within four months. The group that received the face-to-face therapy improved significantly more than the other treatment groups, with 65% of face-to-face group completers showing some improvement in symptoms. The group with minimal support did not differ from the waitlist control group.

Self-help manuals are likely to be unsuitable for individuals with AN due to the extent of medical concerns, the need for intensive weight restoration, and the generally poor motivation to recover or engage in treatment.

1.4.5 Conclusions regarding psychotherapy for eating disorders

Despite a number of variations of psychotherapy being examined for use with eating disorder patients, there is no established psychological treatment for AN or sub-clinical presentations of AN and BN illnesses (i.e. EDNOS). The Australian and New Zealand clinical practice guidelines for the treatment of AN conclude that much more research is required before definitive statements about the efficacy of specific treatments can be drawn (RANZCP CPG Team for Anorexia Nervosa, 2004). The guidelines team recommended a lenient as opposed to a punitive approach in terms of operant programmes aimed at weight restoration and noted that CBT and other psychotherapies are likely to help with the psychiatric aspects of AN. The most efficacious treatment for BN is currently CBT, but even this is plagued by frequent clinically insignificant changes and high relapse rates. Newly emerging psychotherapies are showing some interesting results, but positive outcome still appears to be very dependent on the patients exhibiting high motivation to recover, a factor which is not often directly addressed within the therapeutic approach.

Chapter 2
Literature Review 2
Motivational concerns within the eating disorders

Eating disorders are amongst the most debilitating of psychiatric problems (Klein & Walsh, 2003), so the effect of inadequate treatment is of extreme concern. It is widely held that one of the main factors that result in poor recovery rates is patients' ambivalence to recover from their eating disorder. Thus motivation has become a focus of investigation within this population. Much research has concentrated on the measurement of motivation or readiness to change amongst these individuals (Rieger et al., 2000; Blake, Turnbull, & Treasure, 1997; Dunn, Neighbors, & Larimer, 2003; Geller & Drab, 1999). However, to date, only two papers, and one recently completed study, have systematically examined the efficacy of approaches specifically aimed to enhance intrinsic levels of motivation in the eating disordered patient (Treasure et al., 1999; Feld et al., 2001; Geller, Brown, Srikameswaran, & Dunn, 2006).

This chapter contains a review of the literature on the motivational concerns within eating disorders. Current barriers to the successful treatment of eating disorders are also discussed. The transtheoretical model of change is described and its applicability to eating disorders is briefly reviewed. A succinct review of the use of Motivational Interviewing and Motivational Enhancement Therapy is presented, with a focus on the eating disorder literature. The chapter concludes with the rationale for and objectives of the current study.

2.1 Barriers to the successful treatment of eating disorders

Initially strong motivation to change eating disordered behaviour is a predictor of positive outcome (Royal Australian and New Zealand College of Psychiatrists Clinical Practice Guidelines Team for Anorexia Nervosa, 2004). In fact, pre-treatment readiness for change was the only reliable predictor of both short and long-term clinical improvement over 10 years at one treatment centre (Geller, 2006). Unfortunately eating disorder units continue to be plagued by patient resistance to treatment; a difficulty that has perplexed eating disorder clinicians since AN was first

described (Lasegue, 1873/1997; Morton, 1698 cited in Bruch, 1973), with the early writings of Lasegue containing the following description of a patient with AN:

> "Not only does she not sigh for recovery, but she is not ill-pleased with her condition… Here we have… an inexhaustible optimism against which supplications and menaces are alike of no avail… The whole disease is summed up in this intellectual perversion. Suppress this, and you have an ordinary affection which at last yields to the classic procedures of treatment." Lasegue (1873/1997)

Accordingly, clinicians and researchers concur that difficulties in fostering the patient's motivation to overcome their illness are *a*, if not *the*, major hurdle in the course of treatment (George, Thornton, Touyz, Waller, & Beumont, 2004; Treasure & Schmidt, 2001; Treasure et al., 1999; Vitousek, Watson, & Wilson, 1998; Wilson & Schlam, 2004).

2.1.1 Ambivalence about change and recovery

Due to their lack of motivation to change, patients may defy any attempts to alter their weight loss assisting behaviours (Vitousek, Watson, & Wilson, 1998; Kaplan, 2002). In fact, Kaplan (2002) suggests that AN could be re-conceptualised as a disorder in which the primary symptom is ambivalence about change. Whilst individuals with BN are typically more motivated to recover, ambivalence about changing attitudes and behaviours that are personally valued (e.g. surrendering the "thin ideal" and relinquishing purging behaviour) may be evident (Vitousek, Watson, & Wilson 1998).

Poor treatment adherence and treatment refusal may hence be associated with therapeutic approaches that attempt to reduce eating disordered behaviours and other functional symptomatology in patients who are not prepared to change (Prochaska & DiClemente, 1992). Accordingly, the resistance to treatment experienced within cognitive behaviourally focussed eating disorder units is not unexpected given that, to date, no trial of CBT for inpatient eating disorders supports the notion that CBT enhances poor motivation amongst eating disorder sufferers. Whilst CBT is highly effective for disorders such as panic and depression, the apparent failure of CBT

within the eating disorders field is probably attributable to the ego-syntonic (i.e. highly valued) nature of eating disorder symptoms, as patients will not actively engage in cognitive or behavioural strategies aimed at resolving symptoms they wish to keep. Indeed research has demonstrated that lower levels of motivation to change are associated with less weight gain during admission and during the six month period post-discharge for individuals with AN (Rieger et al., 2002). Given the inattention to motivation, it is perhaps not surprising that no trial of CBT for severe eating disorders has exhibited an acceptable level of long-term recovery. It is therefore essential to foster motivation to change in poorly motivated eating disordered patients and the fact that existing treatments are unsuccessful in producing complete long-term remission in a sizeable number of patients may be partially due to their neglect of such an approach. Despite the absolute necessity of widespread behavioural changes for recovery in eating disorder patients, Kaplan (2002) suggests that treatment must address ambivalence to recover prior to engaging in behavioural change work.

2.1.2 Treatment refusal and drop-out

Patients with BN and AN differ in their active seeking of treatment. Vitousek (2000) reported that over 90% of patients with BN presenting for treatment independently sought help, whereas less than 20% of the patients with AN reported that attending treatment was entirely their choice. Family, friends and physicians often coerce patients, and those who do present voluntarily are often seeking assistance with comorbid issues and may continue to deny the presence or severity of the eating disorder (Vitousek, Watson, & Wilson, 1998). It therefore follows that patients with AN are more likely to discontinue treatment for the eating disorder. However, premature treatment discontinuation is also a feature in BN.

A study by Rosenvinge and Mouland (1990) acknowledged poor motivation and non-compliance with treatment as predictors of treatment withdrawal in AN. Clinton (1996) compared eating disorder therapy completers (n=38) with those who discontinued (n=22) and found that drop out was related to discrepancies between patient and therapist expectations about the usefulness of prospective interventions. A randomised prospective study for AN by Halmi and collaborators (2005), reported an acceptance rate of those assigned to treatment with either one year of CBT or CBT

plus medication of 81%, yet the treatment completion rate was only 51%. Thus, the level of acceptance of psychological treatment was tolerable, however, the maintenance of patients within the program was poor. There is thus a strong need to foster motivation to commitment to treatment as early as possible during its course.

2.1.3 Treatment sabotage

Many patients with AN view their low weight as an achievement and their illness as a solution, rather than a problem (Vitousek, Watson, & Wilson, 1998; Serpell, Treasure, Teasdale, & Sullivan, 1999) and consequently often sabotage facets of treatment that require behaviour change. Patients with BN are often striving to control their weight, and will similarly subvert treatment. Techniques include water loading prior to weighing, surreptitious food disposal (e.g. in napkins), and diverting therapeutic focus away from weight and food issues (Vitousek, 2000). Such techniques are also hypothesised to stem from the egosyntonic nature of eating disorders, with treatment entailing the relinquishment of beliefs and behaviours that have allowed the patient to cope with life's difficulties (Manley & Leichner, 2003).

2.1.4 Feeling undeserved of receiving help

Manley and Leichner (2003) remark that patients with eating disorders may feel unworthy of receiving assistance. The patient may think that they do not have the right to occupy the therapist's time. Such beliefs stem from past experiences and core schema and manifest as a marked need for control, an inflated need for independence, suspiciousness of the therapist, and treatment refusal.

2.1.5 Relapse

Moreover, even if patients do exhibit behavioural and psychological improvement during treatment, the current management for eating disorders is associated with unacceptably high rates of relapse. Approximately 40% of women with AN who achieve a full recovery (in terms of weight restoration and a resumption of menstruation) subsequently relapse and about one half of patients hospitalised for AN require readmission (Keel & Herzog, 2004). A number of patients with AN achieve

weight restoration (a sign of AN recovery) because of the development, or escalation, of binge eating with around 10-15% of AN patients later developing BN (Eddy, Keel, Dorer, Delinsky, & Franko, 2002). Relapse rates for BN across studies indicate that about one third of women who initially recover experience a re-emergence of symptoms (Keel & Herzog, 2004). In a study of 48 BN patients followed up for four months after completing a 16 week CBT intervention, lower motivation to change, higher levels of ritualised eating and shorter periods of abstinence during treatment predicted relapse (Halmi et al., 2002).

2.1.6 Poor motivation and the inpatient eating disorder unit

The difficulties associated with treating eating disorders are perhaps no more apparent than they are within the inpatient setting. The intensity of this unwillingness to relinquish one's disorder within this environment was highlighted by Rieger and collaborators (2002) who reported that approximately 80% of patients with AN within a specialist inpatient eating disorder unit were not yet actively working towards change according to the Anorexia Nervosa Stages of Change Questionnaire (ANSOCQ; Rieger et al., 2000). Perhaps even more concerningly, the majority (i.e. 66%) of consenting patients were still not actively engaged in the change process after an average admission length of nearly three months. This statistic may even underestimate the proportion of inpatients with AN who are unwilling to relinquish their disorder as a multi-site study conducted by Surgenor, Maguire, and Beumont (2004) found that 20% of admissions ended with either the patient discharging against medical advice or absconding from the unit.

Additionally, inpatient treatment is an extremely expensive approach, with the cost of one day's stay in the eating disorders unit of a private hospital in Sydney being hundreds of dollars. Patients' progress through the unit may be thwarted by poor motivation to recover and, in the absence of clinical approaches aimed at increasing readiness to change, this delay in recovery can be costly in terms of both health and economics.

2.2 Understanding deficiencies in motivation to recover

Given the centrality of low motivation to change amongst patients with eating disorders, clinicians and researchers have turned their focus to models and therapies developed in the context of other conditions entailing motivational deficits (namely, addictive behaviours) and are examining their relevance to the treatment of eating disorders. One such framework is the Transtheoretical Model of Change (TTM, Prochaska & DiClemente, 1982).

2.2.1 The Transtheoretical Model of Change

According to the TTM (Prochaska & DiClemente, 1982; DiClemente & Prochaska, 1998), individuals progress through a series of discrete stages during the course of changing problematic behaviours (see Figure 2.1). These stages represent meaningful steps during which specific tasks must be completed in order for sustained behaviour change to occur. Six stages have been described: precontemplation (not thinking about change), contemplation (thinking about the possibility of change), preparation (getting ready for behavioural change), action (behavioural change), maintenance (working to sustain the behavioural changes that have been achieved) and termination (when the changes are fully incorporated into one's life). The model is often considered as cyclical because most people attempting to change their health behaviour will relapse and have to repeat stages in order to learn how to maintain their behaviour.

Stages of change

Individuals defined as being in the precontemplation stage of change for a particular behaviour are either unaware that there is a problem or are in denial of the need for it to be changed. When individuals begin to seriously evaluate the advantages and disadvantages of changing a behaviour, they are classified as being in the contemplation stage. During preparation, individuals have resolved the decision-making evaluation of the contemplation stage and commit to changing their behaviour within the next month (Prochaska & Norcross, 2001). They may start to make some

minor modifications to their behaviour and begin to gather the resources that they need to change. During the action stage, the individual is carrying out their change plan and making successful changes. When people are working on consolidating the behaviour changes they have made, they enter the maintenance stage. Once the change is totally integrated into their life, the individual can then be described as being in a termination phase. Clinical experience and empirical research shows that individuals do not always progress evenly through each of the stages of change. Periods of regression and stalling at certain stages are interspersed with periods of progression (Prochaska & DiClemente, 1982). Furthermore, even individuals who have exited from the change cycle for a particular behaviour may relapse consequently. If relapse does occur, it is important that the person starts to go through the change cycle again and avoids being trapped in a state of relapse.

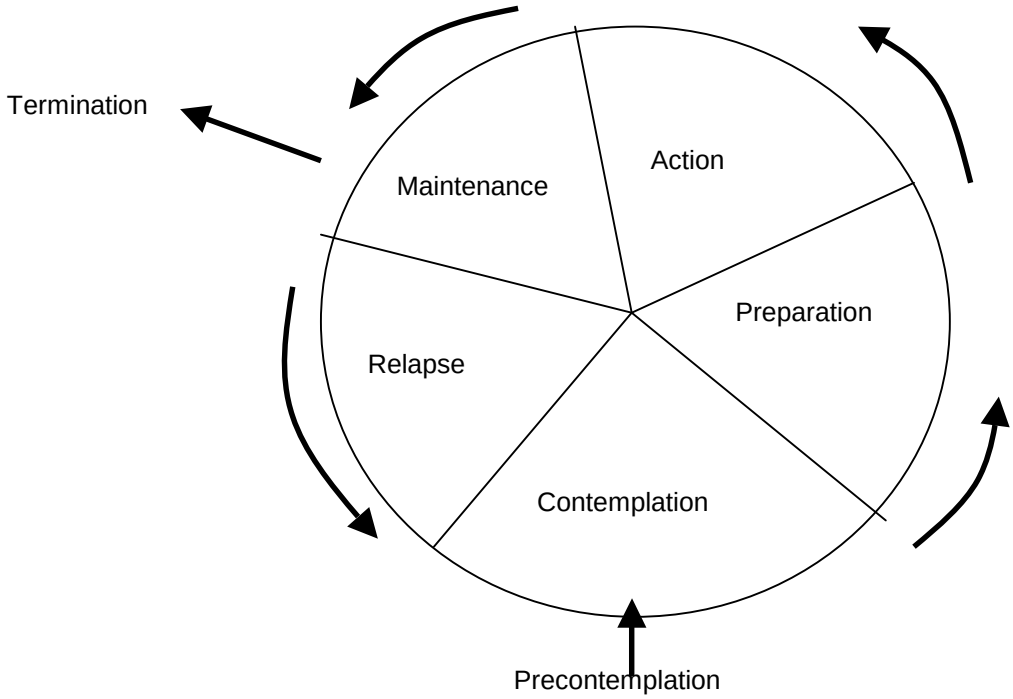

Figure 2.1. The stages of change from the Transtheoretical Model of Change (adapted from Prochaska & DiClemente, 1982).

Processes of change

In addition to the stages of change, Prochaska and DiClemente (1985) identified ten processes of change, which assist individuals to move from one stage of change to the next. The processes are activities and experiences that a person will engage in while attempting to change behaviour. The change processes have been identified from a variety of psychotherapeutic theories including cognitive, behavioural, humanistic and experiential approaches (Prochaska & DiClemente, 1982). These processes are consciousness raising, self-re-evaluation, self-liberation, counter-conditioning, stimulus control, reinforcement management, helping relationships, dramatic relief, environmental re-evaluation, and social liberation (see Table 2.1 for definitions and associated interventions of each change process).

Particular processes of change are consistent with each of the five stages of change. Individuals in the precontemplation stage are the least likely to engage with any of change processes (Blake, Turnbull, & Treasure, 1997). Contemplators are most likely to use the processes of consciousness raising, dramatic relief, and environmental re-evaluation. The preparation stage is associated with self-re-evaluation. An individual in the action stage will be most likely to utilise self-liberation, counterconditioning, helping relationships, reinforcement management and stimulus control. In order to maintain the behaviour change, the processes of reinforcement management, helping relationships, counterconditioning and stimulus control are the most commonly used (Prochaska & Velicer, 1997; Prochaska, DiClemente & Norcross, 1992; Blake, Turnbull & Treasure, 1997).

Table 2.1.
The Characteristics of each change process of the Transtheoretical Model of Change (adapted from Prochaska, DiClemente, & Norcross, 1992 and Velicer, Prochaska, Fava, Norman, & Redding, 1998).

Process of Change	**Definitions: Associated Interventions & examples**
Consciousness raising	Increasing information about self and problem: observations, confrontations, interpretations e.g. I recall information people have given me about overcoming and eating disorder
Self-evaluation	Assessing how one feels and thinks about oneself with respect to a problem: value clarification, imagery, corrective emotional experience e.g. I find the restriction that the eating disorder places on my life upsetting.
Self-liberation	Choosing and commitment to act or belief in ability to change: decision-making therapy, commitment enhancing techniques e.g. I make a commitment to change my eating disorder
Counter-conditioning	Substituting alternatives for problem behaviours: relaxation, assertion, positive self-statements e.g. I find that voicing my emotions is better than suppressing them with starvation.
Stimulus control	Avoiding or countering stimuli that elicit problem behaviours: restructuring one's environment, avoiding high risk cues e.g. I avoid the bathroom after meals.
Reinforcement management	Rewarding one's self or being rewarded by others for making changes: contingency contracts, overt and covert reinforcement, self-reward e.g. I reward myself for being freed from eating restraint
Helping relationships	Being open and trusting about problems with someone who cares: therapeutic alliance, social support, self-help groups e.g. I have someone who listens to my concerns about relinquishing the eating disorder
Dramatic relief	Experiencing and expressing feeling about one's problems and solutions: role-playing e.g. I react emotionally to how the eating disorder has affected my family
Environmental revelation	Assessing how one's problem affects physical environment: empathy training, documentaries
Social liberation	Increasing alternative for non-problem behaviours available in society: advocating for rights of repressed, empowering, policy interventions e.g. I find that my peers and social group are changing in ways that make it easier for me to remit my eating disorder.

Implications of the Transtheoretical Model of Change on Treatment

Prochaska and Norcross' (2001) review article which examined the stages of change and their relationship to treatment outcome across a wide range of problems concluded that stage of change related variables predicted treatment drop out. Treatment outcome was related to the patient's pre-treatment stage of change and to progression from one stage to the next during the first month of treatment. The authors reported that if patients advanced one stage during this period, they doubled their chances of actively making substantial changes in the subsequent six months.

Following from these findings, an implication of the TTM is that treatment should be tailored to the patient's current stage of readiness to change. That is, an action-oriented therapeutic approach is hypothesised to be ineffective for individuals best classified as being within the precontemplation or contemplation stages of change (Prochaska & Norcross, 2001). However, in the largest psychotherapy trial undertaken to date, minimal support was found for the contention that patient-treatment matching results in improved outcomes. Specifically, the results from Project MATCH found that problem drinkers with low levels of motivation to change did not improve significantly more if they received a motivational enhancement intervention compared to an alternative approach (Project MATCH Research Group, 1998). Instead, it was found that, regardless of the type of intervention received, patients had better outcomes if they reported higher levels of motivation at pre-treatment. These findings thus underscore the importance of increasing low levels of motivation early on in treatment to improve overall outcome.

The Transtheoretical model of change in eating disorders

Given the findings in other fields that stages of change can predict treatment drop out and outcome it is no surprise that recent research has examined the applicability of the TTM to the eating disorders population (Blake, Turnbull, & Treasure, 1997; Wilson & Schlam, 2004), in which premature drop out and unacceptably poor outcomes are endemic. AN patients tend to be in lower stages of change than patients with BN, with 50% of patients with AN and 17% of patients with BN at pre-action stages prior to treatment (Blake, Turnbull, & Treasure, 1997).

Wolk and Devlin (2001) assessed BN patients' stage of change prior to random allocation to either CBT or interpersonal psychotherapy (IPT). Initial stage of change, as measured by the Stages of Change Scale (SOC, McConnaughy, Prochaska, & Velicer, 1983) was not related to treatment withdrawal but it was related to outcome amongst completers, particularly in those patients assigned to IPT. In this paper, all patients who were initially classified as being in the precontemplation stage met criteria for BN following the 19 psychotherapy sessions, providing evidence for the need to foster motivation early in treatment in these patients in order for them to benefit from standard treatment programs. Other studies in the eating disorders field have supported the hypothesis that early motivational level predicts treatment outcome. In 1997, Franko examined whether BN patients' preliminary stage according to the University of Rhode Island Change Assessment Scale (URICA; DiClemente & Hughes, 1990) was related to reductions in binge frequency following a 12-week group CBT intervention. Those patients who exhibited a reduction in bingeing were classed as being in higher stages of change pre-treatment. Gusella, Butler, Nichols, and Bird (2003) adapted a staging algorithm to assess 34 adolescent eating disorders sufferers' initial stage of change for a number of problematic eating behaviours. In this uncontrolled study, the patients subsequently completed nine psycho-educational groups in addition to continuing with standard inpatient or outpatient treatment. The group was beneficial to all patients, however, those who were initially classified as being in action benefited more than those initially in pre-action stages.

Ametller and others (2005) found that low motivation to change as measured by the Anorexia Nervosa Stages of Change Questionnaire (ANSOCQ; Rieger et al, 2000) was

associated with higher likelihood of hospital admission in adolescent AN sufferers. Furthermore, Rieger and colleagues (2002) found that initial stage of change on the ANSOCQ predicted the amount of weight gain in individuals with AN during hospital admission. Stage of change was also associated with how willing patients were to engage in various aspects of treatment such as seeing a dietician, attending groups, obtaining medical test results, and attending individual therapy sessions, with those individuals classed as falling within the pre-action stages the least willing to undertake these tasks. Just over 9 % of participants in this sample were classified in the Precontemplation stage, 43.2% were within the Contemplation stage, and 27.3% were classified in the Preparation stage. Thus 79.6% of this hospital-based sample was not yet ready to take action against their eating disorder. This alarming statistic highlights the importance of an intervention aimed at increasing readiness to change during the early stages of hospital admission, to maximise the potential benefits of the hospital stay.

Preliminary support for the matching hypothesis in BN comes from a study by Levy (1997). Participants with a current or past BN diagnosis completed questionnaires related to stage of change, processes of change and treatment preferences. It was found that participants in particular stages of change advocated similar change processes and preferred treatments. For instance, those in precontemplation were the least likely to engage in any of the processes, those in contemplation were most likely to utilise the cognitive processes such as consciousness raising, and those in the action stage endorsed behavioural processes such as stimulus control. Furthermore, the data indicates that the participants preferred treatment options that related to their stage of change, with those in contemplation preferring a group based on an exploration of their relationship with food, and those in action preferring a group in which skills to help behaviour change were taught.

Innovative eating disorder treatment centres are now incorporating the principles of the stages of change model into their treatment design. For instance, Touyz and others (2003) described an Australian day hospital program, which aims to match the type of therapy to the motivational stage of the patient. Patients in pre-action stages of change attended the program for five days a week and therapy focused on developing discrepancy between the patients current behaviour and life goals, and expressing empathy towards the patient's plight. The non-negotiable behavioural requirements of the program (for example, no purging on the unit, certain requirements for weekly

weight regain) were implemented with a non-confrontational tone in line with a motivational interviewing approach (see section 2.4.1 for further details). A three-day per week program was run for patients in the preparation and action stages of the TTM. The focus of this program was to develop the action oriented processes of change, in order to foster behavioural changes.

Difficulties with the Transtheoretical Model of Change

Despite generally having widespread support, a number of papers have criticised certain aspects of the TTM (e.g. Davidson, 1998; Littell & Girvin, 2002; Wilson & Schlam, 2004). Most criticisms are based on the fact that there is a dearth of empirical studies supporting the specifics of the model, for instance the arbitrary nature of time periods that Prochaska and DiClemente (1982) have applied to various stages (e.g. contemplation being defined as considering change within six months and preparation being operationalised as change in the next one month) (Littell & Girvin, 2002).

A paper by Wilson and Schlam (2004) criticised a number of features of the model and questioned its specific applicability to eating disorders. They argued that individuals must only be assigned to one stage for a stage model to be valid, and that individuals with eating disorders had been classified as simultaneously being in a number of stages. However, eating disorder symptomatology incorporates a number of problematic behaviours (e.g. restriction of food, bingeing, laxative abuse, excessive exercising), and hence, it is not unexpected that patients may simultaneously be at different stages of change for different problem behaviours. Wilson and Schlam's criticism of the finding that participants endorse items referring to differing stages of change even for the same problematic behaviour may in fact be a criticism of the means for assessing an individual's stage/s of change, rather than a direct criticism of the model per se. In fact the authors did state that there are no adequate measures to assess the stages of change.

Wilson and Schlam (2004) also note that there is little evidence for sequential movement between stages, with individuals seemingly moving from one stage to any

other stage at any time during the change process and that no longitudinal studies have acknowledged progression through each of the five stages. However, Rollnick and Miller (1995) suggest that readiness to change is a fluctuating, interactive process between the patient and therapist, and thus this vacillation between stages is not surprising.

Wilson and Schlam further criticise the processes of change, noting that many of Prochaska and DiClemente's (1992) processes are actually procedures (e.g. the process of stimulus control refers to the procedure of moderating one's environment to enhance the likelihood of behavioural change). This argument appears to be based on semantics as the "processes" that Prochaska and DiClemente refer to are those which help an individual progress through the stages, and are therefore likely to involve some sort of procedure that the individual must undertake, be it an exploration of their life experiences in order to raise awareness of their predicament, or be it a modification of their environment.

Wilson and Schlam (2004) refer to the well-known finding of the theory underpinning cognitive behavioural therapy that behavioural change can instigate cognitive change and therefore question the specification in the model that cognitive changes occur prior to behavioural changes. In fact, the TTM merely notes that cognitive processes are more likely to be implemented in the pre-action stages, but does not preclude the use of behavioural processes during this period. Wilson and Schlam further note the dearth of empirical findings that suggest that a match between patient stage and treatment strategy increases the likelihood of change occurring, despite this hypothesis being, according to them, a key component of the model. However, to date, there are no experimental studies that compare matched and mismatched treatments for eating disorders, and thus a rejection of the use of the model in eating disorders based on either this argument, or indeed many of the other arguments in the Wilson and Schlam paper, would be premature.

Appropriately, despite these concerns, the TTM remains the focus of much research due to its usefulness in directing thinking about the manner in which people grow and change. Davidson (1998) concluded that it is a useful model on which to base the design and implementation of future interventions and that the potential practical

usefulness of the model legitimises the continuation of its employment despite its shortcomings. Stockwell (1992) noted that even if specific details of the model do not receive empirical support (e.g., the notion of discrete stages, the notion of sequential progression through each stage, or the precise processes employed at each stage), the model is nevertheless helpful in pointing out that not all individuals are ready to be actively engaged in behavioural change. The model thus highlights the importance of attending to motivation in the treatment of problem behaviours.

Assessing stage of change in the eating disorders population

One of the major difficulties with the transtheoretical model is the manner in which individuals are assigned to various stages of change (Wilson & Schlam, 2004). Littell and Girvin (2002) note that this may be due to flaws in the concepts of the stages of change and/or flaws in the measurement of the stages. There are currently a number of methods used to classify clients into stages with both staging algorithms and multidimensional questionnaires developed for generic uses (e.g. University of Rhode Island Change Assessment Scale; URICA; McConnaughy, DiClemente, Prochaska, & Velicer, 1989; and a commonly used algorithm by DiClemente et al., 1991). These types of general measures, which are concerned with changing any behaviour, fail to address the complicated nature of motivation to change eating disorder symptomatology, as individuals recovering from an eating disorder need to alter a number of problem behaviours (e.g. restriction, excessive exercise, laxative abuse), not just one.

Recently, attempts have been made to assess stage of change in the eating disorder population, with a number of measures being developed. These include a semi-structured interview, The Readiness and Motivation Interview (RMI; Geller & Drab, 1999) and the questionnaire based Motivational Stages of Change for Adolescents Recovering for an Eating Disorder (MSCARED; Gusella, Butler, Nichols, & Bird, 2003). Given the variety of measures, there is inconsistency across studies with regard to which questionnaires or algorithms they utilise to classify stage of change. This makes it difficult to draw firm conclusions from the literature.

There is a need to adopt a common validated and easily administered approach to this measurement that captures the multidimensional nature of the eating disorders. One such measure is the Anorexia Nervosa Stages of Change Questionnaire (ANSOCQ; Rieger et al., 2000), which exhibits sound psychometric properties including internal consistency, test-retest reliability, construct validity, concurrent validity, predictive validity, convergent validity, and discriminant validity and is specifically aimed at measuring motivation to change a wide array of behaviours in AN via a self report. Dunn et al. (2003) found that assessing motivation to change bingeing and compensatory behaviours separately in BN was more descriptive of concurrent bulimic symptomatology than assessing overall motivation to change, indicating that a questionnaire similar to the ANSOCQ is required for BN. A BN version of the ANSOCQ has recently been developed (Martinez et al., 2006), however, its face validity is dubious given that many of the questions that were changed from the original ANSOCQ now appear to tap self-efficacy, rather than readiness to change e.g. one question asks about one's level of confidence that they can cease bingeing.

2.3 Increasing motivation to change problematic behaviours

2.3.1 Motivational Interviewing

Approaches to increase readiness to recover, i.e. to help clients progress towards action-oriented stages of change according to the TTM, are becoming a standard feature in clinical recommendations and practice for a range of problematic behaviours. Motivational interviewing (MI) is a therapeutic style developed for the substance abuse population (Miller & Rollnick, 2002). It is an approach that respects the individual's independence. It is collaborative in nature, as the therapist works to elicit the individual's intrinsic motivation and resources for change. The inherent assumption of MI is that motivation cannot be imposed, but rather lies within each client, who can be assisted to draw upon it. The therapist does this by helping the individual explore and resolve ambivalence about change. Miller and Rollnick (2002) elucidate four main principles of MI: expressing empathy, developing discrepancy, rolling with resistance and supporting self-efficacy. Expressing empathy requires a client-centred, empathic counselling style, in which the therapist utilises reflective

listening to create an environment of acceptance. Developing discrepancy refers to assisting the client to express a disparity between current behaviour and important personal values and goals. Resistance in MI is conceived as an interpersonal phenomenon, therefore the therapist needs to work with the resistance, by subtly reframing it to steer it back towards change, rather than by confronting it. Finally, MI is concerned with enhancing an individual's self-efficacy, that is, one's belief in one's ability to successfully complete a specific task. This is partly enhanced by highlighting the client's responsibility for choosing and implementing change.

2.3.2 Motivational Enhancement Therapy

Motivational Enhancement Therapy ("**MET**") is based on the motivational interviewing approach, in that the primary therapeutic focus is the manner in which the therapist supports the patient in reaching their own, change focused, conclusions (Miller, Zweben, DiClemente, & Rychtarik, 1992; Miller, 1995). The topics and techniques of therapy are intended to engage ambivalent and change resistant patients in the treatment process. MET has primarily been utilised with substance abusers but is increasingly being adapted for other client populations. In the substance abuse population, Burke, Arkowitz, and Dunn (2002) note that it has variously been used as a stand-alone treatment, as a prelude to further treatment, and as a concurrent adjunct to treatment, with generally favourable results. Many authors (e.g. Miller, 1995) advocate that MET should ideally be used at the beginning of treatment.

MET has been used in both individual and group formats. In a recent meta-analysis of 30 clinical trials investigating adaptations of motivational interviewing, of which MET is one, across a number of problem areas including alcohol, smoking, illicit drugs, health risk behaviours, treatment adherence, diet and exercise and eating disorders, Burke, Arkowitz, and Menchola (2003) concluded that it is a promising approach to treating problematic behaviours. They suggested that future research should include clearer descriptions of the therapy under examination, more careful assessment of treatment integrity and greater uniformity of the treatments across studies.

2.3.3 Is MET a useful treatment approach for eating disorders?

Fairburn and Harrison (2003) remarked that the first principle of management in AN is to help patients become aware that they require help and to maintain their motivation subsequently. In accordance with this, the use of a MI stance and MET in eating disorders has been advocated in the literature as the basis for the initial assessment interview (Gowers & Smyth, 2004; Treasure & Ward, 1997), as a preventative tool for those deemed at risk of developing an eating disorder (Pung, 2004), and as either the foundation of, or adjunct to, a general therapeutic approach (Geller, Williams, & Srikameswaran, 2001; Vitousek, Watson, & Wilson, 1998; Treasure & Ward, 1997; Killick & Allen, 1997; Vitousek, 2000; Geller, 2002; Geller, Brown, Zaitsoff, Goodrich, & Hastings, 2003). However, despite this widespread endorsement of the need to enhance readiness to change in eating disorders and the potential use of the TTM model and motivational interviewing techniques, only a handful of treatment trials have empirically examined its use. To date, no published trial has examined the use of MET in the inpatient eating disorders setting, where patient resistance is arguably most rife.

A treatment program for individuals with chronic anorexia (defined as a illness duration of at least 7 years) that utilised both the techniques and therapist style (Geller et al., 2001) of MET in a program that drew upon schema focused cognitive behavioural therapy (Waller & Kennerly, 2003) was developed within a day patient setting by George, Thornton, Touyz, Waller, and Beumont (2004). These patients, who were either precontemplative or contemplative about change according to the ANSOCQ (Rieger et al., 2000), were assisted in increasing their awareness about their illness and in exploring the barriers to change over the trial. The program significantly increased the participant's readiness to change. Qualitative reports indicated that the patients were beginning to consider making changes to their eating disordered behaviours, with four of the eight patients undertaking voluntary inpatient admissions. The authors commented on the promising outcome of a low drop out rate in this sample, probably related to participants' reports that the non-action oriented program decreased their resistance to treatment.

Long and Hollin (1995) described a two-phase treatment approach for six weight restored AN patients with exercise problems. The first phase utilised a motivational

interviewing approach to enhance readiness to change exercise behaviour and was followed by a cognitive behavioural approach. Four of the six showed a "good" outcome at four-year follow up.

Only three completed studies have systematically examined the use of MET for patients suffering from eating disorders (Treasure et al., 1999; Feld, Woodside, Kaplan, Olmstead, & Carter, 2001; Geller, Brown, Srikameswaran, & Dunn, 2006). Treasure and colleagues (1999) compared the use of manualised MET (Schmidt & Treasure, 1997) and Cognitive Behavioural Therapy (CBT) with 125 female outpatients with BN. Participants were randomly assigned to either four individual sessions of MET or CBT. At pre-assessment, 90% of participants were in the contemplation stage measured using the University of Rhode Island Change Assessment Scale (URICA; McConnaughy, Prochaska, & Velicer, 1983).

Participants showed some reduction in eating disorder behaviours regardless of treatment group. Those participants who were in the action stage of change at pre-treatment showed significantly greater improvement in binge eating than those participants classified as being in the contemplation stage of change. However, there was no stage effect for vomiting and laxative abuse. Interestingly, and contrary to the authors' hypothesis, there was a greater increase in levels of action according to the URICA over the four weeks in the CBT group than the MET group. Neither pre-treatment stage of change nor treatment type predicted drop out with attrition rates for MET and CBT 33 % and 24% respectively. Therefore, in this study MET as a prelude to further treatment was either equal or inferior to CBT on all measures and MET did not reduce drop out, lead to a more positive therapeutic dynamic nor increase motivation to change as expected. However, a major difficulty of this study is that despite random allocation a greater proportion of participants who were classified as being in the action stage at pre-treatment were allocated to the CBT group (7/9) compared to the MET group (2/9). This discrepancy may have resulted in the CBT group having an unfair advantage given that action scores predicted a more positive treatment response.

A major criticism of this study is the inadequacy of the outcome measures. The 6-point Likert scales used to assess each eating disordered symptom (bingeing, vomiting, laxative use) may not have been sensitive enough to detect change. More

importantly, the authors highlighted the difficulty in using a non-specific measure of motivation to change in a multi-symptom disorder and reported that it would be beneficial to examine participants' motivation to change distinct bulimic behaviours separately. If one does accept that the URICA was able to provide an adequate, albeit gross measure, of motivation to change the eating disorder, then the issue of the pre-treatment stages of change becomes relevant. The idea that MET is more suited to helping reduce ambivalence to change in the early stages of change and that CBT is more suited to individuals in the action stage was not borne out in this study. However, since no participants were classified as being in the precontemplation stage of change in the Treasure study, the ability to test this hypothesis was limited. Moreover, in the Project MATCH study of alcoholism, it was found that the benefits of matching MET to patients low in motivation did not become apparent until the one and three year follow-ups (Project MATCH Research Group, 1997).

Despite these limitations, and a lack of support for their hypotheses, Treasure and colleagues (1999) concluded that MET was an effective first phase of treatment, due to its comparability with CBT as both treatments resulted in significant reductions in bulimic behaviours and increases in motivation to change and therapeutic alliance. However, given that the use of MET for patients at very low levels of motivation to change and the potential delayed effects of MET were not assessed, it is likely that this study underestimated the benefits of MET for individuals with BN. Furthermore, the study's design was potentially flawed in assessing MET as an alternative to CBT given that MET is best conceptualised as a preparation for, or adjunct to, cognitive behavioural approaches.

Wilson and Schlam (2004) suggested that the lack of support for the hypothesis that MET would result in increased motivation to recover in this study is due to the similarity of CBT and MET. The authors suggest that CBT incorporates the principles of motivational interviewing, namely, expressing empathy, developing discrepancy, collaboration, and supporting self-efficacy, but do concede that the therapeutic style and procedures of MI may not actually be part of the standard practice of CBT. Furthermore, to date, no trial of CBT for AN, or for inpatient eating disorders, has exhibited an acceptable level of recovery. Hence, no current trials support the notion that CBT enhances poor motivation amongst eating disorder

sufferers. The poor outcome of CBT for eating disorders was the instigating factor in the development of Fairburn's "enhanced" form of CBT (Fairburn, Cooper, & Shafran, 2003). Perhaps what is needed is a supplement from another type of therapy, such as MET, rather than a supposedly "enhanced" CBT, to augment the efficacy of CBT in eating disorders.

Feld and colleagues (2001) conducted an uncontrolled pilot study of a pre-treatment MET group program for eating disorder outpatients. The majority of the 19 participants were diagnosed with AN (12), with the remainder diagnosed with either BN (4) or EDNOS (3). The four sessions of manualised MET were held weekly. This study utilised a larger battery of measures than the study by Treasure and colleagues (Treasure et al., 1999), incorporating the URICA, the Concerns about Change Scale (CCS; Vitousek, DeViva, Slay, & Manke, 1996) and three Likert scales to examine motivation to change. Symptomatology was assessed more comprehensively with validated self-report measures (EDE-Q: Fairburn & Beglin, 1994; EDI: Garner, Olmsted, & Polivy, 1983). Feld et al.'s study also included self-report measures of depression and self esteem. Again, no follow up data was collected; however, patients were contacted six weeks after the intervention to determine if they were undertaking further therapy.

The attrition rate of 30% was comparable to the study by Treasure and colleagues (1999). The small sample size of this study is a major methodological concern as the primary effect of a small sample size is to decrease the statistical power of the analyses. However, despite this, some positive results were found. Participants' motivation to change and self-esteem increased, and their level of depressive symptomatology decreased following the intervention. There were no significant changes in eating disordered behaviours according to the EDE-Q or the EDI although the authors stated that this was expected as the intervention did not address nor require symptom reduction. Ninety percent (17/19) of the participants had initiated further treatment at the six week follow up. However, given that this study was uncontrolled, the findings cannot unambiguously be attributed to the specific techniques of MET as opposed to general aspects of the group intervention.

A recent study by Geller, Brown, Srikameswaran and Dunn (2006) examined the efficacy of a five-session pre-treatment intervention of Readiness and Motivation

Therapy (RMT, Brown, Lockhart & Geller, 2005) for patients with eating disorders. Participants, who were on the waitlist for either hospital based or residential treatment, were randomly assigned to either RMT (n = 56) or waitlist control (n = 55). The topics of the RMT sessions were very similar to those used in MET and included clinical feedback, discussion of the functions of the eating disorder, consideration of life values and planning for the future. The main motivation measure utilised was the Readiness and Motivation Interview, which has been shown to predict enrolment in intensive therapy, drop out, and symptom changes (Geller & Drab, 1999).

Whilst most patients in this study exhibited improvements on outcome measures at both 6-week and 3-month follow-up assessments, there were no differences between the two groups. However, those patients who remained highly ambivalent about recovery were less likely to have received RMT, and the RMT group was associated with reduced treatment dropout. Furthermore, there appeared to be a difference in response to RMT that was moderated by depression, with significant differences between the groups emerging for patients with high depressive symptomatology. Such patients appeared to benefit from the RMT groups. However, of interest is the finding that those participants in the waitlist control condition also showed improvements in readiness to recover. According to the authors, this effect may have been due to the motivationally informed stance of the program, such that assessments were conducted within a motivational framework. The RMI can be considered to be a brief motivational intervention and each participant completed it three times during the trial. As such, the control condition was "contaminated" by a motivational intervention, and was therefore not actually a treatment free condition. This further highlights the usefulness of motivationally informed interventions in enhancing readiness to recover and the authors concluded that the brief motivational intervention might have assisted in reducing ambivalence about change.

These three studies provide some evidence regarding the use of MET to increase motivation for change, and to decrease eating disorder symptomatology, and/or general psychopathology. The limited research base in this area indicates that the use of motivational interviewing based techniques in eating disorders clearly requires further investigation. In particular, controlled research assessing treatment to increase

willingness to engage in the process of change and recovery for patients with eating disorders that are serious enough to warrant hospitalisation is essential.

Chapter 3

Rationale and Objectives for the Current Study

Despite the widespread endorsement of the need to increase motivation to change among patients with eating disorders and the proposed clinical benefits of adopting an MET stance in this population, controlled research of motivational approaches in AN, and to an extent, in BN, is severely lacking. The research to date relating to assessment of stages of change and motivational enhancement therapy in eating disorder patients indicates that AN patients are less motivated to change their behaviours than are BN patients (Blake, Turnbull, & Treasure, 1997), that more motivated BN patients tend to do better on a few outcome measures than less motivated ones (Treasure et al., 1999), and that MET can be useful in enhancing motivation to change as well as increasing other psychological variables in a mixed group of eating disorder sufferers (Feld et al., 2001). Given the results that have been obtained in other fields, the methodological concerns highlighted in the current trials of MET for eating disorders and the evidence of amotivation in eating disordered patients, particularly amongst inpatients, MET for eating disorders warrants further investigation. Whist there is a dearth of controlled trials of any psychotherapeutic intervention in AN, the lack of research into motivational therapies was also hindered by the lack of a sound instrument to assess changes in motivation over treatment. The development of the ANSOCQ (Rieger et al., 2000) has allowed for specific tracking of an individual's change in motivation across a treatment trial.

Furthermore, hypotheses concerning the stages of change and MET suggest that treatment is most effective when there is concordance between the patient's present stage of change and the treatment approach (Prochaska & DiClemente, 1992; Kaplan, 2002). Despite a handful of papers that do not support this "matching" hypothesis, the pertinent methodological limitations of previously published research and the scarcity of literature in this area indicate that it would be premature to abandon the idea altogether. Both of the aforementioned treatment outcome studies included very few patients who fell within the precontemplation stage of change, where it is argued that MET is most effective. The three outcome studies included outpatient participants who were not concurrently attending an action oriented treatment program. The mismatch between stage of change and intervention is extremely relevant to inpatient

intensive treatment aimed at behavioural change and weight gain (where applicable) (Kaplan, 2002). Hence, the extremes of the hypothesis, that is, pre-contemplative clients attending a principally action-oriented program has, to date, not been examined.

Inpatient eating disorders programs are necessarily action oriented due to the medical complications that arise from extremely disordered eating and low weight status. Programs require an immediate normalisation of eating behaviours and weight gain for anorexic individuals, which may include invasive naso-gastric tube feeding, a cessation of bingeing and purging, and a termination of exercising (Touyz, Garner, & Beumont, 1995). Thus, a treatment outcome study of MET for inpatients with eating disorders is imperative. In particular, the examination of a group based MET program is important as groups are of greater clinical utility than individual sessions in that they are more easily implemented into a predominantly group based hospital unit.

3.1 Objectives of the Current Study

The global objective of the current study is to devise and assess a brief Motivational Enhancement Therapy group intervention for inpatient eating disordered patients. The specific aim of the MET intervention in the integrated treatment program is to engage and prepare poorly motivated patients for the hospital treatment program by encouraging reflection about the reasons to change, and deceasing resistance to the possibility of reducing eating disordered symptomatology. Since the factors that promote motivation are multi-faceted, a number of measures assessing motivational aspects will be utilised. Due to the relative novelty of this research in this population, a broad assessment process, covering other psychological variables beyond motivation and eating disorder symptoms, will be conducted to assess any additional effects of the MET intervention.

3.2 Hypotheses for the current study

3.2.1 Hypothesis regarding the overall sample

Four weeks of intensive inpatient treatment will result in significant improvements in motivation to overcome an eating disorder and associated constructs, including treatment engagement and self-efficacy. The balance between perceived burdens and benefits of the illness should shift. Improvements will also be apparent in eating disordered behaviour, weight (amongst underweight patients), and psychopathology and depressive symptomatology. However the scores are likely to remain within the clinical range given the short treatment time.

3.2.2 Hypotheses regarding differences between the MET and treatment as usual groups

The main hypothesis is that participation in the MET intervention will be associated with an increase in characteristics associated with higher stages of motivation to change. Specifically, the hypotheses for this section of the current study are as follows:

- Participants who complete the MET intervention will exhibit greater improvements than the TAU group on all formal outcome measures.
- The greatest differences will be apparent on the main motivational measure, with those in the MET group exhibiting a greater improvement in motivational stage.
- Such between group differences will be more obvious at follow-up, than at post-assessment, as participation in the MET intervention will foster longer-term treatment engagement compared to treatment as usual.
- Due to this increased treatment engagement, participants in the MET group will be more likely to be engaged in appropriate treatment at the follow-up assessment, than those in the TAU group.

Chapter 4
Methodology

This chapter presents the methodology for the current study, outlining the design, approval process, participant recruitment procedure, and assessment process. Details of the development and contents of the MET intervention are also presented.

4.1 Study Design

This study utilised a non-randomised controlled design with sequential allocation to treatment groups. The MET treatment groups were completed prior to the treatment as usual ("**TAU**") control data being collected and participants therefore knew to which group they had been allocated prior to giving consent. A randomised selection process was rejected for a number of reasons. Firstly, the patients on the unit attended a number of standard groups each week and spent much time together. It was thought that a control group running in parallel with the treatment group could have been contaminated through patients in the treatment group discussing the intervention with the control patients. Secondly, offering only a selection of patients an additional treatment could have been problematic, potentially leading to patient discord with the treating team if the intervention was seen as being superior.

Assessment measures for the treatment group were taken before and after the patients completed the MET intervention and at a six-week follow-up. The MET group was run on a continuous basis for six months, with the number of participants in each session ranging from one to six. The control group was assessed at comparable times. The occasions of assessment are pictorially represented in Figure 4.1.

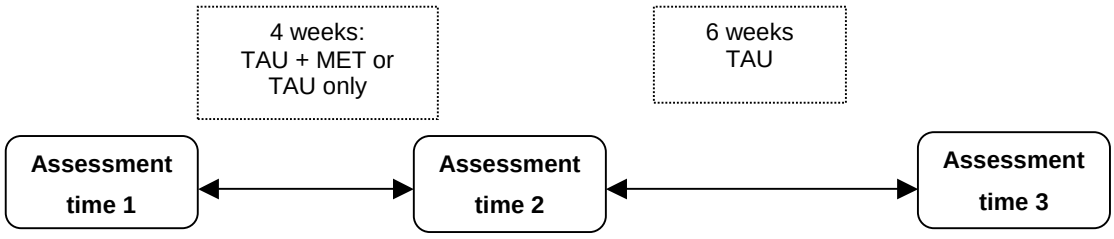

Figure 4.1. Occasions of assessment across the treatment trial

4.2 Ethical approval

This study was approved by the University of Sydney Human Research Ethics Committee, the Ethics Review Committee (RPAH Zone) of the Central Sydney Area Health Service, and by the executive committee of Wesley Private Hospital, Ashfield, Sydney (see Appendix A for approval letters). All participants and their parent or guardian (if the participant was under 18 years old) gave written consent and were provided with a detailed information sheet. Copies of these are provided in Appendix B.

4.3 Participants

Consecutive patients entering the inpatient unit of the Peter Beumont Centre for Eating Disorders at Wesley Private Hospital, which is affiliated with the University of Sydney, were approached to participate in the current study. All patients were at least fourteen years old and met diagnostic criteria for either AN, BN or EDNOS. Senior consultant psychiatrists within the unit made all eating disorder and comorbid psychiatric and medical diagnoses in accordance with the diagnostic criteria of both the 4th edition of the Diagnostic and Statistical Manual of Mental Disorders (DSM-IV; APA, 1994) and the 10th edition of the International Classification of Diseases (ICD-10; World Health Organisation, 1994). Patients who were at serious risk of medical emergency due to their eating disorder, and consequently exempt from the group program at admission, were excluded from the study. Forty-two participants were recruited. Further details about participants are reported in Chapter 5.

All participants were involved in the standard inpatient treatment program conducted by a multidisciplinary team consisting of two psychiatrists, at least two clinical psychologists, intern clinical psychologists, a dietician, an exercise therapist, a general practitioner and trained nurses. The program was based on a lenient behavioural modification approach with leave from the unit primarily determined by weight gain for underweight individuals. Additionally, patients attended compulsory groups run by a nurse therapist for four days per week and by the author (an intern clinical psychologist) on the final weekday. Weekly groups were also run by a clinical psychologist, a psychiatrist, other intern clinical psychologists and a dietician. There

were approximately 15 groups per week. These focused on a variety of approaches including cognitive behavioural therapy techniques, distress tolerance skills, communication training, and dietary counselling. Additionally, patients had individual meetings with a dietician, psychiatrist and/or psychologist at least weekly. Meals and snacks were supervised by nurses according to strict guidelines around meal duration and permissible eating behaviour. A number of other measures were employed to minimise eating disordered behaviours, such as random room searches for prohibited substances (e.g. food, chewing gum, and laxatives), locking bathroom doors for a period after meals, not allowing bedroom doors to be closed, and close supervision of all patients on the unit at all times. Staff communication was achieved through a comprehensive weekly multidisciplinary ward round and informal daily communication.

4.4 Assessment

According to Miller and Rollnick (2002), a strength of most MET studies is the use of multi-modal measurement. This tradition was continued in the current study. The assessment included a variety of self-report questionnaires that assessed motivation for change, eating disorder symptomatology, other psychiatric symptomatology, and demographic information. The patients' medical records were accessed to ascertain information regarding physical measures and psychiatric history.

All questionnaires were administered before and after the intervention, except for the demographic questionnaire, which was only given at the commencement of the study. The initial questionnaires were administered during patients' first week in the unit. Patients in the intervention group also completed a brief three-question measure of readiness to change certain behaviours at the end of each of the four MET groups. At the six-week follow-up assessment, a selection of the initial questionnaires was re-administered (see Table 4.1). Copies of all questionnaires can be found in Appendix C.

Table 4.1.
List of questionnaires administered at each assessment point.

Assessment measures	Assessment occasions			
	Pre treatment	Weekly	Post treatment	6 week Follow up
Demographics				
Demographic questionnaire	X			
Motivational Measures				
Anorexia Nervosa Stages of Change Questionnaire	X		X	X
(ANSOCQ)	X		X	X
Decisional Balance Scale for anorexia (DBS)	X		X	X
Self Efficacy Scale		X*		
Motivational scales				
Treatment engagement rating scales	X		X	
Eating Disorder Symptomatology				
Eating Disorder Inventory II (EDI-II)	X		X	X
Eating Disorders Examination – Questionnaire (EDE-Q)	X		X	X
General Psychopathology				
Beck Depression Inventory II (BDI-II)	X		X	

* Only administered to the MET group

4.5 Assessment Measures

4.5.1 Motivational scales and associated constructs

Anorexia Nervosa Stages of Change Questionnaire (ANSOCQ; Rieger et al., 2000)

The ANSOCQ is a 20-item self-report measure assessing a broad range of anorexic symptomatology including eating behaviours, aspects of weight, emotional difficulties, weight control methods and interpersonal difficulties. Each item refers to a certain symptom and item structure is related to the stages of change model. That is, each item contains five statements corresponding to the stages of precontemplation, contemplation, preparation, action and maintenance, respectively.

The ANSOCQ demonstrated good internal consistency (Cronbach's alpha = .90; .94) and one week test-retest reliability (r = 0.89; r = 0.90) in two respective samples of adult (Rieger et al., 2000) and adolescent patients with AN (Serrano, Castro, Ametller, Martinez & Toro, 2004). Significant relationships between the ANSOCQ and other instruments assessing motivation to change support the concurrent validity of the questionnaire and results on the ANSOCQ predict the amount of weight gain during treatment (Rieger, 2000), and the need for hospital admission in adolescents (Ametller, Castro, Serrano, Martinez, & Toro, 2005).

On commencement of the study, no corresponding stage of change questionnaire existed for BN[2]. As such, the current study utilized a modified ANSOCQ for those participants with BN, or those EDNOS patients within the normal weight range. The changes reduced the questionnaire to only 15 items as five items relating to weight gain (questions 1, 2, 4, 5, and 10) were removed. In order to calculate a total ANSOCQ score for these patients, the missing five item scores were replaced with the participant's average score on the remaining 15 items. These changes were made in consultation with the senior author who designed the ANSOCQ.

It would have been possible to administer the ANSOCQ in total to all participants, and to merely discount questions relating to weight gain in healthy or overweight participants. However, this may have alienated some participants for whom weight restoration was not necessary, by suggesting that the researcher did not understand their particular circumstances. This would have been in direct opposition to the spirit of a motivational approach, in which the clinician attempts to convey an interest and compassion for each client's individual struggle.

Decisional Balance Scale for Anorexia (DB; Cockell, Geller, & Linden, 2002)

The Decisional Balance construct reflects the individual's relative weighing of the pros and cons of changing. The Decisional Balance Scale for Anorexia is a 30 item self-report questionnaire to assess a client's perceived positive and negative aspects of AN. The three subscales are the Burdens scale which consists of 15 items relating to

the negative consequences of AN (e.g. loss of energy, social isolation). The 8 item Benefits scale relates to positive aspects of AN including being very thin and self control. The third subscale, Functional Avoidance, consists of 7 items referring to the use of AN as a method to avoid challenges, negative emotions, and responsibilities. Items are rated on a 5-point Likert scale from 1 (not at all true) to 5 (completely true). The DB exhibits sound internal consistency (Cronbach's alpha = 0.88), one-week test-retest reliability for each subscale, and good convergent and divergent validities.

A pattern has been observed of how the Pros and Cons relate to the stages of change across a range of problem behaviours (Prochaska, et al. 1994). Cockell and colleagues (Cockell, Geller, & Linden, 2003) reported that patients classified as being in differing stages of readiness to recover from their eating disorder responded with a different pattern of results, whilst those in the same stage responded similarly. Individuals in precontemplation reported fewer Burdens than those in contemplation and action stages. Thus, an increase in motivation to recover is associated with increased knowledge or insight into the burden of the illness. Those participants in precontemplation also reported lower Functional Avoidance than their counterparts in contemplation and action. Thus insight into how AN provides a means of avoiding adverse experiences is higher in those individuals who are considering change and/or undertaking change than in those who are not interested in recovery. There were no significant differences across stages on the Benefits subscale. The authors suggested that perhaps a reduction in perceived benefits occurs only after significant behavioural change, and is therefore unlikely to be seen across the early stages of change.

At the commencement of the current study, no decisional balance scale for BN was available. Hence, some items on the DB for AN were deleted to make it relevant to a BN population and the instructions were changed to refer to BN, not AN. The removed items, which were all from the Benefits subscale were: 'being a very low weight makes me feel confident', 'being a very low weight makes me feel good about myself', and 'being thinner than others makes me feel good about myself'. For these participants, the average score on the completed Benefits subscale items was

[2] Recent attempts, subsequent to the commencement of the current study, have been made to develop a version of the ANSOCQ for BN (Martinez et al., in press).

substituted for these missing items. These changes were made with the approval of the senior author of the DB scale.

Self-Efficacy Scale for Anorexia Nervosa (Rieger et al., 2002)

The Self-efficacy construct in this field represents the confidence that people have that they can change their unhealthy behaviours. According to Rollnick (1998), higher levels of self-efficacy are associated with increased motivation for change.

The Self Efficacy scale utilised in the current study was that developed by Rieger and others (2002), according to guidelines proposed by Bandura (1997) and on the structure of other instruments measuring self-efficacy in other disorders. The questions on this scale corresponded to the items on the ANSOCQ, but rather than assessing the participant's readiness to change a certain behaviour, the Self Efficacy scale examines the strength of one's belief that they could successfully do a given task. For example, item 5 states " I can reduce my fear of becoming or being fat". In the current study, Rieger's version was manipulated so that it was applicable to all eating disorder sufferers, not just those with AN. Thus item 1 on the original, "I can gain weight", became "I can achieve (if over/underweight) or maintain (if currently normal weight) a healthy weight". For each of the 17 items on the current scale, individuals were required to report the strength of their belief using a 10-point Likert scale where "1" corresponded to "Not at all confident" and "10" was labelled "very confident". The SES exhibits a high positive correlation with the ANSOCQ (r = 0.85; Rieger et al., 2002), suggesting that higher levels of self-efficacy as measured by this scale are related to higher levels of readiness to recover.

Contemplation Ladders (Rieger et al., 2000)

Three contemplation ladders consisting of a pictorial representation of increasing levels of motivation to change behaviours were administered at the end of each MET group session. These were developed by Rieger and collaborators (2000) and were modifications of those developed by Biener and Abrams (1991). The ladders correlate significantly with the total scores on the ANSOCQ (r = 0.70 – 0.77; Rieger et al., 2000). The three ladders administered during the current intervention referred to

readiness to adhere to an eating plan consisting of three standard meals and several snacks each day, to eat avoided foods in moderation, and to stop the use of weight control methods. Participants circled a number from 0-10 where 0 referred to "no intention" of undertaking the targeted behaviour and 10 referred to "taking action" to undertake this behaviour.

Treatment Engagement questionnaire (Rieger et al., 2000)

The Treatment Engagement questionnaire was developed by Rieger and colleagues (2000) to capture the degree to which participants were interested in taking part in aspects of the hospital treatment program. Five scales ranging from 0 (not at all interested) to 10 (extremely interested) assessed interest in obtaining feedback from medical tests, participating in therapy groups, having individual therapy sessions with clinicians, having individual sessions with a dietician, and the extent to which participants ate meals for themselves or for others. These scales have been found to be significantly positively correlated to the ANSOCQ (r = 0.36 - 0.73; Rieger et al., 2000).

4.5.2 Eating disorder behaviour and psychopathology

Eating Disorder Inventory 2 (EDI-2; Garner, 1991)

This widely used self-report measure assesses a number of psychological and behavioural traits common in eating disorders (Garner, Olmsted & Polivy, 1983). This measure yields 11 subscales, and higher scores reflect greater levels of pathology. The subscales are: "Drive for Thinness" which assesses concern with dieting and weight; "Bulimia", assessing tendencies to consider and engage in bingeing; "Body Dissatisfaction", "Ineffectiveness", which measures beliefs including inadequacy and worthlessness; "Perfectionism"; "Interpersonal Distrust", assessing one's reluctance to form close relationships; "Interoceptive Awareness" which measures difficulties in recognising and responding to emotional states; "Maturity Fears" which assesses the desire to retreat to the securities of childhood; "Asceticism", a scale tapping the pursuit of self-sacrifice, self-denial and restraint;

"Impulse Regulation"; and "Social Insecurity", which measures the belief that relationships are generally poor.

Items are presented in a 6-point, forced choice format in which respondents rate whether the item applies "always", "usually", "often", "sometimes", "rarely", or "never". The reliability (internal consistency [α = 0.83-0.93] and one week test-retest reliability [α = 0.67 – 0.85]) and validity (content, construct, concurrent validity and discriminant validity) of the EDI have been demonstrated (Garner, Olmsted & Polivy, 1983).

The EDI-2 was included in the current study in order to gain a wide assessment of eating disorder psychopathology. Given that some of the subscales, particularly "Drive for Thinness", "Body Dissatisfaction", "Ineffectiveness", "Perfectionism", and "Interpersonal Distrust", have been described as capturing relatively enduring traits (Garner, 1991), the changes on these scales are likely to be minor.

Eating Disorders Examination Questionnaire (EDE-Q; Fairburn & Beglin, 1994)

The EDE-Q, a 36-item self-report questionnaire version of the EDE interview (Fairburn & Beglin, 1994), was included in the current study as a means of obtaining information regarding eating disorder symptomatology. The EDE-Q consists of four subscales (Shape Concern, Weight Concern, Dietary Restraint, and Eating Concern) using a seven-point forced choice format. These subscales exhibit sound test-retest reliability over two weeks with coefficients ranging from 0.81 to 0.94 (Luce & Crowther, 1999). It also contains items to assess the frequency of important behaviours including binge eating and the use of extreme methods of weight control in terms of the number of days on which the behaviours occurred and the number of episodes. The questionnaire asks respondents to reply in reference to the past 28 days. The self report version of the EDE appeared to be an adequate substitute for the interview in that it generally exhibits good convergent validity with the EDE (Fairburn & Beglin, 1994). However, on more complex behaviours such as binge eating and concerns about shape, the EDE-Q often generates higher scores than the EDE, and may not be as adequate a measure for these symptoms. The EDE-Q requires a lower subject and clinician time burden than the EDE, so these limitations

in the questionnaire were overcome by the use of the participants' inpatient medical files of as a cross-reference for bingeing behaviours.

4.5.3 Other psychopathology

Beck Depression Inventory II (BDI-II; Beck, Steer & Brown, 1996)

The BDI-II is a widely used 21-item self-report questionnaire of depressive symptoms and attitudes experienced over the preceding 2 weeks. It was originally developed by Beck based on clinical observations and descriptions of symptoms given by people with depression (Beck & Steer, 1993). Each item is rated on a 0-3 scale in terms of intensity and the overall score measures the severity of depressive symptomatology. The BDI has been shown to have high levels of internal consistency, test-retest reliability, discriminant validity, and convergent validity (Beck, Steer, & Garbin, 1988; Beck, 1967; Schwab, Bialow & Holzer, 1967).

The BDI-II was included in the current study as depressive symptomatology is associated with a sense of hopelessness regarding the possibility of change and may be related to poorer levels of motivation to recover (Rieger et al., 2000), thus confounding the results of the current motivational intervention for eating disorders.

4.5.4 Demographic Information

The demographic information obtained from medical files and the demographic questionnaire included the following: age, marital status, education, diagnostic profile, and previous treatment for an eating disorder.

4.6 The Motivational Enhancement Therapy Intervention

4.6.1 General development and background to the MET intervention

The four session MET intervention was developed specifically for the current project. It was based on interventions and techniques developed for use in the eating disorders

and addiction fields. The basic structure was grounded in the intervention developed by Feld and collaborators (2001); however, changes were made to make it more relevant to the inpatient population (e.g. increases in motivation expressed by patients were linked to the opportunity to make behavioural changes within the unit). Additional Motivational Interviewing techniques from experts in the field were incorporated into the package. The manual was distributed to four clinical psychologists who have specialised in the field of eating disorders and who are very familiar with motivational interventions, namely S. Touyz, C. Thornton, E. Rieger, and L. George, who provided feedback. The four groups were then run within the inpatient and day patient programs by the author, in order to ensure that the groups flowed logically and that time restraints were adhered to. Only minor adjustments were made to the original manual following this review process. A copy of the final manual used in the current study is located in Appendix D.

The MET groups were held weekly following morning tea and lasted approximately 1.25 hours each. The four groups were open, with new participants entering each week as they entered the hospital program and consented to the study. Accordingly the groups were designed to stand-alone and to be implemented in any order.

Only four groups were used to ensure that patients who entered the sessions could complete all groups prior to their discharge from the hospital, as the usual minimum time for admission is 4 to 6 weeks. Additionally, the use of four groups allowed for a comparison with Feld et al. (2001) who used four groups in an outpatient setting with some promising results. The use of four sessions was additionally supported by research in the addictions field, which found that four sessions of MET was comparable to 12 sessions of cognitive-behavioural therapy or a 12-step facilitation therapy approach to treatment for alcohol abuse (Project MATCH, 1997).

Furthermore, the intervention was designed to encourage participants to engage in the standard hospital program, acting as both a preliminary and concurrent motivational tool. Thus participants were being asked to take action in the hospital program, whilst concurrently examining their intrinsic motivation to change within the treatment groups. The concurrent nature of the intervention and the general hospital program allowed for an immediacy of practice if a participant decided to make behavioural

changes. Vitousek and colleagues (1998) argued that ambivalence can be best resolved through direct experience, and the design of the current project allowed for this to occur.

4.6.2 Overview of the MET group therapy sessions

The groups were designed to address factors related to the earlier stages of change from the Transtheoretical Model (Prochaska & DiClemente, 1992), that is, precontemplation and contemplation, with the aim of moving participants towards action in regards to overcoming their eating disorder. In order to achieve this, the processes of change employed had a predominantly cognitive focus, as it is not until the later stages of change, namely action and maintenance, that behavioural changes become predominant (Prochaska, DiClemente & Norcross, 1992). The specific cognitive processes used in the current groups were consciousness raising, self-re-evaluation and self-liberation. The main aim of the groups was to address ambivalence about recovery and change. Whilst no behavioural changes were insisted upon within the MET groups, the nature of the inpatient unit meant that participants were concurrently engaging in much behaviour change.

In addition to the particular strategies outlined in Section 4.6.3 below, the MET intervention relied on specific therapeutic principles, which guided the therapist's behaviour at all times, including during the assessment, treatment and in any written correspondence. Miller and Rollnick (2002) described the fundamentals of the motivational approach as incorporating a collaborative partnership between the therapist and client; eliciting motivation from within the client (as opposed to attempting to instil motivation); and affirming the client's right to autonomy. The authors also described the four broad principles that underlie such a method. These are the expression of empathy and acceptance through the skilled use of reflective listening, the ability to avoid argumentation and instead reframe patients' statements in the direction of change (i.e. "rolling with resistance"), the need to support the patient's self-efficacy or hope, and the fostering of a sense of inconsistency between the patient's present behaviour and their general goals and self-concept.

Treasure and Ward (1997) in their paper about the implementation of motivational interviewing in the AN population provided a number of therapeutic guidelines described in Table 4.2. The current program aimed to adhere to these guidelines within the group setting.

Table 4.2.
Guidelines for the implementation of motivational interviewing (adapted from Treasure & Ward, 1997, p. 104).

DO	DON'T
1. Let patients present the argument for change	15. Argue, lecture or persuade with logic
2. Start with the patient's (not the therapist's) concerns	16. Assume an authoritarian or expert role
3. Focus on eliciting patient's concerns	17. Give expert advice at the beginning
4. Use open ended questions	18. Order, warn or direct
5. Emphasise personal choice and responsibility	19. Do most of the talking
6. Negotiate goals and strategies	20. Get into debates or struggles
7. Explore and reflect the patient's perceptions	21. Make moral judgements, preach or criticize
8. Use empathetic listening selectively	22. Ask closed ended questions
9. Reflect feelings, concerns and self motivational statements	23. Ask a series of questions in a row
10. Reflect by paraphrasing and summarizing	24. Tell the patient that s/he has a problem
11. Reflect statements, rather than questions, starting with 'you' as the subject	25. Prescribe solutions or a certain course of action
12. Make a short summary of sessions at the beginning and at the end	
13. Offer advice and feedback as appropriate	
14. Use affirmation and positive restructuring of the patient's statements to improve self esteem and self efficacy	

4.6.3 Contents of the four MET sessions

A summary of the specific tasks of each of the four therapy sessions is presented in Table 4.3.

Table 4.3.
Summary of the four MET sessions implemented in the current study.

Session A	▪ Discussion of the transtheoretical model ▪ Homework: Exercise reflecting on how they have changed in the past
Session B	▪ Values exploration task ▪ Decisional balance exercise about the eating disorder ▪ Homework: expand upon decisional balance exercise ▪ through the writing of letters
Session C	▪ "Chairs" exercise ▪ "Looking forward" exercise ▪ Homework: expand upon exercise through writing a letter to a close friend about the future
Session D	▪ Decisional Balance task about change ▪ Group discussion of fears about change and fears of staying the same. ▪ Exploration of willingness and confidence to overcome the eating disorder ▪ Homework: Death bed question

The purposes of session A were to normalise the ambivalence that eating disorder patients feel towards recovery and to increase self-efficacy, particularly amongst those who have relapsed in the past, through an understanding that change is a circular process. The discussion focused on the transtheoretical model of change initially developed by Prochaska and DiClemente (1982) to account for the processes of change that occurred during smoking cessation. The authors expanded the model to describe how individuals alter problem behaviours of any kind, both within and outside formal treatment (DiClemente & Prochaska, 1998). According to the model, individuals cycle through a series of discrete stages during the course of change. Six stages have been described: precontemplation (not thinking about change), contemplation (thinking about the possibility of change), preparation (getting ready for behavioural change), action (behavioural change), maintenance (working to sustain the behavioural changes that have been achieved), and termination (when the changes are fully incorporated into one's life). This session explained the stages of change model through discussion and clinical vignettes and established the patients'

stages of change for various eating disordered behaviours. The possibility of being in different stages of change for different behaviours was discussed. An examination of a problematic behaviour that one had successfully changed in the past was undertaken in an attempt to enhance self-efficacy. Each session finished with a discussion of the homework exercise that built upon the session topic. In the spirit of motivational interviewing, which respects the autonomy of the patient, these exercises were not compulsory, but were encouraged. In this session, the homework exercise consisted of a further examination of each patient's current attitude towards recovery.

The structure of Session B encouraged a group decisional balance exercise through discussion of the benefits and costs of maintaining versus relinquishing one's eating disorder (Schmidt & Treasure, 1997) in an attempt to shift the balance in the direction of change (i.e. whereby the disadvantages of the disorder come to outweigh the perceived advantages). The therapist introduced the decisional balance exercise by proposing that there are some things that the eating disorder actually helps. The functional nature of the disorder was discussed with reference to a range of aspects including managing one's emotions, enhancing self worth, and gaining a sense of control. For example, the eating disorder may function as a suppressor of negative emotions, as a way of keeping intimate relationships at bay, and as a method for enhancing self-esteem through a sense of accomplishment. Following a summary of the functions, a discussion about the disadvantages (introduced as the "not so good things") of the eating disorder was conducted and patients were encouraged to specifically describe events that were negatively affected by the presence of the illness e.g. having to miss their school dance, or feeling disconnected from their friends. Patients were then asked to consider the "package deal" of the eating disorder, that is, that the disadvantages and advantages are intrinsically linked such that any perceived benefits will be obtained at a cost.

Again in an attempt to shift the balance in the direction of change, the second aim of Session B was to foster an awareness of the incompatibility between current eating disordered behaviour and more deeply held values. This was undertaken via a card-sorting task adapted from Feld and colleagues (2001). Patients were asked to write their life's goals and strongly held values on coloured cards and arrange them in order of importance. Patients were then asked to write down the function/s of the eating

disorder on another card and instructed to place this amongst the other cards in order of importance. The goal of this session was to determine if the participants' life goals are congruent with having an eating disorder and a group discussion was undertaken about their current value-behaviour consistency (i.e. the patients' evaluations about the role that the eating disorder plays in achieving and/or preventing value-behaviour consistency). The homework exercise consisted of a letter-writing task about the affect of the eating disorder on one's life. This involved writing a letter to the eating disorder as a "friend" and a second letter to the disorder as an "enemy", as described in Schmidt and Treasure (1997). This exercise served the dual purpose of further enhancing awareness about the benefits and costs of the eating disorder as well as separating the disorder from oneself.

Session C commenced with an exercise adapted from Farrell (2001) which aimed to explore the origins of the eating disorder behaviour, its past history, its current state and likely future presentation. The aims of this were to gain perspective and to promote an examination into what the eating disorder had stolen from the individual's life to further tip the balance towards the burden, rather than the benefits, of the illness. This practical task involved asking a volunteer to sit in a chair placed in front of the group, which represented the "present". Their understanding of their current situation was elicited through motivational interviewing strategies and group members' input. A second chair was placed alongside the first and the volunteer was invited to move to this chair which represented the "past" prior to the eating disorder becoming part of their life. The differences between the "past" and the "present" were highlighted through discussion. Finally, the volunteer was invited to move to a third chair, the "future". They could choose to discuss this in terms of life with or without the eating disorder. Following a facilitated discussion, they were then asked to consider an alternative future (i.e. life with or without the eating disorder). Participants were asked to speak in the present tense and the physicality of the approach appeared to aid perspective. The session finished with a visualisation task in which patients were guided to visualise their life in 12 months' time, focusing on an area that they would like to change. The homework task focused on patients' goals and current barriers to their fruition, and encouraged problem solving around these difficulties.

Session D included a group exercise about the advantages and disadvantages of recovery, again in an attempt to shift the balance towards change. The discussion examined practical losses and gains for oneself, practical losses and gains for others, self-approval and disapproval, and social approval and disapproval (for details see Schmidt & Treasure, 1997). Finally, patients were asked for their perspectives and comments on the following issue: "If you were on your death bed thinking about your life, what experiences do you think would stick out as most meaningful to you? Is your eating disorder involved in these experiences?" (Geller, Williams, & Srikameswaran, 2001). This exercise aimed to encourage patients to view their life as a whole, rather than through the filter of the eating disorder, in order to begin to question the impact that the eating disorder was had.

4.7 Statistical Analyses

4.7.1 Data Screening

All statistical analyses were performed using SPSS for Windows (Version 12.0.1). Prior to the analysis, the data were thoroughly screened for accuracy and the presence of missing data. Missing data were replaced with the mean score for the specific subscale.

4.7.2 Statistical Tests

Socio-demographic characteristics were analysed using independent samples *t*-tests for continuous data and chi-square tests for dichotomous data to determine if there were any significant pre-treatment differences between patients in the MET group and the TAU group. To further ensure the initial comparability of the participants in the treatment conditions, independent samples *t*-tests were conducted on the participants' pretreatment scores for all formal assessment measures. Analyses were also undertaken to compare the patients who completed the study to those who did not. Throughout the analyses for the current study corrections were used when the assumptions necessary for running the analyses were violated (e.g. Fisher's exact test where expected cell numbers were small in the χ^2 analyses).

The aim of the treatment outcome data analyses was twofold. Firstly, an examination of the changes in the dependent variables (ANSOCQ, contemplation ladders, SES, BDI-II, DBS, EDE-Q, & EDI-II) over time (i.e., before the intervention compared with after the intervention and at the six week follow up) across the entire sample was undertaken in order to determine any immediate benefits of a brief hospitalization. Most of the data were analyzed via a series of paired samples *t*-tests, between pre and post data to examine the changes over the hospital stay, and between post and follow-up data to ascertain the stability of any earlier changes, and/or the development of any changes over this period. For completeness, differences between the pre-treatment and follow-up data were also considered.

Secondly, an examination of any group differences between the MET sample and the TAU sample over the course of the intervention was undertaken. These data were analyzed using independent samples *t*-tests on the difference scores (i.e. post-treatment minus pre-treatment difference, then 6 week follow-up minus post-treatment difference, for each scale).

This two-step approach was chosen over repeated measures Analysis of Variance (ANOVA) with contrasts, so that the focus was initially only on the overall hospital outcome, with the subsequent group comparison providing data to answer the question of whether MET can enhance the standard treatment outcome.

The data from the Contemplation ladders, completed only by the MET cohort in order to measure treatment process, were analyzed using a one-way repeated measures ANOVA since these data were collected during each session of the MET group. Changes in BMI over the course of the intervention were also assessed via repeated measures ANOVA. Where Mauchley's test of sphericity was significant, the Greenhouse-Geisser Epsilon correction was used. A significance level of $\alpha = 0.05$ was chosen for all analyses.

Chapter 5
Characteristics of the Sample

This chapter provides details about the participant recruitment for the current study as well as descriptions of the sample prior to the intervention. Scores on all measures as well as demographic characteristics are reported.

5.1 Recruitment

Forty-two participants were recruited for the current study. This represents 67% of the 63 patients who met inclusionary criteria and who were thus approached to take part. Refusal rates for both the active treatment component of the research and the control condition were comparable. Reasons given for not consenting included unwillingness to complete the questionnaires (n = 7), a dislike of group treatment (n = 3), and unwillingness to participate in research (n = 11). Of the patients recruited for the entirety of the study, 23 entered the MET intervention and 19 participants entered the TAU arm.

5.2 Pre-treatment characteristics of the sample

All 42 female patients met DSM-IV (APA, 2000) criteria for an eating disorder: 21 (50%) for AN (15 for restricting subtype and six for purging subtype); 1 (2%) for BN; and 20 (48%) for EDNOS. Of those patients best classified as EDNOS, three (15%) presented with subclinical BN, and 17 (85%) with subclinical AN. Diagnoses were made by experienced psychiatrists within the unit and symptoms reported in the medical files were independently checked against diagnostic criteria by the investigator. All of the 42 patients were engaged in food restriction, 10 (24%) reported a history of bingeing, 24 (57%) reported engaging in self induced vomiting, and 4 (10%) revealed laxative abuse. The mean (± sd) estimated eating disorder duration was 64 months (± 64 months). The range was from a minimum of 6 months to a maximum of 240 months. Seventy percent of participants reported at least one prior inpatient admission to an eating disorder unit. The mean (± sd) number of previous admissions was 2.1 (± 2.9) with the range from 0 to 12 separate admissions. At pre-treatment the mean (± sd) body mass index (BMI in kg/m^2) for participants

with AN (n = 21) was 14.12 (± 1.34), and 17.57 (± 2.41) for the remainder of the participants (n = 21). Across the entire sample, the minimum BMI was 12.13 kg/m^2 and the maximum was 24.2 kg/m^2. The mean age of participants was 22.4 years (±7.37), with an age range of 14 - 44 years old.

Due to the nature of the inpatient unit, a number of participants exhibited other psychiatric comorbidities. According to the treating psychiatrists' reports, on admission to the unit, 16 (38%) patients met criteria for a major depressive episode, with a further six (14%) exhibiting depressive symptomatology in the subclinical range. Six (14%) displayed symptoms consistent with an anxiety disorder[3]. Other diagnoses, each of which were made for only one participant, were obsessive compulsive personality disorder, attention deficit hyperactivity disorder (inattention subtype), alcohol dependence (in withdrawal), and a history of drug induced psychosis.

The majority of participants were current students (30/42 [71%]), with the remaining participants having completed tertiary (7/42 [17%]) or other post high school education (e.g. TAFE; 5/42 [12%]). Most participants classified themselves as being single (29/42 [69%]).

Initial average scores on the EDI-2, EDE-Q, and the BDI-2 were similar to those in comparable samples of inpatient eating disorder sufferers (e.g. Treat et al, 2002; Pike, 2000; Howard et al., 1999). The pre-treatment average score on the ANSOCQ was similar to that reported by Rieger, Touyz & Beumont (2002) within an inpatient sample, and the DB means were comparable to those reported by Cockell, Geller and Linden (2002).

[3] This number is likely to be an underestimate of the occurrence of anxiety disorders amongst the group. It is taken from the treating psychiatrist's impression on intake, where the focus of assessment tends to be on specifying the type of eating disorder present and screening for depression, self-harm and suicidality. Preliminary results from a current study within the same hospital eating disorder unit examining the co-occurrence of anxiety disorders and eating disorders indicate that up to 85% of inpatients meet criteria for at least one anxiety disorder according to the Anxiety Disorders Interview Schedule (ADIS; Brown, DiNardo & Barlow, 1994) (J. Swinbourne, personal communication, July 2006).

5.3 Comparison of the groups at pre-treatment

Pearson's Chi-square tests and unpaired *t* - tests were conducted to examine any pre-treatment group differences between the MET group and the TAU group. The data, presented in Table 5.1, show that there were no pre-treatment differences between the MET and TAU groups where $N = 42$ ($p < 0.05$) for age, BMI, illness duration, number of previous inpatient admissions, nor for the presence of bingeing, self induced vomiting, and laxative abuse. Those in the standard treatment condition were significantly more educated than those in the MET group ($t(40)= -2.412$, $p = 0.021$).

Due to power considerations, marital status was recoded as a dichotomous variable (single or partnered) for the Pearson's Chi-square analysis. There was no significant difference in relationship status between the MET and TAU groups. No statistical analyses were undertaken for the diagnoses of each group due to limited power, but the numbers of participants fitting each diagnostic category is shown in Table 5.2, suggesting that the TAU group had a greater proportion of participants with bulimia like symptoms than did the MET group.

Table 5.1.
Comparison of MET and TAU groups on demographic characteristics at pre-treatment assessment.

	Mean (± s.d.)		t	Sig.
	MET (n = 23)	TAU (n = 19)		(2 tailed)
Characteristic				
Age (years)	21.30(7.9)	23.84(6.6)	-1.114	0.272
BMI (kgm^{-2})	15.27(2.0)	16.55(3.1)	-1.623	0.112
Education (years)	11.48 (1.8)	12.89 (2.0)	-2.412	0.021*
Duration of illness (months)	54.70(61.9)	73.37(64.8)	-0.952	0.347
No. previous admissions	1.65(2.9)	2.63(2.8)	-1.118	0.270
	χ^2 value		df	Sig. (2 tailed)
Presence of bingeing	1.265		1	0.261
Presence of vomiting	0.513		1	0.474
Presence of laxative abuse[a]	0.040		1	1.000
Marital status[a]	1.155		1	0.468

[a] Some cells had an expected count less than 5, so an Fisher's exact significance test was selected.
*Significant at $p<0.05$

Table 5.2.
Numbers (and percentages) of participants per eating disorder diagnosis for the MET and TAU groups at pre-treatment.

	MET group (n = 23)	TAU group (n = 19)
Diagnosis		
Anorexia nervosa		
Restriction subtype	10 (43%)	5 (26%)
Binge / purge subtype	2 (9%)	4 (22%)
Bulimia nervosa	0 (0%)	1 (5%)
Eating disorder not otherwise specified		
Subclinical bulimia nervosa	10 (43%)	7 (37%)
Subclinical anorexia nervosa	1 (4%)	2 (11%)

The results of independent samples t-tests comparing the initial mean scores on all questionnaires for the MET and TAU groups (presented in Table 5.3) suggest that the scores were comparable on all measures (i.e. EDI-2, EDE-Q, BDI-2, ANSOCQ, DBS, SES, Treatment Engagement Rating scale), except for two subscales of the EDI-2. Specifically, on average the participants in the TAU group reported higher levels of perfectionism and a greater desire to retreat to the securities of childhood, than did the MET group (Perfectionism subscale: t(39) = -2.052, p = 0.047; Maturity fears subscale: t(23.7) = -2.710, p = 0.019 [with equal variances not assumed], respectively).

Table 5.3.
Results of independent samples t-tests for the pre-treatment mean scores for all questionnaires between the MET (n = 23) and TAU (n = 19) groups.

	MET group Pre-treatment M(SD)	TAU group Pre-treatment M(SD)	t	df	Sig. (2-tailed)
Outcome measure					
EDE-Q					
Restraint	4.19(1.63)	4.00(1.80)	0.720	40	0.191
Eating concern	3.51(1.20)	3.93(1.70)	-0.923	40	0.362
Weight concern	4.12(1.46)	4.45(1.58)	-0.694	40	0.492
Shape concern	4.72(1.29)	4.83(1.32)	-0.255	40	0.800
EDI-2					
Drive for Thinness	13.43(6.41)	15.36(5.70)	-1.002	39	0.323
Bulimia	3.39(5.55)	5.94(6.93)	-1.311	39	0.198
Body Dissatisfaction	15.39(7.81)	19.31(7.27)	-1.640	39	0.109
Ineffectiveness	13.13(9.50)	16.67(7.73)	-1.281	39	0.208
Perfectionism	7.39(4.99)	10.61(4.98)	-2.052	39	0.047*
Interpersonal Dist	5.57(3.27)	6.06(3.76)	-0.446	39	0.658
Interoceptive Aware	11.61(7.12)	15.56(7.48)	-1.723	39	0.093
Maturity Fears	4.70(3.99)	9.83(7.91)	-2.710	23.7	0.019[a]*
Asceticism	8.00(3.42)	10.28(6.62)	-1.327	24.0	0.197[a]

Table 5.3 continued

Impulse Regulation	8.26(6.38)	9.61(7.74)	-0.612	39	0.544
Social Insecurity	9.09(4.33)	10.44(4.60)	-0.969	39	0.338
ANSOCQ total score	50.13(16.37)	50.57(14.31)	-0.091	40	0.928
DB					
Burdens	3.59(0.88)	3.87(0.59)	-1.245	38.6	0.237[a]
Benefits	3.29(1.06)	3.43(1.14)	-0.406	40	0.687
Avoidance	2.89(1.16)	3.45(1.08)	-1.590	40	0.120
SES total score	84.22(37.94)	91.13(34.64)	-0.611	40	0.545
TERS total score	35.17(9.99)	35.11(7.98)	0.024	40	0.981

[a] Levene's test for equality of variances was significant, so equal variances were not assumed

* Significant at $p < 0.05$ level

5.4 Patient attrition

Three of the 23 participants in the MET condition did not complete the four sessions as they were discharged from hospital, to the day patient program, in line with medical advice. Additionally, post-treatment data was not returned by another participant, leaving a total of 19 (83% of the initial sample) in the MET post-treatment sample. Seventeen of these participants completed the follow up measures (74% of the initial group).

Sixteen of the 19 patients in the TAU group (84% of initial sample) completed post treatment data following four weeks of standard inpatient treatment. Two of the three participants that dropped out of the study discharged themselves from hospital against medical advice, and one believed that the questionnaires were not relevant for her, as she denied the presence of any eating disorder. Six week follow-up data were received from 11 (58% of the initial sample) of the TAU participants. Figure 5.1 provides a flow chart of participant involvement.

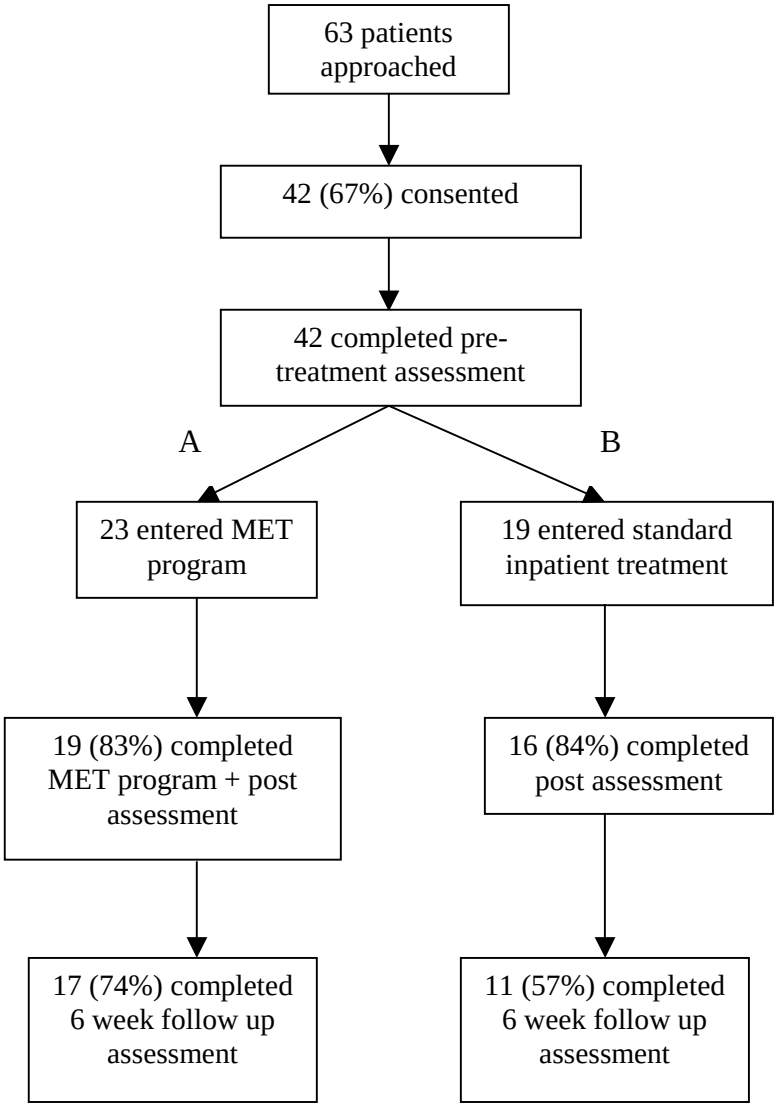

Figure 5.1. Recruitment and attrition of the study sample.

NOTE: Arm 'A' was completed prior to Arm 'B' commencing

5.5 Differences at pre-treatment between completers and non-completers

A Pearson's Chi-square analysis was conducted to determine any difference in the relative numbers of treatment completers to non-completers at post assessment and at follow-up between the MET and TAU conditions. Seventeen percent of the initial sample in the MET group (4/23) did not complete the post-treatment assessment. This is comparable with the 16% (3/19) of dropouts at post-treatment assessment in the TAU condition ($\chi^2 = 0.019$, $df = 1$, Fisher's exact $p = 1$). The numbers of dropouts

at follow-up are also comparable, with six participants in the MET group and eight in the TAU condition dropping out at this final stage (χ^2 = 1.201, *df* = 1, *p* = 0.273).

There were no significant differences between completers and non-completers for the MET group at post-treatment, nor at follow-up. For the TAU group, there were significant pre-treatment differences between those who completed the post-treatment assessment (*n* = 16) and those who did not (*n* = 3). Drop-outs at post-treatment exhibited lower Drive for Thinness (*t*(16) = 4.269, *p*<0.001), and Bulimia subscale scores (*t*(15) = 3.815, *p* = 0.002) from the EDI-2; reduced Restraint over eating (*t*(17) = 3.450, *p* = 0.003), and Eating concerns (*t*(17) = 4.436, *p* <0.001) (from the EDE-Q), and fewer perceived benefits of the illness (*t*(17) = 2.454, *p* <0.025; from the DB scale) at the pre-treatment assessment compared with completers. There were no significant differences between participants in the TAU group who completed the follow-up assessment (*n* = 11) and those who did not (*n* = 5).

Pearson's Chi-square tests and independent samples *t*-tests were conducted to examine any pre-treatment demographic differences between treatment completers and non-completers in the total sample (see Tables 5.4 and 5.5). Dropouts at post-treatment (*n* = 7), and at the six-week follow-up (*n*= 14) were comparable to completers in regards to a history of bingeing, laxative abuse, and vomiting. They were of similar marital status and eating disorder diagnoses. There were no significant differences between completers and dropouts at either time point for age, years of education, initial BMI, estimated illness duration, nor for the number of previous eating disorder hospital admissions.

Table 5.4.
Differences in pre-treatment dichotomous demographic and diagnostic characteristics between completers and non-completers at post-treatment and follow-up.

	Post-treatment non-completers (n=7) vs completers (n=35)			Follow-up non-completers (n=14) vs completers (n=28)		
	χ^2 value	df	Sig. (2-sided)	χ^2 value	df	Sig. (2-sided)
Characteristic						
Bingeing	2.019	1	0.222[a]	0.202	1	0.742
Vomiting	2.088	1	0.118[a]	0.438	1	0.742
Laxative abuse	0.884	1	1.000[a]	0.138	1	1.000[a]
Marital status	0.105	1	0.539[a]	0.263	1	0.707[a]

[a] Some cells had an expected count of less than 5, so a Fisher's exact significance test was selected.

Table 5.5.
Differences in pre-treatment continuous variables between completers, and non-completers at post-treatment and follow-up.

	Post			Follow-up		
	Noncompleter (n = 7) M(SD)	Completer (n =35) M(SD)	t	Noncompleter (n = 14) M(SD)	Completer (n = 28) M(SD)	t
Characteristic						
Age	26.4(11.1)	21.7(6.3)	-1.01[a]	25.6(9.2)	20.9(5.8)	1.78[a]
Education	12.3(2.1)	12.1(2.0)	-0.24	12.5(1.9)	11.9(2.1)	0.87
Initial BMI	15.9(1.7)	15.8(2.8)	-0.04	16.1(3.1)	15.7(2.4)	0.47
Illness duration	75.9(93.5)	60.6(56.8)	-0.42[a]	74.6(75.1)	57.4(56.9)	0.83
Previous admissions	0.7(1.0)	2.4(3.0)	1.43	1.8(2.7)	2.2(2.9)	-0.50
Subscale						
ANSOCQ	59.5(19.0)	48.5(14.1)	-1.78	58.6(16.8)	46.2(12.9)	2.65*
DB						
Burdens	4.2(0.5)	3.6(0.8)	-1.93	4.0(0.6)	3.6(0.8)	2.06*
Benefits	3.0(1.2)	3.4(1.1)	1.05	3.1(1.2)	3.5(1.0)	-1.26
Avoidance	3.2(1.2)	3.1(1.2)	-0.10	3.3(1.0)	3.1(1.2)	0.64

Table 5.5 continued

SES	96.9(54.1)	85.4(32.3)	-0.54 [a]	100.4(41.0)	80.8(32.4)	1.70
EDI-2						
Drive for Thinness	9.8(7.6)	15.0(5.6)	2.00	11.6(7.3)	15.5(5.2)	-1.74[a]
Bulimia	2.2(3.9)	4.9(6.5)	1.00	5.0(6.2)	4.3(6.3)	0.34
Body Dissatisfaction	12.3(6.4)	17.9(7.7)	1.67	15.7(8.1)	17.8(7.6)	-0.80
Ineffectiveness	9.8(6.2)	15.5(9.0)	1.48	12.8(7.1)	15.5(9.5)	-1.01 [a]
Perfectionism	7.7(3.9)	9.0(5.4)	0.58	10.6(5.1)	8.0(5.1)	1.55
Interpersonal Dist	5.5(3.3)	5.8(3.5)	0.21	5.6(3.6)	5.9(3.5)	-0.21
Interoceptive Aware	14.5(8.6)	13.1(7.4)	-0.41	13.8(8.6)	13.1(7.0)	0.25
Maturity Fears	5.5(3.8)	7.2(6.9)	0.59	9.5(8.8)	5.8(4.8)	1.46 [a]
Asceticism	8.8(5.0)	9.0(5.2)	0.09	9.3(6.4)	8.9(4.6)	0.26
Impulse Regulation	9.0(8.2)	8.8(6.9)	-0.06	10.3(8.3)	8.2(6.3)	0.91
Social Insecurity	8.5(2.4)	9.9(4.7)	0.70	8.9(3.9)	10.0(4.7)	-0.74
EDE-Q						
Restraint	2.2(2.0)	4.5(1.4)	3.67**	3.5(2.2)	4.4(1.3)	-1.38 [a]
Eating Concern	2.3(1.6)	4.0(1.3)	3.06**	3.0(1.9)	4.0(1.1)	-1.84 [a]
Weight Concern	2.9(2.2)	4.6(1.2)	2.01 [a]	3.6(1.9)	4.6(1.2)	-2.18*
Shape Concern	3.7(2.0)	5.0(1.0)	1.65 [a]	4.1(1.6)	5.1(1.0)	-2.02 [a]
BDI	32.7(11.0)	35.0(12.8)	0.44	33.9(10.6)	35.0(13.3)	-0.26

[a] Levene's test for equality of variances was significant, so equal variances were not assumed
* significant at $p < 0.05$level
** significant at $p < 0.01$ level

Dropouts at post-treatment (n = 7) had significantly lower eating concerns ($t(40)$ = 3.055, p = 0.004) and restraint subscale scores ($t(40)$ = 3.667, p = 0.001) on the pre-treatment EDE-Q compared to treatment completers. Dropouts at follow-up (n = 14) reported significantly higher levels of motivation to recover as measured by the ANSOCQ at pre-treatment ($t(40)$ = -2.654, p = 0.011), lower weight concerns ($t(40)$ = 2.182, p = 0.035) measured on the EDE-Q, and a greater perception of the burdens of having an eating disorder ($t(40)$ = -2.058, p =0.046; from the DBS) at pre-treatment compared with completers. There were no differences on any of the EDI-2 subscales.

Chapter 6
Results

This chapter will review the findings of the current study. Firstly, the overall outcome of all patients who completed four weeks of inpatient treatment will be examined. The differences in outcome between those who received the four sessions of MET and those who did not will then be considered in order to test the hypothesis that MET will be associated with enhanced treatment outcome compared to treatment-as-usual.

6.1 Results of the overall effectiveness of four weeks of inpatient treatment (*N* = 42). Comparison of pre-treatment, post-treatment and follow-up data

6.1.1 Motivational scales and associated constructs

Details regarding changes to the motivational scales between pre-treatment and post-treatment can be found in Table 6.2, and Table 6.3 contains data for the post-treatment to follow-up changes.

The Anorexia Nervosa Stages of Change Questionnaire

The Anorexia Nervosa Stages of Change Questionnaire (ANSOCQ; Rieger et al, 2000) was utilised to assess changes in motivation to recover. A statistically significant increase from pre-assessment to post-assessment was detected on the mean total score ($t(34) = 5.300$, $p < 0.001$), indicating an increase in readiness to overcome one's eating disorder, which held at the 6 week follow up assessment ($t(27) = -0.05$, $p = 0.961$).

Averages of the total scores (rounded to the nearest integer) were calculated to classify patients into stages of change (Rieger et al, 2002). These scores could range from 1 (corresponding to the Precontemplation stage) to 5 (corresponding to the Maintenance stage of change). At pre-treatment, the mean stage of change was Contemplation, whereas the mean stage at post-treatment and at follow up was Preparation. Percentages of participants classified as being in each stage of change at each assessment occasion are presented in Table 6.1.

Table 6.1.
Percentages of participants classified in each stage of change across assessment occasions according to the ANSOCQ.

	% of participants		
	Pre-treatment (n = 42)	Post-treatment (n = 35)	Follow-up (n = 28)
Precontemplation	5	9	14
Contemplation	45	20	32
Preparation	36	43	25
Action	14	26	25
Maintenance	0	3	4

Decisional Balance Scale for Anorexia

The Decisional Balance Scale for Anorexia (DB; Cockell, Geller, & Linden, 2002) was employed to assess patients' perceived positive and negative aspects of their eating disorder, and any changes in these over the assessment period. Over the four-week intervention, there was no significant difference in the perceived benefits of having the illness (Benefits subscale; $t(31) = -2.022$, $p = 0.645$), nor in the functional avoidance that having an eating disorder allows (Avoidance subscale; $t(31) = 0.043$, $p = 0.966$) across time. There was, however, an increase between pre and post-treatment assessment in the perceived burden that having an eating disorder entails that fell just below significance (Burden subscale; $t(31) = -2.022$ $p = 0.052$), but the perceived burdens then significantly reduced between post-treatment and follow-up ($t(23)=3.077$, $p = 0.005$), with the results at follow up being comparable to those at pretreatment ($t(25)= 0.694$, $p = 0.492$). No other changes emerged at follow-up.

Self-Efficacy Scale

The Self-Efficacy Scale (SES) developed by Rieger et al. (2002) provides a general measure of patients' beliefs that they can overcome their eating disorder, should they choose to do so. There was a significant increase in self-efficacy as measured by this

scale over the four-week period ($t(33)= -5.016$, $p < 0.001$), which held at follow up ($t(27) = 0.910$, $p = 0.371$).

Treatment engagement

The treatment engagement rating scale developed by Rieger et al. (2002) examines patients' willingness to take part in routine hospital care e.g. to attend group therapy, to have individual sessions with their psychiatrist etc. There was a significant increase in engagement as assessed by this scale over the four-week hospitalisation period ($t(34) = 3.957$ $p < 0.001$). This scale was not employed at the follow-up assessment.

Table 6.2.
Results of paired t-tests for all motivational scales between pre-treatment and post-treatment (n = 35).

	M (SD) Pre	M (SD) Post	t	df	Sig. (2-tailed)
Outcome measure					
ANSOCQ					
Total score	48.50(14.07)	58.39(17.50)	-5.300	34	<0.001**
Decisional Balance					
Benefits	3.47(1.07)	3.54(0.86)	-0.465	31	0.645
Burdens	3.63(0.75)	3.84(0.81)	-2.022	31	0.052
Avoidance coping	3.20(1.17)	3.20(1.19)	0.043	31	0.966
Self Efficacy Scale					
Total score	84.81(32.56)	101.76(37.73)	-5.016	34	<0.001**
Treatment Engagement					
Total score	34.76(8.12)	37.94(8.03)	-3.957	34	<0.001**

** significant at $p < 0.01$ level

Table 6.3.
Results of paired t-tests for all motivational scales between post-treatment and the six week follow-up (n = 28).

	M (SD) Post	M (SD) Follow up	t	df	Sig. (2-tailed)
Outcome measure					
ANSOCQ					
Total score	53.85(15.46)	53.96(19.15)	-0.050	27	0.961
Decisional Balance					
Benefits	3.64(0.80)	3.42(0.91)	1.384	23	0.180
Burdens	3.72(0.87)	3.44(0.86)	3.077	23	0.005**
Avoidance coping	3.04(1.23)	2.96(1.00)	0.548	23	0.589
Self Efficacy Scale					
Total score	96.71(37.13)	92.68(42.56)	0.910	27	0.371

**significant at $p < 0.01$ level

6.1.2 Eating Disorder Psychopathology and Behaviour

For details regarding the pre- to post-treatment, and post-treatment to follow-up statistical analyses for the scales relating to eating disorder psychopathology and behaviour, see Tables 6.4 and 6.5.

Eating Disorders Examination - Questionnaire

The EDE-Q (Fairburn & Beglin, 1994) was used as a measure of the frequency of eating disorder behaviours and of the severity of eating disorder psychopathology. Statistically significant decreases were found on all four psychopathology subscales across the four-week hospital stay. There was a vast improvement in weight and shape concerns ($t(33)= 3.499$ $p = 0.001$; and $t(33) = 3.657$, $p = 0.001$, respectively), and in eating concerns and eating restraint ($t(33) = 6.673$, $p <0.001$; and $t(33) = 8.807$, $p <0.001$, respectively). These improvements held at the six-week follow-up

assessment. Certain aspects of specific symptomatology also significantly decreased over the four weeks, with paired samples t-tests indicating a reduction in the number of days on which participants binged ($t(33) = 4.558$, $p < 0.001$), and a reduction in the frequency of self-induced vomiting ($t(26) = 3.652$, $p = 0.001$), which both held at follow up (bingeing: $t(27) = -1.724$, $p = 0.096$; vomiting: $t(19) = -0.881$, $p = 0.389$).

The McNemar test for binomial distributions showed no significant decreases across the intervention for the numbers of participants who reported engaging in self-induced vomiting, from 19 at pre-assessment to 13 at post-assessment ($N = 33$, $p = 0.070$), laxative use (from 7 to 4, $N = 33$, $p = 0.250$), diuretic use (3 to 2, $N = 33$, $p = 1.000$), or excessive exercise (from 12 to 10, $N = 33$, $p = 0.687$). Furthermore, no differences emerged between the posttreatment and follow up assessments (vomiting: $N = 27$, $p = 1.000$; laxatives: $N = 27$, $p = 1.000$; diuretics: $N = 27$, $p = 1.000$; or exercise: $N = 27$, $p = 0.453$). Additionally, there was no significant change in the frequency of exercising, nor laxative or diuretic usage between the three assessment occasions, however, as shown above, only a small number of participants reported abusing laxatives and diuretics initially.

Eating Disorder Inventory - 2 (EDI-2; Garner, 1991)

The EDI-2 was implemented to assess common psychological and behavioural traits exhibited by patients with eating disorders. Scores on the Drive for Thinness ($t(34) = 3.794$, $p = 0.001$), Bulimia ($t(34) = 2.745$, $p = 0.01$), Ineffectiveness ($t(34) = 2.372$, $p = 0.023$), and the Social Insecurity ($t(34) = 2.983$, $p = 0.005$) subscales significantly improved over the four-week period. These improvements held at the follow-up assessment. There were no significant changes on the remaining seven subscales across the assessment periods.

Table 6.4.
Results of paired t-tests for eating disorder pathology and behaviour scales between pretreatment and posttreatment (n = 35).

	M (SD) Pre	M (SD) Post	t	df	Sig. (2-tailed)
Outcome measure					
EDE-Q Subscale					
Restraint	4.51(1.40)	2.25(1.47)	8.807	33	<0.001**
Eating Concern	4.06(1.19)	2.74(1.40)	6.673	33	<0.001**
Weight Concern	4.58(1.19)	3.97(1.73)	3.499	33	0.001**
Shape Concern	5.02(0.98)	4.47(1.54)	3.657	33	0.001**
EDI-2 Subscale					
Drive for Thinness	15.04(5.61)	12.34(5.87)	3.794	34	0.001**
Bulimia	4.91(6.52)	2.63(3.96)	2.745	34	0.010*
Body Dissatisfaction	17.93(7.73)	16.97(7.79)	1.648	34	0.108
Ineffectiveness	15.51(9.02)	13.60(8.65)	2.372	34	0.023*
Perfectionism	9.00(5.40)	8.66(4.54)	0.489	34	0.628
Interpersonal Distrust	5.83(3.54)	5.59(4.07)	0.471	34	0.641
Interoceptive Awareness	13.14(7.37)	11.03(7.32)	2.019	34	0.051
Maturity Fears	7.20(6.85)	6.29(5.05)	1.599	34	0.119
Asceticism	9.03(5.23)	8.50(5.15)	0.813	34	0.422
Impulse Regulation	8.83(6.85)	7.77(6.03)	0.947	34	0.350
Social Insecurity	9.89(4.70)	8.03(4.80)	2.973	34	0.005**

** significant at the $p < 0.01$ level
* signficant at the $p < 0.05$ level

Table 6.5.
Results of paired t-tests for eating disorder pathology and behaviour scales between post-treatment and six week follow up (n = 28).

	M (SD) Post	M (SD) Follow up	t	df	Sig. (2-tailed)
Outcome measure					
EDE-Q Subscale					
Restraint	2.34(1.50)	2.60(1.48)	-0.951	27	0.350
Eating Concern	2.81(1.47)	3.03(1.48)	-1.045	27	0.305
Weight Concern	4.01(1.82)	4.01(1.80)	0.000	27	1.000
Shape Concern	4.54(1.58)	4.52(1.60)	0.107	27	0.371
EDI-2 Subscale					
Drive for Thinness	13.46(5.38)	13.14(6.58)	0.365	27	0.718
Bulimia	2.00(3.23)	2.25(3.72)	-0.492	27	0.627
Body Dissatisfaction	17.36(7.83)	17.52(8.80)	-0.180	27	0.858
Ineffectiveness	14.68(8.78)	13.38(8.62)	1.212	27	0.236
Perfectionism	8.25(4.33)	8.11(4.18)	0.269	27	0.790
Interpersonal Distrust	5.82(3.72)	5.34(3.57)	1.091	27	0.285
Interoceptive Awareness	10.79(6.84)	10.08(6.71)	0.764	27	0.452
Maturity Fears	5.57(4.11)	4.96(4.21)	1.156	27	0.258
Asceticism	8.29(4.69)	7.96(4.77)	0.494	27	0.626
Impulse Regulation	7.82(5.89)	6.98(5.49)	1.009	27	0.322
Social Insecurity	8.32(4.86)	8.43(4.70)	-0.185	27	0.855

Body Mass Index (BMI)

A repeated measures analysis of variance (ANOVA) was undertaken to determine changes in BMI across the intervention and at follow-up for those participants who completed the study and were initially classified as being underweight (*n* = 27; BMI < 20kgm^{-2}). As shown in Figure 6.1, there was a significant increase in BMI, which

rose from a mean (± sd) of 15.48 (± 2.09) at the first session, to a mean (± sd) of 17.44 (±2.05) at 6 weeks follow up ($F_{(4,104)}$ = 67.209, p < 0.001, using the Greenhouse-Geisser correction for Epsilon). Planned within subjects repeated measures comparisons indicated that BMI rose significantly between each time point.

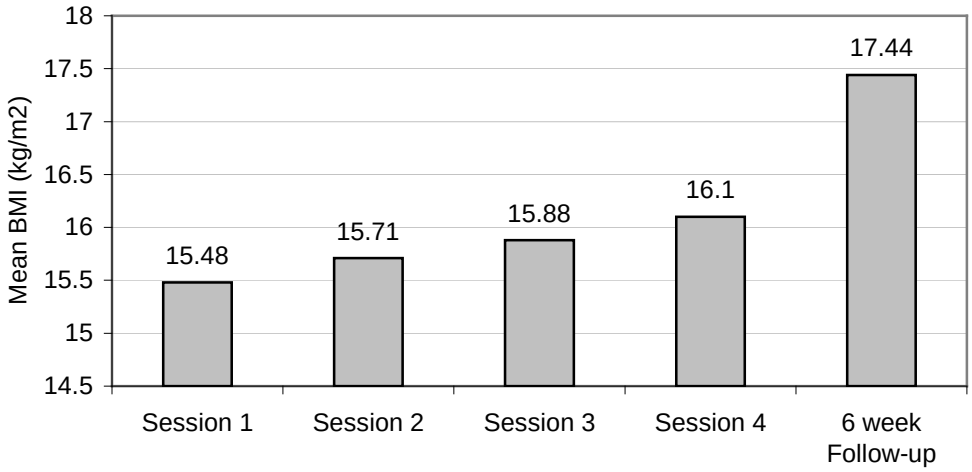

Figure 6.1. Mean BMI across the intervention for the overall sample of initially underweight treatment completers (n = 27).

6.1.3 General psychopathology

Beck Depression Inventory II (BDI-II; Beck, Steer & Brown, 1996)

The BDI-II was employed to assess initial levels of depressive symptomatology and any change in these over the course of the intervention. There was a significant improvement in reported symptoms between pre and posttreatment assessments (t(33) = 3.385, p = 0.002), shown in Table 6.6. The BDI-II was not administered at the six-week follow-up.

Table 6.6
Results of paired t-test for the BDI-II between pre- and post-treatment (n = 34).

	M (SD) Pre	M (SD) Post	t	df	Sig. (2-tailed)
Outcome measure					
BDI-II	34.61(12.38)	27.85(14.94)	3.385	33	0.002**

**Significant at $p < 0.01$ level

6.2 Results of the effectiveness of the MET groups plus treatment as usual compared with treatment as usual (TAU) alone.

6.2.1 Comparison of group changes on the formal assessment measures from the pre-treatment to the post-treatment assessments.

In order to ascertain whether the MET intervention improved short-term hospital outcome, a series of independent samples *t*-tests on the difference scores of post-pre treatment were conducted, comparing the MET and the TAU groups. For ease of replication, means and standard deviations of the measures for each group are presented in Table 6.7. The results, as presented in Table 6.8, indicate that there are no significant differences between groups on any assessment measure, except for the TAU group showing a significant reduction in Drive for Thinness compared with the MET group ($t(33) = 2.13$, $p = 0.041$).

Table 6.7.
Means and standard deviations of the pre-treatment and post-treatment measures for the MET and TAU groups.

	M(SD) MET group		M(SD) TAU group	
	Pre	Post	Pre	Post
Motivational measures				
ANSOCQ	48.37(15.81)	57.36(18.30)	48.66(12.19)	59.63(17.01)
Decisional Balance				
Burdens	3.37(0.84)	3.71(0.90)	3.84(0.65)	3.98(0.68)
Benefits	3.30(1.09)	3.54(0.94)	3.68(1.06)	3.53(0.79)
Avoidance	2.83(1.26)	2.77(1.29)	3.62(0.93)	3.68(0.87)
Self efficacy scale	82.53(39.93)	78.14(16.55)	99.65(43.00)	92.18(26.97)
Treatment engagement	35.37(9.60)	38.00(8.99)	34.75(6.53)	37.88(7.08)
General psychopathology				
BDI-II	31.74(11.59)	27.44(15.09)	38.41(13.79)	28.31(15.26)
Eating disorder behaviour and psychopathology				
EDI-II subscales				
Drive for Thinness	13.53	12.15	16.84	12.56
	(6.45)	(3.86)	(3.86)	(5.93)
Bulimia	3.42	2.11	6.69	3.25
	(5.84)	(7.01)	(7.01)	(4.04)
Body Dissatisfaction	15.79	15.42	20.47	18.81
	(8.13)	(6.60)	(6.60)	(6.39)
Ineffectiveness	14.05	13.16	17.25	14.13
	(9.67)	(8.02)	(8.02)	(8.43)
Perfectionism	7.42	7.42	10.88	10.13
	(5.45)	(4.84)	(4.84)	(4.53)
Interpersonal Distrust	5.58	5.45	6.13	5.75
	(3.29)	(3.90)	(3.90)	(4.42)
Interoceptive Aware.	11.63	10.21	14.94	12.00
	(6.91)	(7.71)	(7.71)	(7.59)
Maturity Fears	4.79	4.86	10.06	8.00
	(4.18)	(8.32)	(8.32)	(5.55)
Asceticism	8.11	7.93	10.13	9.19
	(2.96)	(7.01)	(7.01)	(6.15)
Impulse Regulation	8.37	7.00	9.38	8.69
	(6.07)	(7.86)	(7.86)	(6.51)
Social Insecurity	9.05	7.68	10.88	8.44
	(4.66)	(4.70)	(4.70)	(4.79)

Table 6.7 continued

	M(SD) MET group		M(SD) TAU group	
	Pre	Post	Pre	Post
EDE-Q subscales				
Restraint	4.52(1.38)	2.20(1.50)	4.49(1.46)	2.30(1.48)
Eating concern	3.71(1.08)	2.54(1.54)	4.45(1.21)	2.96(1.25)
Shape concern	4.95(1.08)	4.38(1.74)	5.11(0.90)	4.58(1.33)
Weight concern	4.40(1.31)	3.86(1.94)	4.78(1.05)	4.10(1.51)
EDE-Q diagnostics				
Binges	1.61(2.12)	0.17(0.38)	2.06(2.24)	0.31(0.60)
Vomiting episodes	17.78(41.51)	2.15(3.78)	37.19(41.07)	6.14(7.94)
Laxative abuse	0.25(0.62)	0.25(0.87)	6.29(11.03)	3.50(8.53)
Diuretic abuse	0.00(0.00)	0.00(0.00)	4.14(10.54)	2.42(8.19)
Excessive exercise	6.78(9.90)	1.67(2.40)	5.21(10.84)	6.57(12.1)

Table 6.8
Results of independent samples t-tests comparing the MET (n = 19) and TAU (n = 16) groups for the post-pre treatment difference scores for all outcome measures.

	M(SD) Difference score MET group	M(SD) Difference score TAU group	t	df	Sig. (2-tailed)
Motivational measures					
ANSOCQ	8.98(7.10)	10.97(14.61)	-0.524	33	0.604
Decisional Balance					
Burdens	0.26(0.50)	0.14(0.65)	0.624	30	0.537
Benefits	0.25(0.73)	-0.15(0.74)	1.530	30	0.136
Avoidance	-0.06(0.67)	0.06(0.51)	-0.546	30	0.589
Self efficacy scale	17.44(19.73)	16.40(20.33)	0.151	32	0.881
Treatment engagement	3.22(5.75)	3.13(3.28)	0.060	32	0.953
General psychopathology					
BDI-II	4.39(8.50)	10.09(14.87)	1.417	32	0.166
Eating disorder behaviour and psychopathology					
EDI-II subscales					
Drive for Thinness	-1.38(3.78)	-4.28(4.28)	2.130	33	0.041*
Bulimia	-1.32(4.94)	-3.44(4.80)	1.281	33	0.209
Body Dissatisfaction	-0.37(2.54)	-1.66(4.25)	1.109	33	0.276
Ineffectiveness	-0.89(3.73)	-3.13(5.67)	1.396	33	0.172
Perfectionism	0.00(5.14)	-0.75(2.65)	0.527	33	0.602
Interpersonal Distrust	-0.13(2.73)	-0.38(3.48)	0.232	33	0.818
Interoceptive Aware.	-1.42(5.05)	-2.94(7.42)	0.716	33	0.479
Maturity Fears	0.07(3.05)	-2.06(3.42)	1.950	33	0.060
Asceticism	-0.18(3.57)	-0.94(4.19)	0.579	33	0.567
Impulse Regulation	-1.37(4.91)	-0.69(8.34)	-0.300	33	0.766
Social Insecurity	-1.37(2.91)	-2.44(4.49)	0.849	33	0.402
EDE-Q subscales					
Restraint	-2.32(1.56)	-2.19(1.47)	-0.258	32	0.798
Eating concern	-1.67(1.12)	-1.49(1.19)	0.807	32	0.426
Shape concern	-0.57(0.99)	-0.53(0.76)	-0.138	32	0.891
Weight concern	-0.54(1.02)	-0.68(1.04)	0.387	32	0.701
EDE-Q diagnostics					
Binges	-12.64(31.89)	-8.79(24.08)	-0.361	26	0.721
Vomiting episodes	-22.00(45.77)	-35.64(37.36)	0.851	25	0.403
Laxative abuse	0.00(0.43)	-2.00(4.76)	1.448	24	0.161
Diuretic abuse	0.00(0.00)	-3.86(9.84)	1.232	22	0.231
Excessive exercise	-5.11(7.62)	1.36(11.57)	-1.477	21	0.154

6.2.2 Comparison of group changes on the formal assessment measures from the post-treatment to follow-up assessments

A further series of independent samples *t*-tests on the difference scores (see Table 6.9) was undertaken to examine any disparities between the MET and TAU groups for changes between post-treatment and follow-up assessments. As shown in Tables 6.9 and 6.10, the only significant difference between the two groups was on the Avoidance subscale of the Decisional Balance Scale for Anorexia, with the TAU group showing a reduction in the functional avoidance associated with the eating disorder compared to the MET group ($t(22) = 2.465$, $p = 0.022$). However, a comparison of changes to the results on the Avoidance subscale from pretreatment to follow-up assessments showed that the two groups did not differ across the course of the three assessment periods ($t(24) = 1.159$, $p = 0.258$).

Table 6.9.
Means and standard deviations of the post-treatment and follow-up measures for the MET and TAU groups

	M(SD) MET group		M(SD) TAU group	
	Post	Followup	Post	Followup
Motivational measures				
ANSOCQ	55.46(18.30)	56.88(21.78)	51.36(9.92)	49.45(13.95)
Decisional Balance				
Burdens	3.70(0.96)	3.48(0.90)	3.76(0.75)	3.37(0.89)
Benefits	3.63(0.84)	3.32(0.91)	3.64(0.77)	3.60(0.91)
Avoidance	2.66(1.34)	2.82(1.08)	3.69(0.67)	3.21(0.86)
Self efficacy scale	99.65(43.0)	97.47(46.6)	92.18(27.0)	85.27(36.3)
Eating disorder behaviour and psychopathology				
EDI-II subscales				
Drive for Thinness	12.58(5.60)	11.52(6.89)	14.82(4.98)	15.64(5.45)
Bulimia	1.18(1.59)	1.53(2.37)	3.27(4.61)	3.36(5.10)
Body Dissatisfaction	15.76(8.48)	15.53(8.87	19.82(6.29)	20.59(8.13)
Ineffectiveness	13.41(9.01)	11.65(7.93)	16.64(8.44)	16.05(9.32)
Perfectionism	7.76(4.10)	7.04(3.58)	9.00(4.75)	9.77(4.65)
Interpersonal Distrust	5.06(3.23)	4.79(2.97)	7.00(4.27)	6.18(4.35)
Interoceptive Awareness	9.76(5.91)	9.01(6.00)	12.36(8.13)	11.73(7.68)
Maturity Fears	5.06(4.24)	4.47(3.26)	6.36(3.64)	5.73(5.46)
Asceticism	7.41(3.16)	6.76(3.82)	9.64(6.33)	9.82(5.66)
Impulse Regulation	6.76(5.24)	6.94(6.07)	9.45(6.71)	7.05(4.74)
Social Insecurity	7.65(4.76)	7.82(4.19)	9.36(5.07)	9.36(5.48)
EDE-Q subscales				
Restraint	2.21(1.55)	2.72(1.58)	2.53(1.46)	2.40(1.34)
Eating concern	2.52(1.58)	2.97(1.65)	3.25(1.20)	3.13(1.24)
Shape concern	4.43(1.78)	4.46(1.80)	4.72(1.27)	4.63(1.30)
Weight concern	3.88(2.00)	3.84(1.99)	4.20(1.57)	4.27(1.52)
EDE-Q diagnostic items				
Binges	0.12(0.33)	0.59(1.00)	0.45(0.69)	0.64(0.81)
Vomiting episodes	2.00(3.91)	2.12(6.75)	3.89(7.47)	8.00(12.15)
Laxative abuse	0.18(0.73)	0.06(0.24)	7.00(12.96)	3.75(9.82)
Diuretic abuse	0.00(0.00)	0.00(0.00)	0.50(1.07)	3.50(9.90)
Excessive exercise	0.88(1.90)	1.65(2.87)	10.88(14.8)	7.38(9.74)

Table 6.10
Results of independent samples t-tests comparing the MET (n =17) and TAU (n =11) groups for the post- treatment to follow-up difference scores for all outcome measures.

	M(SD) MET group Difference score	M(SD) TAU group Difference score	t	df	Sig. (2-tailed)
Motivational measures					
ANSOCQ	1.42(12.34)	-1.91(10.96)	0.727	6	0.474
Decisional Balance					
Burdens	-0.22(0.45)	-0.39(0.45)	0.303	22	0.765
Benefits	-0.32(0.72)	-0.04(0.81)	-0.871	22	0.393
Avoidance	0.17(0.68)	-0.48(0.52)	2.465	22	0.022*
Self efficacy scale	-2.18(23.33)	-6.91(24.53)	0.514	26	0.612
Eating disorder psychopathology & behaviour					
EDI-II subscales					
Drive for Thinness	-1.06(4.04)	0.82(5.49)	-1.043	26	0.307
Bulimia	0.35(1.90)	0.09(3.70)	0.247	26	0.807
Body Dissatisfaction	-0.24(4.15)	0.77(5.64)	-0.546	26	0.590
Ineffectiveness	-1.76(6.21)	-0.59(4.98)	-0.526	26	0.604
Perfectionism	-0.73(2.74)	0.77(2.60)	-1.444	26	0.161
Interpersonal Distrust	-0.26(2.29)	-0.82(2.48)	0.604	26	0.551
Interoceptive Aware	-0.76(4.80)	-0.64(5.35)	-0.063	26	0.950
Maturity Fears	-0.59(2.55)	-0.64(3.23)	0.044	26	0.965
Asceticism	-0.65(3.12)	0.18(4.00)	-0.614	26	0.544
Impulse Regulation	0.18(3.66)	-2.41(5.14)	1.557	26	0.132
Social Insecurity	0.18(3.23)	0.00(2.97)	0.146	26	0.885
EDE-Q subscales					
Restraint	0.52(1.44)	-0.13(1.45)	1.145	26	0.263
Eating concern	0.46(0.98)	-0.13(1.35)	1.331	26	0.195
Shape concern	0.03(0.70)	-0.10(1.14)	0.346	26	0.732
Weight concern	-0.05(0.73)	0.07(1.35)	-0.305	26	0.763
EDE-Q diagnostic items					
Binges	5.31(18.72)	-3.88(10.19)	1.268	19	0.220
Vomiting episodes	0.92(6.17)	0.92(15.13)	-0.586	18	0.565
Laxative abuse	-0.27(0.43)	-3.25(9.19)	1.079	17	0.296
Diuretic abuse	0.00(0.00)	3.00(9.75)	-0.980	16	0.342
Excessive exercise	0.89(4.20)	-3.50(17.59)	0.728	15	0.478

* significant at $p < 0.05$ level

6.2.3 Comparison of group changes on the formal assessment measures from the pre-treatment to follow-up assessments

For completeness, a further series of independent samples *t*-tests were undertaken to examine any differences between groups over the course of the entire trial (i.e. on the difference scores between the pre-treatment to the six week follow-up assessments). As shown in Tables 6.11 and 6.12, there were no significant differences between the MET and TAU groups over this time period.

Table 6.11
Means and standard deviations of the pre-treatment and follow-up measures for the MET and TAU groups

	M (SD) MET group		M (SD) TAU group	
	Pre	Followup	Pre	Followup
Motivational measures				
ANSOCQ	47.04 (15.77)	56.88 (21.78)	44.91 (6.73)	49.45 (13.95)
Decisional Balance				
Burdens	3.38(0.82)	3.48(0.90)	3.89(0.65)	3.48(0.77)
Benefits	3.44(1.05)	3.32(0.91)	3.69(0.81)	3.60(0.91)
Avoidance	2.76(1.32)	2.82(1.08)	3.58(0.86)	3.21(0.86)
Self efficacy scale	82.53(39.93)	97.47(46.6)	78.14(16.55)	85.27(36.29)
Eating disorder behaviour and psychopathology				
EDI-II subscales				
Drive for Thinness	14.29(6.03)	11.52(6.89)	17.41(2.82)	15.63(5.45)
Bulimia	2.94(5.39)	1.53(2.37)	6.36(7.38)	3.36(5.10)
Body Dissatisfaction	16.41(7.96)	15.53(8.87)	19.86(6.96)	20.59(8.13)
Ineffectiveness	14.06(10.13)	11.65(7.92)	17.82(8.51)	16.04(9.32)
Perfectionism	7.00(5.05)	7.04(3.58)	9.45(4.97)	9.77(4.65)
Interpersonal Distrust	5.35(3.41)	4.79(2.97)	6.64(3.56)	6.18(4.35)
Interoceptive Aware.	11.47(7.09)	9.01(6.00)	15.73(6.40)	11.73(7.68)
Maturity Fears	4.88(4.41)	4.47(3.26)	7.09(5.30)	5.73(5.30)
Asceticism	8.12(3.06)	6.76(3.82)	10.00(6.29)	9.82(6.29)
Impulse Regulation	8.41(6.34)	6.94(6.07)	7.82(6.54)	7.05(6.54)
Social Insecurity	9.06(4.94)	7.82(4.19)	11.55(4.01)	9.36(4.01)
EDE-Q subscales				
Restraint	4.44(1.37)	2.72(1.29)	4.35(1.29)	2.40(1.34)
Eating concern	3.68(1.10)	2.97(1.65)	4.56(0.81)	3.13(1.24)
Shape concern	4.99(1.10)	4.46(1.80)	5.24(0.71)	4.63(1.30)
Weight concern	4.47(1.31)	3.84(1.99)	4.83(0.97)	4.27(1.52)
EDE-Q diagnostic items				
Binges	1.41(2.00)	0.59(1.00)	2.09(2.21)	0.64(0.81)
Vomiting episodes	17.29(42.74)	2.12(6.75)	36.36(42.73)	8.00(12.12)
Laxative abuse	0.18(0.53)	0.06(0.24)	7.25(13.44)	3.75(9.82)
Diuretic abuse	0.00(0.00)	0.00(0.00)	7.25(13.44)	3.50(9.90)
Excessive exercise	6.18(9.58)	1.65(2.87)	9.13(13.32)	7.38(9.74)

Table 6.12
Results of independent samples t-tests comparing differences between the MET (n =17) and TAU (n =11) groups for the pre-treatment - follow-up difference scores for all outcome measures.

	M (SD) MET group Difference scores	M (SD) TAU group Difference scores	t	df	Sig. (2-tailed)
Motivational measures					
ANSOCQ	9.84(15.04)	4.55(14.60)	0.920	26	0.366
Decisional Balance					
Burdens	0.12(0.59)	-0.33(0.48)	2.011	24	0.056
Benefits	-0.08(0.93)	-0.07(0.64)	-0.026	24	0.979
Avoidance	0.06(0.68)	-0.29(0.85)	1.159	24	0.258
Self efficacy scale	14.94(28.98)	7.14(33.15)	0.658	26	0.516
Eating disorder psychopathology & behaviour					
EDI-II subscales					
Drive for Thinness	-2.78(3.13)	-1.77(4.18)	-0.726	26	0.474
Bulimia	-1.41(5.36)	-3.00(5.08)	0.781	26	0.442
Body Dissatisfaction	-0.88(3.77)	0.73(5.90)	-0.884	26	0.385
Ineffectiveness	-2.41(6.79)	-1.77(5.70)	-0.258	26	0.798
Perfectionism	0.04(3.24)	0.32(1.65)	-0.267	26	0.792
Interpersonal Distrust	-0.56(2.22)	-0.45(3.05)	-0.105	26	0.917
Interoceptive Aware.	-2.46(6.13)	-4.00(5.76)	0.662	26	0.514
Maturity Fears	-0.41(2.74)	-1.36(3.44)	0.812	26	0.424
Asceticism	-1.35(3.24)	-0.18(3.62)	-0.892	26	0.380
Impulse Regulation	-1.47(4.68)	-0.77(6.68)	-0.317	26	0.754
Social Insecurity	-1.24(3.75)	-2.18(2.48)	0.737	26	0.468
EDE-Q subscales					
Restraint	-1.71(1.21)	-1.95(1.59)	0.441	26	0.663
Eating concern	-0.71(1.12)	-1.44(1.65)	1.396	26	0.175
Shape concern	-0.53(1.06)	-0.62(1.16)	0.212	26	0.834
Weight concern	-0.64(1.07)	-0.55(1.61)	-0.160	26	0.874
EDE-Q diagnostic items					
Binges	-5.35(15.34)	-14.25(36.21)	0.861	26	0.397
Vomiting episodes	-15.18(38.17)	-28.25(36.92)	0.807	23	0.428
Laxative abuse	-0.18(0.60)	-3.50(9.90)	0.966	7	0.366 [a]
Diuretic abuse	0.00(0.00)	-3.75(9.82)	1.080	7	0.316 [a]
Excessive exercise	-4.53(9.74)	-1.75(12.62)	-0.606	23	0.551

[a] Levene's test for equality of variances was significant, so equal variances were not assumed

6.2.4 Comparison of differences in weight regain between the MET and TAU groups

A repeated measures ANOVA was undertaken to determine any differences in weight regain. The within subjects factor was BMI measured weekly for four weeks and at follow up, with the treatment type (MET versus TAU) as the between-subjects factor. As represented in Table 6.13 and Figure 6.2, there was no significant BMI by group interaction for those initially underweight (BMI < 20) patients who completed the study (n = 27, $F_{(1.44,100)} = 0.52$, $p = 0.54$, using the Greenhouse-Geisser correction for Epsilon).

Table 6.13.
Mean BMI for treatment condition over the intervention and at follow up for those initially underweight patients (n =27).

	Mean (± s.d.)	
	MET group	TAU group
Week 1	15.08(1.90)	16.17(2.31)
Week 2	15.28(1.88)	16.45(2.27)
Week 3	15.45(1.93)	16.60(2.16)
Week 4	15.68(1.99)	16.81(2.13)
Six week follow up	17.14(1.96)	17.96(2.20)

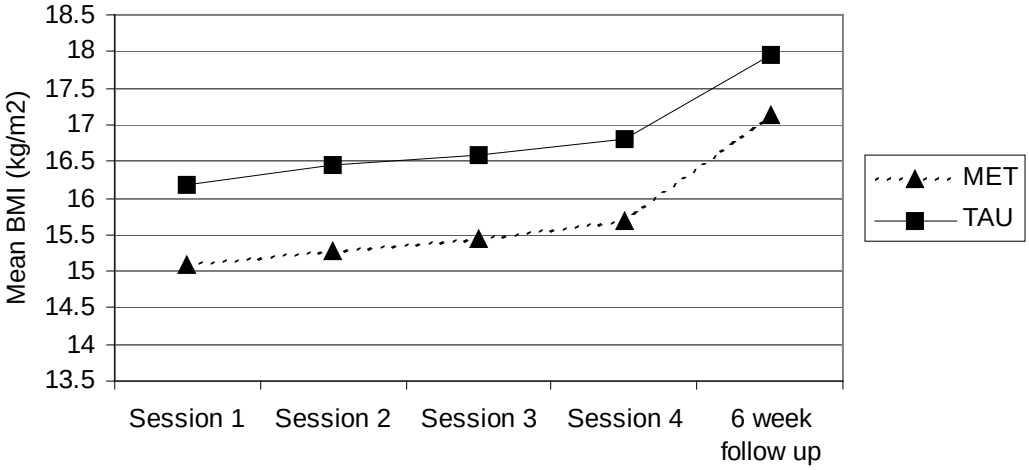

Figure 6.2. Mean BMI for each treatment condition over the intervention and at six-week follow-up.

6.2.5 Further examination of differences between the MET and TAU groups

Given the small sample size, which limited the power of the statistical analyses to detect significant differences on the overall formal measures between the groups at any assessment point, further examination of the data was undertaken. There was an interesting, yet non-significant, trend in the scores on the main motivational measure (ANSOCQ; Rieger et al., 2000) across time points, graphically represented in Figure 6.3, which indicates that whilst both groups showed an increase in scores from pre- to post assessment, the patients in the standard treatment arm appeared to show a reduction in readiness to recover between the post-treatment and follow-up assessments, whereas those in the MET group continued to report increasing levels of motivation over this period.

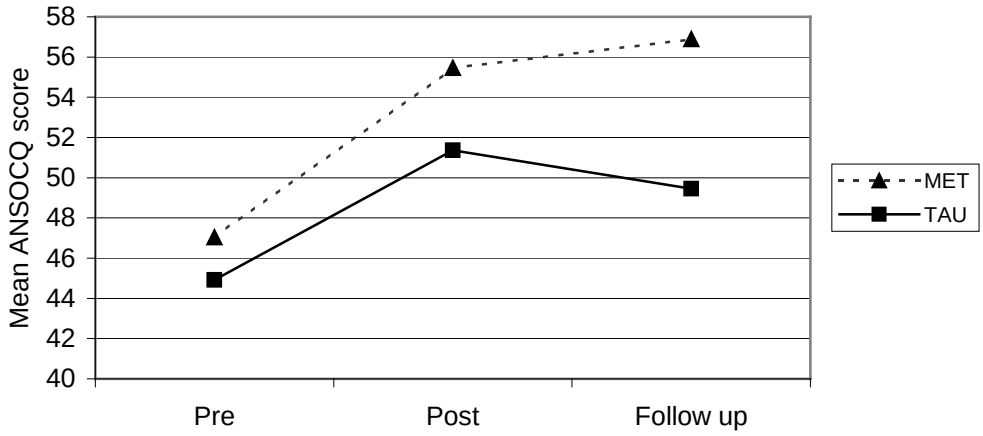

Figure 6.3. Mean ANSOCQ scores for the MET and TAU groups across assessment occasions (n = 28).

Furthermore, when the scores on the ANSOCQ were re-categorised into dichotomous variables i.e. pre-action stages (precontemplation, contemplation, and preparation stages) versus action stages (action and maintenance), a trend arose that suggests that the percentage of respondents in the MET group classified as being in the action stages increased over time (3/23 [13%] at pre-treatment, 6/19 [31.6%] at post-treatment, and 7/17 [41.2%] at follow-up), whereas the percentage in the TAU group increased during the treatment phase (3/19 [15.8%] at pre-treatment , 4/16 [25%] at post-treatment), but decreased to below pre-treatment levels at follow-up (1/11 [9.1%]), as shown in Figure 6.4.

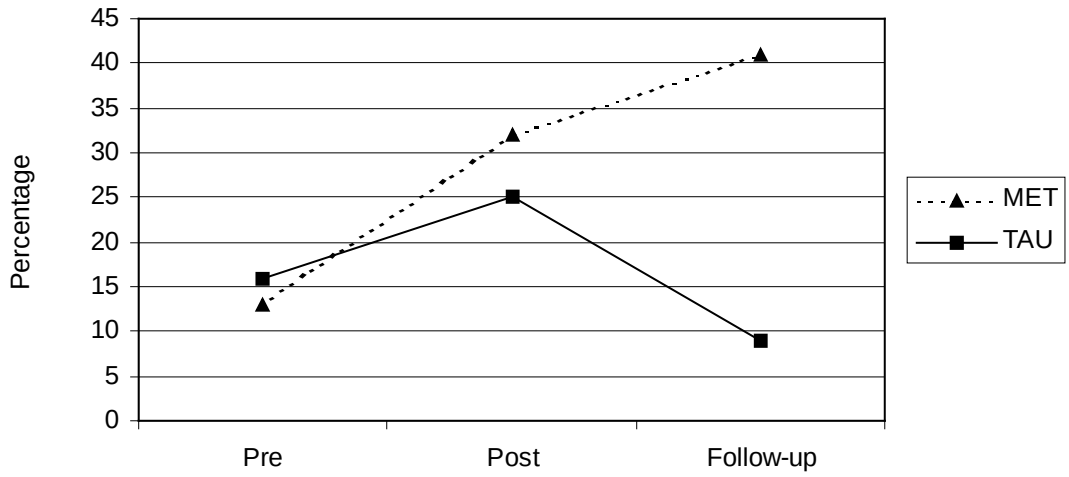

Figure 6.4. Percentage of respondents at each assessment period classified as being in action stages of change according to the ANSOCQ (Rieger et al., 2000).

There was also a greater proportion of participants in the MET group who showed an increase of at least one stage as measured by the ANSOCQ over the course of the four week inpatient stay (10/19 [63%]) than in the TAU group (6/16 [38%]), although the distinction did not reach significance ($\chi^2 = 0.801$, $df = 1$, $p = 0.371$).

A significantly higher proportion of participants in the MET group compared to the TAU group were engaged in appropriate levels of treatment for their eating disorder at follow-up ($\chi^2 = 6.311$, $df = 1$, $p = 0.012$), with 84% (16/19) of the MET completers and 44% (7/16) of the TAU completers either within an inpatient or day-patient program, as shown in Table 6.14.

Table 6.14.
Treatment options taken at follow-up assessment by participants in the MET (n = 19) and TAU (n = 16) groups.

Treatment option	Number (percentage) of MET participants	Number (percentage) of TAU participants
Inpatient – PBCED*	6 (32%)	2 (13%)
Inpatient – other hospital	0 (0%)	1 (6%)
Day program - PBCED	10 (53%)	4 (25%)
Out patient management**	2 (11%)	9 (56%)
No known management	1 (5%)	0 (0%)

NOTE: * PBCED = Peter Beumont Centre for Eating Disorders at Wesley Private Hospital, Sydney
** Outpatient management refers to outpatient treatment by a psychiatrist / psychologist (regularity of service varies)

6.3 Analysis of MET treatment process

6.3.1 Contemplation Ladders

The three contemplation ladders measuring levels of motivation to change certain eating disorder behaviours were administered at the end of each MET session. A

series of repeated measures ANOVA were conducted to ascertain any changes across the sessions. The ladder subscale means for each session are presented in Table 6.15 and Figure 6.5. A significant result was found on two of the motivational scales suggesting an increase in motivation to change across sessions. These scales examined thoughts of ceasing weight control measures ($F_{(3,51)} = 7.374$, $p = 0.003$); and, thoughts about following an eating plan of three meals and several snacks per day ($F_{(3,51)} = 5.088$, $p = 0.004$). For these scales there were also significant linear trends across groups. The final ladder, assessing thoughts about eating avoided foods in moderation, did not show a significant within-subjects main effect ($F_{(3,51)} = 2.067$, $p = 0.116$), although there was a significant linear trend ($F_{(1,17)} = 6.567$, $p = 0.02$) across the mean values of each ladder across groups.

Table 6.15.

Contemplation ladder mean scores for each of the four MET sessions (n = 19).

Scale	Session 1	Session 2	Session 3	Session 4.
Weight control	6.22	5.94	6.61	7.42
Eating plan	5.67	6.44	6.94	7.44
Avoided foods	6.11	6.17	6.78	7.22

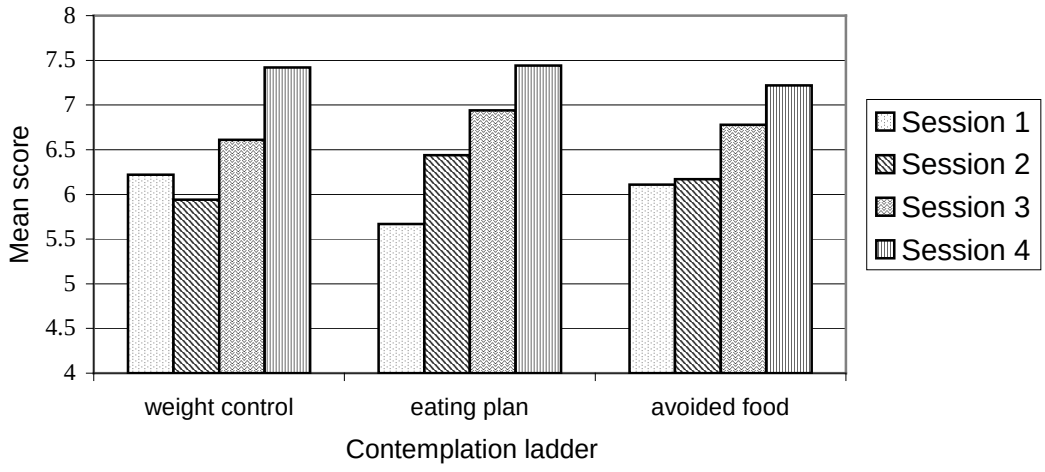

Figure 6.5. Contemplation ladder means across the four MET sessions.

Chapter 7
Discussion

The final chapter provides an overview of the current study and examines the results in relation to the proposed objectives and hypotheses. The results are also compared to the findings of the two published studies by Treasure et al. (1999), and Feld et al. (2001), and to the unpublished study by Geller et al. (2006) that have previously examined MET for eating disorder participants. The perceived strengths and limitations of the present study are considered, as are potential directions for future research.

7.1 Overview of the current study

A review of the literature indicated that the current rates of treatment engagement, compliance and recovery among patients receiving treatment for an eating disorder are unacceptably low. Furthermore, despite a number of different psychotherapeutic approaches having been examined for use with patients with eating disorders, there is still no established psychological treatment for AN or EDNOS, and the most efficacious treatment for BN (i.e., CBT) is associated with disappointingly low levels of recovery and high relapse rates. The literature suggests that these poor recovery rates are associated with the eating disorder population exhibiting a tendency to avoid treatment, discontinue from treatment, and subvert treatment. These indices of poor treatment engagement, which are rife in inpatient settings, have been attributed to poor motivation to recover from eating disorders. Despite widespread endorsement of the importance of increasing motivation to change, only three studies have methodically attempted to implement an intervention specifically aimed at enhancing motivation to recover from eating disorders. The results from these studies indicate that MET may be useful for outpatient eating disorder clients in helping to address ambivalence about change. However, to the author's knowledge, no previous study has systematically assessed treatment to increase willingness to engage in the process of recovery for patients with eating disorders that are serious enough to warrant hospitalisation.

The objectives of the current study were twofold. Firstly, an examination of the effectiveness of an inpatient eating disorders unit affiliated with the University of Sydney was undertaken in order to further the research base upon which future inpatient interventions can be built and compared. Secondly, a four session motivational enhancement therapy intervention, which was developed specifically for the current project (Dean et al., in press), was implemented within this setting and compared with a treatment as usual control group. The aims of the MET group sessions were to foster engagement with the cognitive behaviourally oriented hospital unit by increasing readiness to recover from the eating disorder. It was hypothesised that all patients would exhibit improvements in motivation to overcome the eating disorder, eating disorder behaviour and psychopathology, but that those patients in the MET group would demonstrate greater improvements, particularly on the motivational constructs.

7.2 Discussion of the findings of the current study

7.2.1 The Patient Sample

The major difference between the patient sample in the current study and in the previous studies of MET for eating disorders was that this study examined an inpatient population. The current study also had a greater proportion of participants in the AN spectrum (90% either AN or subclinical AN) than these papers[4]. In line with the respective diagnostic profiles, the mean initial BMI was also lower. The current study thus examined a more severe patient population, in accordance with their hospitalisation status. The lack of exclusionary criteria in the present study means that the results are more clinically applicable than the previous studies that incorporated more strict study entry criteria[5].

[4] The Treasure et al. (1999) study included only participants with a diagnosis of BN, approximately 71% of the participants in Feld et al.'s (2001) study met criteria for AN or an anorexic type illness (EDNOS-AN), and participants in the study by Geller et al. (2006) covered a range of eating disorder diagnoses (proportions unknown).

7.2.2 Discussion of the overall outcome of four weeks of inpatient treatment

The Trans-theoretical Model (Prochaska & DiClemente, 1982) predicts that treatment is most successful when the patient's stage of change matches the treatment approach. Previous research suggests that features of poor motivation associated with inpatient eating disorder units, such as treatment refusal, treatment sabotage, and non-compliance may be influenced by the conflict arising from a precontemplative patient being in an action oriented unit. Thus, it is imperative to foster concordance between the unit's orientation and the patients' stages of change by increasing patients' motivation to change and moving them towards the action stages. According to the transtheoretical model, such a situation should result in the best possible treatment outcome.

The results of the current study suggest that a brief, four-week hospital stay was associated with significant increases in motivation to recover as measured by the ANSOCQ (Rieger et al., 2000), with the average stage of change shifting from contemplation to preparation over this period. However, 72% of participants were still classified as being in pre-action stages of change after four weeks of hospitalisation. This is in line with Rieger and colleagues' (2000) finding that 66% of patients were still not actively engaged in change after approximately three months of treatment. Due to the differing assessment tools, it is difficult to compare the changes in motivational levels between the current study and the previous studies of MET for eating disorders.

An increase in motivation, particularly across the earlier stages of change, has generally been found to be associated with increased insight into the burden of the illness within eating disorders (Cockell et al., 2002; Rieger, Touyz, & Beumont, 2002; Blake, Turnbull, & Treasure, 1997) and across other health risk behaviours (e.g. Prochaska et al., 1994). The pattern found across the current intervention, specifically an increase in the perceived burdens between the pre- and post-treatment assessments as reported on the Decisional Balance Scale (Cockell, 2000), is in line with this

[5] For example, participants in Treasure et al.'s (1999) study were excluded because of complicating medical factors such as diabetes mellitus, and Feld et al. (2001) removed anyone with a BMI over 27.

research. However, the perceived burdens again decreased at follow-up. This is not unexpected, given that most patients had been discharged from the hospital by this point, and thus one of the main practical burdens of having the illness (i.e., being hospitalised) had been removed. Whilst some studies in the eating disorders field have found that increased motivation is associated with a reduction in the perceived benefits of the illness (e.g. Rieger, Touyx, & Beumont, 2002), others have not found that the 'pros' of the eating disorder decline as a function of an increase in motivation to recover (e.g. Cockell et al., 2002; Blake, Turnbull & Treasure, 1997). The results of the current study, which revealed a relatively stable pattern of benefits subscale scores across the assessment occasions, are concordant with the latter findings. Cockell and colleagues also reported an increase in insight into the way in which an eating disorder provides avoidance of unwanted circumstances as motivation to recover increases, a finding that was not borne out in the current research. However, the Cockell et al. study was conducted with an outpatient sample, which may differ from the current inpatient group, who had reduced control over their avoidance of situations.

Two other factors, which are hypothesised to respectively encourage and be a consequent of increased motivation to change, are self-efficacy and treatment engagement. Both of these constructs were found to increase over the intervention. Self-efficacy, or confidence in one's ability to change, is an important element of motivation according to the Transtheoretical Model of Change and the motivational interviewing approach (Miller & Rollnick, 1991; Prochaska & DiClemente, 1992). In order to change, patients need to be motivated to make the changes, but they also need to believe that such change is possible for them to achieve. Another assessment measure (i.e., the Ineffectiveness subscale of the EDI-2 [Garner, 1991]) also revealed a reduction in perception of ineffectiveness, which may be associated with enhanced self-efficacy. The increases revealed in treatment engagement on the Treatment Engagement questionnaire (Rieger et al., 2000) are likely to be related to these increases in motivation and self-efficacy, as patients are more likely to want to be involved in a treatment aimed at their recovery if they are more motivated to recover, and if they believe that recovery is possible. These promising results indicate that the brief hospital stay was effective in boosting patients' belief that they could recover, as well as their commitment to the recovery process.

It was hypothesised that all patients would show reductions in eating disorder attitudes and behaviours over the course of the four-week inpatient stay and at follow-up, and changes in general psychopathology were also predicted. However, given the initially severe illness levels, and the relatively long average illness duration in the current study, patients' results were not expected to reach non-clinical ranges on any formal measure over the relatively short trial period.

Concordantly, the average body mass index significantly rose over the hospital stay and continued to rise at the six-week follow-up, however, it remained within the underweight range. An improvement in depressive symptoms also emerged over the four-week period, although the average score only moved from the severe to the moderate clinical range (Beck, Steer, & Brown, 1996).

A number of other interesting findings emerged on the questionnaires. On the EDE-Q (Fairburn & Beglin, 1994), there were decreases in patients' self reported levels of restraint over their eating, and of their concerns about eating. Patients also reported a reduction in concerns about their body shape and weight on this measure. These decreases were maintained at the follow-up assessment. The inpatient stay was also associated with reductions in the reported frequency of behavioural symptoms, including self-induced vomiting and bingeing, which remained at follow-up.

At pre-treatment, the mean psychological and behavioural traits as measured by the EDI-2 for this sample were assessed to be either comparable, or worse, than the normative eating disorder sample (Garner, 1991), with the exception of the Bulimia subscale which was less severe than that of the normative group. These findings are not unexpected as the normative group was not solely an inpatient sample and included a larger proportion of participants with a diagnosis of BN. There were significant reductions on a number of these factors over the hospital stay, specifically a decreased Drive for Thinness, reduced Social Insecurity, and perceived Ineffectiveness, which nonetheless all remained within the clinical range. A reduction in bulimic symptomatology was also found. The majority of assessed eating disorder traits, however, remained unchanged over the course of the intervention. This was is

no doubt due to the fact that many of the features assessed on the EDI-2 have been described as being relatively enduring (Garner, 1991).

Recent studies examining brief inpatient treatment for mainly AN patients provide a good basis for comparison with the present study. The sample of patients in the current project were similar to those examined by Treat and collaborators (2005) in regards to illness duration, age, gender, and BMI (for the current AN participants) but had experienced a greater number of previous psychiatric hospitalisations. The mean levels of psychopathology at pre-treatment also appear to be more severe in the current patient sample. Both studies showed that cognitively-behaviourally oriented inpatient treatment was associated with significant increases in BMI, and reductions in depressive symptomatology and in the mean Drive for Thinness subscale score across the sample. However, unexpectedly the current treatment was associated with improvements across a wider range of eating disorder psychopathology and behaviour, despite the treatment being of shorter duration.

Lowe and colleagues (2003) reported on the outcome of patients who completed brief inpatient treatment in a unit that incorporated psychodynamic, interpersonal, and cognitive-behavioural approaches. Like the current study, patients gained a significant amount of weight and significant reductions were found in depressive and eating disorder symptoms, which nevertheless remained in the clinical range.

7.2.3 Discussion of the differences in outcome between patients who completed the MET groups in addition to hospital treatment and those who completed hospital treatment only

Like most inpatient eating disorder units, patient resistance to treatment has confronted the Peter Beumont Centre. The MET groups were consequently introduced in an attempt to foster engagement with this hospital program by enhancing readiness to recover from the eating disorder. The duration of an eating disorder is often many years, and so it was hoped that MET would help prepare patients for a treatment journey where recovery was possible, in which illness denial was diminished, and treatment engagement was enhanced.

In the current study, the hospital program was found to significantly increase motivation to recover, self-efficacy, and treatment engagement to an extent that exceeded expectations given the aforementioned problems with treatment refusal and sabotage. Some significant changes in behavioural symptoms and psychopathology were also shown. Given the highly significant results of the intensive hospital treatment program, and the relatively small sample size of the current study, it is not surprising that the four session MET intervention did not significantly improve outcome as assessed on overall formal measures.

However, even though there were no statistically significant differences between the MET and standard treatment groups on overall formal physical, behavioural, and psychological measures, there were nevertheless differences between the groups. There was an interesting divergence between groups on the trend of scores on the main motivational measure (ANSOCQ; Rieger et al., 2000) across the three assessment occasions, which indicates that the MET group participants continued to report increasing levels of motivation whereas the patients in the standard treatment arm showed a reduction in readiness to recover from the post-treatment to the follow-up assessment. This discrepancy was further highlighted when the groups were classified according to whether they were in an action or pre-action stage of change. Whilst the percentage of action focussed patients in the MET continued to increase, the percentage of participants in the TAU group who were actively working towards change at follow-up was lower than the percentage of participants classified in this band at the beginning of treatment. It would be reasonable to hypothesise that such trends would result in improvements in eating disorder symptomatology in the MET, but not the TAU groups over the period subsequent to the follow-up assessment, given that an increase in motivation to recover should theoretically lead to improvement in eating disordered behaviour. This finding has important clinical implications and is in urgent need of replication.

The finding that a greater proportion of participants in the MET than in the TAU group exhibited a progression from one motivational stage to the next over the course of the four-week inpatient stay supports this hypothesis, as Prochaska and Norcross (2001) reported that if patients advanced one stage during the first month of treatment,

they doubled their chances of actively making substantial changes in the subsequent six months.

The recent APA Practice Guidelines for the Treatment of Patients with Eating Disorders (2006) suggest that adult patients who weigh less than 85% of their healthy weight have difficulty gaining weight outside of a highly structured program. The average weight of participants at the follow-up assessment was approximately 85% of healthy weight, and so ideally, patients should have been involved in a structured program during the follow-up period. Accordingly, of particular note is the significant difference between the groups regarding their treatment choices at the follow-up assessment, that is, 10-11 weeks after their inpatient admission. Nearly all of the participants who completed the MET groups were engaged in either inpatient or rigorous day patient care, whereas less than half of those in the TAU group were in these consistently intensive programs. This suggests that the patients in the MET group were more engaged in the recovery process, as their treatment options reflected sensible choices regarding continuity of care and adequacy of treatment for their level of illness. This is another important finding in the present study, which requires replication.

7.2.4 Qualitative indicators of differences between the two groups

Additionally, there were several qualitative indications of the effectiveness of the MET intervention. Specifically, patients in the MET group spontaneously reported insights that they had gained from the MET groups to other staff members and noted that they found the groups to be thought provoking. Other therapists reported that patients who had attended the groups appeared to have a better understanding of their disorder and were more willing to engage in discussions about change. Patients even asked therapists for more MET groups. Moreover, patients reported enjoying attending the groups and were generally found waiting for the MET therapist to arrive to commence the group. This observation is noteworthy when one considers that the inpatient eating disorders unit is generally a place of high treatment resistance and refusal, where patients must often be coerced to attend group therapy sessions. Suggesting that such interest could not be attributed to the specific therapist effects is the observation that the MET groups appeared to be more effective in engaging group

participation than behavioural groups (e.g., goal setting and problem solving) conducted by the same therapist. While tentative, these qualitative observations suggest that the MET approach in an inpatient setting warrants further investigation.

7.2.5 Discussion of recruitment and attrition of the sample

One of the major difficulties was the recruitment and attrition of the sample over the intervention and follow-up period. Whilst 63 patients were approached to take part in the study, only 42 consented. This loss of 33% of potential participants is comparable to the 39% loss of potential participants in the Feld et al. (1999) study, and the 33% loss in the Treasure et al. (1999) study. A higher rate of consent may have been expected in the current study, where patients were in the inpatient unit and did not have to travel to attend groups and also had time to complete questionnaires. However, many of these patients had already completed a number of questionnaires for other research studies during their current and previous hospitalisations, and were disinclined to engage in any further research. Perhaps not surprisingly, those patients who refused to consent for the study appeared, according to hospital staff, to be the least motivated to engage in the hospital program. This observation corresponds with Treasure et al's (1999) remark that the best measure of motivation to recover from an eating disorder may in fact be willingness to complete questionnaires regarding readiness to change. Hence, perhaps these patients would have been the most likely to benefit from the MET groups, had they been motivated to attend them. These difficulties in recruitment highlight the ambivalence that exists in this patient population and further emphasises the need to address motivation as part of the standard treatment package, rather than as an option as it necessarily had to be in the current research trial.

Of the 42 patients who commenced the study, 35 completed the post-treatment questionnaires. The reasons for not completing the post-treatment assessment allude to some possible benefits of the MET intervention in fostering engagement with treatment, as two of the three participants who did not complete them from the MET group did so as they had been discharged prior to the conclusion of the four week treatment in accordance with medical advice. In contrast, all three of the participants who did not complete the set of questionnaires from the TAU group did so due to

reasons of treatment refusal or illness denial. Furthermore, only 11% of patients from the MET group who completed the post-treatment questionnaires neglected to return the follow-up questionnaires, compared with 31% from the TAU group. This is unlikely to be solely due to patients in the MET group knowing the researcher and thus feeling obliged to return questionnaires, as patients in the TAU group also knew the researcher through her clinical position within the unit. Instead, the differences in follow-up attrition rate may have reflected greater engagement with the treatment setting among participants in the MET groups versus those in the TAU group.

A comparison was conducted to determine if there were any differences between the patients who did not complete the study and the patients who did complete the study in order to determine if the study consisted of a biased sample. Somewhat surprisingly, drop-outs at either post-treatment or follow-up appeared to be better functioning than completers at pre-treatment, with higher levels of motivation, fewer eating, weight and shape concerns and a better awareness of the burdens of having the illness. Perhaps those patients experiencing greater motivational deficits and more severe symptomatology at pre-treatment had the most to benefit from hospitalisation and therefore remained in treatment and in the study, either due to their own accord or due to encouragement from staff and family. Furthermore, potentially those patients with higher initial motivational levels felt more confident about their ability to recover on their own, outside of a formal treatment setting and consequently disengaged from the study.

7.3 How might the MET intervention have fostered motivation to change?

The results of the current study suggest that a brief motivationally informed group intervention embedded within an intensive hospital treatment program for patients with eating disorders of a primarily anoretic nature may be useful in helping patients to consolidate the gains they make by fostering longer term motivation and engagement, providing a sense of alliance with the treating team, and promoting treatment continuation. The question then arises about how the addition of four MET sessions might have promoted such changes more successfully than the standard hospital program alone.

Perhaps placing mainly non-action oriented patients in an action based hospital treatment program resulted in a decrease in motivation to recover over time that was surmounted by participation in the MET groups. In fact, one of the most resounding and frequent comments made by the patients was that the presence of the non-confrontational, empathetic tone of the MET intervention communicated that the treating team was acknowledging their struggle with recovery.

This interpretation is consistent with one implication from the transtheoretical model (Prochaska & DiClemente, 1982), namely, the "Matching Hypothesis", which postulates that treatment should be tailored to the patient's stage of readiness to change. A purely action-oriented therapeutic approach is thus hypothesised to be unsuitable for patients in pre-action stages of change (Prochaska & Norcross, 2001). Such patients are assumed to benefit from interventions that match their motivational status, such as MET. The matching hypothesis serves as a useful explanation for the results of the MET versus TAU groups in the current study, in which 86% of the entire patient sample was best classified as being in a pre-action stage of change at the commencement of the trial and are therefore potentially more likely to benefit from treatment that involved a motivational element.

Whilst the matching hypothesis was not supported in the large Project MATCH trial for alcohol abuse (Project MATCH Research Group, 1998), the current project, which embedded MET within an action focussed program, differed from Project MATCH which examined MET as a stand-alone treatment, separate from any cognitive behavioural approach. Conceivably, as Vitousek and colleagues (1998) suggested, ambivalence is best resolved through direct experience and the concurrent nature of the MET intervention and the general hospital program resulted in an environment in which a patient could immediately experiment with behavioural change, should they experience even a fleeting increase in motivation to recover.

7.4 Discussion of the strengths of the current study

The main strength of this study is that it is the first, to the author's knowledge, that has systematically examined the use of MET for inpatient eating disorder sufferers. Whilst concerns about poor motivation in this setting have been raised and discussed

for decades, and more recently assessed, the important issue of investigating treatment that aims to improve motivation amongst inpatients is still novel. Thus, this study is an important step in opening the dialogue about the methods by which motivation to recover can be fostered in an inpatient setting.

Unlike the two earlier investigations of MET for eating disorders (Feld et al., 2001; Treasure et al, 1999), the present study utilised a self-report measure of motivation to change that was developed and validated specifically for eating disordered attitudes and behaviours. The paper by Geller and colleagues (2006) also used a specific eating disorders based measure (the Readiness and Motivation Interview; Geller & Drab, 1999), however, this interview potentially functioned as a short motivational session, thus contaminating the control condition. The current study thus employed perhaps the best method for capturing changes in motivation amongst this patient group.

Like these previous studies, another strength of the current study is that it followed a detailed treatment manual which covered the topics for each session and associated handouts, along with details about the tone in which the session should be conducted. A further strength is that the treatment manual used for the present study was based on that used by Feld et al. (2001), facilitating a direct comparison with the results obtained in this earlier study. Furthermore, the current study had very few exemption criteria, with all patients who were well enough to attend the standard hospital group program, eligible to attend the MET groups. The sample is thus extremely representative of the type of patients treated within the Peter Beumont Centre for Eating Disorders at Wesley Hospital in Sydney. The inclusion of patients with various eating disorder diagnoses, varying treatment histories (ranging from those who were being treated for the first time to those who had had numerous inpatient and outpatient therapies), co-morbid conditions, and varying illness durations further aids the generalisation of the results. An additional strength of the study is that all groups were run by the author, overcoming difficulties associated with specific therapist factors when interventions are implemented by different clinicians.

7.5 Discussion of the limitations of the current study

Whilst there were no overt groups of MET conducted within the standard treatment program during the course of the study, the overall principles and tone (Geller et al., 2001) of the motivational interviewing approach were very much incorporated into the unit. For instance, many of the nursing staff had been instructed in the principles of "rolling with resistance", expressing empathy, and supporting self-efficacy, as had the therapy staff. Thus nurses used MET techniques to facilitate eating behaviours, and to encourage a cessation of vomiting, bingeing, and exercising. As such a large proportion of patients' interactions with staff on the unit were in accordance with a motivational stance. Hence, all patients in the study received some sort of motivational intervention, even those in the standard treatment group. This problem in conducting research within a specialised unit is common. Wiseman and colleagues (2002) noted the difficulties of attempting to examine brief therapeutic interventions within highly structured inpatient units, and their study comparing a brief CBT intervention with a brief psychoeducation program against a background of a cognitive-behaviourally oriented unit, experienced similar difficulties. Geller et al. (2006) also noted that their motivationally informed standard assessment procedure "contaminated" the control group in their randomised trial of a brief motivational intervention, by introducing a motivational tone and approach to this group.

This problem could have perhaps been lessened by also running the MET groups in an additional inpatient unit in which MET and other motivational approaches were not so well known. However, given that different units are run very differently, expanding the study to more than one inpatient unit would have compromised the results as the patients in the TAU group would have received quite different "standard" treatment depending on which unit they had attended. Furthermore, given MET's growing popularity it could be difficult to find a non-motivationally informed hospital unit in which no staff member had been trained in the tone or techniques of motivational interviewing or MET.

Another limitation of the present study is the small sample size, which no doubt reduced the power of the study. The small sample size also complicated the statistical analyses that needed to be undertaken. However, the number of questionnaires and

associated analyses are considered justified due to the preliminary nature of the study, being the first time that MET has systematically been examined within an inpatient eating disorder setting. The short follow-up period also limits the conclusions from the current study.

7.6 Implications from the current study and directions for future research

The use of MET in the eating disorders field is gathering support. Recently other teams of clinicians and researchers have started to view the inpatient setting as an area in which motivational interventions could be beneficial, with a randomised trial of individual motivational interviewing for inpatient AN sufferers currently being implemented by Wade and collaborators in South Australia (T. Wade, personal communication, September 11, 2006). However, the efficacy of a short-term group inpatient MET interventions for eating disorders has not previously been tested. This study clearly indicates that the current cognitive-behaviourally oriented inpatient program was significantly effective in improving eating disordered behaviours and psychological traits, and in increasing motivation to recover, self-efficacy, and treatment engagement. Moreover, these improvements were maintained over the short follow-up period. However, when compared to patients who received a brief group program of MET in addition to hospital treatment, patients in the TAU condition appeared to show a reduction in motivation to recover and in engagement in appropriate continued care for their stage of illness recovery at the six-week follow-up.

These promising findings, along with the qualitative indictors of success, suggest that further research into MET for eating disorders is warranted. In order to surmount the shortcomings of the current study, it would be beneficial to replicate this program with a larger sample of inpatients and over a longer follow-up period. Given the range of psychological approaches utilised for eating disorder treatment, and the predominantly CBT approach of this unit, it would also be beneficial to implement the MET groups as a treatment adjunct in settings that have other psychological orientations (e.g., family therapy, IPT, and psychodynamic psychotherapy). This would help to establish the generalisation of the MET approach.

The design of the current study, with groups held weekly for four weeks, was adopted in order to allow for comparisons with earlier studies in which sessions were administered on a weekly basis (e.g. Feld et al., 1999). Given that motivation (as measured by the contemplation ladders) was found to increase between each of the four MET sessions, conceivably hospital outcomes could be best enhanced by the MET sessions being implemented in a more intensive way (e.g., all four groups being undertaken in the first week of admission). Given the current trend towards shorter hospital admissions, such an intensive approach could be meritorious.

The present study accomplished the overall objectives of developing and implementing a group Motivational Enhancement Therapy intervention for inpatient eating disorder sufferers whilst simultaneously evaluating the outcome of brief hospitalisation. It is hoped that the results serve to enhance understanding regarding the optimal use of this motivational therapeutic approach for the notoriously difficult to treat inpatient eating disorder group.

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Appendix A

Letters of Ethical Approval

1. The Human Research Ethics Committee of the University of Sydney
2. Central Sydney Area Health Service (RPAH Zone)
3. Wesley Mission, Wesley Private Hospital

Appendix B

Participant Information Sheets and Consent Forms

Psychology Clinic
School of Psychology
University of Sydney

CONSENT FORM

I, ... , give consent to my participation in the research project
Name (please print)

TITLE: **A Study of Motivational Enhancement Therapy for Eating Disorders**

In giving my consent I acknowledge that:

1. The procedures required for the project have been explained to me, and any questions I have about the project have been answered to my satisfaction.

2. I have read the Participant Information Statement and have been given the opportunity to discuss the information and my involvement in the project with the researcher/s.

3. I understand that I can withdraw from the study at any time, without affecting my treatment or my relationships with the researcher(s) now or in the future.

4. I understand that my involvement is strictly confidential and no information about me will be used in any way that reveals my identity.

5. I give permission for the researchers to access my hospital records.

Signed: ..... **Date**: .....

Name: .....

Psychology Clinic
School of Psychology
University of Sydney

PARENTAL (OR GUARDIAN) CONSENT FORM

I,..... agree to permit……..,

who is aged ..... years, to participate as a participant in the study described in the Parental Information Statement attached to this form.

TITLE: **A Study of Motivational Enhancement Therapy for Eating Disorders**

1. I acknowledge that I have read the Information Statement, which explains the aims and the nature of the study and the possible risks, and the statement has been explained to me to my satisfaction.

2. Before signing this Consent Form, I have been given the opportunity of asking any questions relating to any possible physical and mental harm my child might suffer as a result of participation and I have received satisfactory answers.

3. I understand that I can withdraw my child from the study at any time without prejudice to my or my child's relationship to the University and to the Hospital (Wesley Private Hospital).

4. I agree that research data gathered from the results of the study may be published provided that neither my child nor I can be identified.

5. I give permission for the researchers to access my child's hospital records.

6. I understand that if I have any questions relating to my child's participation in this research, I may contact Helen Dean on telephone 0404 040 853, who will be happy to answer them.

7. I acknowledge receipt of a copy of this Consent Form and the Information Statement.

.....	.....
Signature of Child	Signature of Witness
.....	.....
Please PRINT name	Please PRINT name
.....	.....
Date	Nature of Witness

.....
Signature of Parent/Guardian

.....
Please PRINT name

……
Date

Psychology Clinic
School of Psychology (F12)
University of Sydney NSW 2006

Telephone: (02) 9351-2629
Fax: (02) 9351-7328

Psychology Clinic
School of Psychology
University of Sydney

PARTICIPANT INFORMATION STATEMENT

Research Project

Title: A Study of Motivational Enhancement Therapy for Eating Disorders

(1) What is the study about?

The treatment program that is routinely run in hospital is effective for many patients with eating disorders. This study aims to investigate whether providing patients with an additional brief intervention of Motivational Enhancement Therapy positively impacts upon psychological, behavioural and physical function. Motivational Enhancement Therapy is a treatment designed to assist patients' motivation to change by exploring and resolving their concerns about change. The few existing studies that have looked at Motivational Enhancement Therapy with eating disorder sufferers have had some promising results.

(2) Who is carrying out the study?

Helen Dean, Intern Clinical Psychologist within the Clinical Psychology Unit, School of Psychology, University of Sydney, is carrying out the study. Professor Stephen Touyz, Associate Head, Clinical Psychology Unit, Dr Elizabeth Rieger and Mr Christopher Thornton are supervising the project. This study will form the basis of Helen Dean's degree of Doctor of Clinical Psychology/Master of Science.

(3) What does the study involve?

If you choose to participate, you will be allocated to the Motivational Enhancement Therapy group. You will be asked to participate in the group treatment program, which includes in-session exercises and discussion and some out of session exercises. You will also be asked to complete some questions about your behaviour and thinking and to fill out questionnaires. The researchers request your permission to access your general hospital records to obtain details about your physical measures. With your permission, some components of therapy may be audio taped.

In addition, the researchers would like to have access to your medical record to obtain information relevant to this study.

(4) How much time will the study take?

The treatment consists of four 1 ½ hour long sessions. These will be built into your existing hospital treatment plan and will run at the hospital. Completion of questionnaires and other self-report measures will take approximately 2 ½ hours spread over the course of the intervention. Questionnaires will be completed just prior to commencing the group program, and again just after completing the four sessions (taking approximately 45 min on each occasion). Simple questionnaires will also be completed after each session (approximately 5 min. on each occasion). You will also be asked to complete a small selection of questionnaires six weeks after completing the four session intervention (taking approximately 30 min).

(5) Can I withdraw from the study?

Being in this study is completely voluntary - you are not under any obligation to consent and, if you do participate, you can withdraw at any time. Whatever your decision, it will not affect your medical or psychological treatment nor your relationship with any hospital or university staff.

(6) Will anyone else know the results of my tests?

All aspects of the study, including results will be strictly confidential except as required by law. Only the investigators will have access to information about participants. Questionnaires and other data will be kept for the duration of the project in a locked filing cabinet in the office of the researcher and afterwards files will be kept for 15 years in a locked cabinet within the Clinical Psychology Unit. All data will then be destroyed. A report of the study may be submitted for publication in a reputable scientific journal and may be presented at local and international conferences, but individual participants will not be identifiable.

(7) Will the study benefit me?

It is anticipated that you may benefit from receiving this treatment in addition to your standard hospital treatment.

(8) What if there's a problem and how do I get further information?

When you have read this information, Helen Dean will discuss it with you further and answer any questions you may have. If you would like to know more at any stage, please feel free to contact Helen Dean, Intern Clinical Psychologist, on 0404 040 853 or Professor Stephen Touyz on (02) 9351-2646. This information is for you to keep.

This study has been approved by the Ethics Review Committee (RPAH Zone) of the Central Sydney Area Health Service. Any person with concerns or complaints about the conduct of a research study can contact the Secretary on 02 9515 6766.

Psychology Clinic
School of Psychology
University of Sydney

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Completion of questionnaires and other self-report measures will take approximately 2 ½ hours spread over 10 weeks. Questionnaires will be completed if/when you consent to taking part in the study, and again after four weeks (taking approximately 45 min on each occasion). Simple questions will also be completed weekly for four weeks (approximately 5 min. on each occasion). You will also be asked to complete a small selection of questionnaires six weeks after completing the second lot of questionnaires (taking approximately 30 min).

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journal and may be presented at local and international conferences, but individual participants will not be identifiable.

(7) Will the study benefit me?

While we intend that this study will further psychological knowledge and improve understanding of appropriate treatment of eating disorders in the future, it may not be of direct benefit to you.

(9) What if there's a problem and how do I get further information?

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In addition, the researchers would like to have access to your child's medical record to obtain information relevant to this study.

(4) How much time will the study take?

Completion of questionnaires and other self-report measures will take approximately 2 ½ hours spread over 10 weeks. Questionnaires will be completed if/when you and your child consent to taking part in the study, and again after four weeks (taking approximately 45 min on each occasion). Simple questions will also be completed weekly for four weeks (approximately 5 min. on each occasion). Your child will also be asked to complete a small selection of questionnaires six weeks after completing the second lot of questionnaires (taking approximately 30 min).

(5) Can my child withdraw from the study?

Being in this study is completely voluntary - you and your child are not under any obligation to consent and, if you do participate, you can withdraw at any time. Whatever your decision, it will not affect your child's medical or psychological treatment nor your, or your child's, relationship with any hospital or university staff.

(6) Will anyone else know the results of my child's tests?

All aspects of the study, including results will be strictly confidential except as required by law. Only the investigators will have access to information about participants. Questionnaires and other data will be kept for the duration of the project in a locked filing cabinet in the office of the researcher and afterwards files will be kept for 15 years in a locked cabinet within the Clinical Psychology Unit. All data will then be destroyed. A report of the study may be submitted for publication in a reputable scientific
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Appendix C

Copies of Questionnaires

- Demographics questionnaire
- The Anorexia Nervosa Stages of Change Questionnaire (ANSOCQ; Rieger et al., 2000)
- The Anorexia Nervosa Stages of Change Questionnaire (modified)
- Decisional Balance Scale for Anorexia (DBS; Cockell, Geller, & Linden, 2002)
- Decisional Balance Scale for Bulimia (modified from DBS)
- Self efficacy scale (SES; Rieger et al., 2002)
- Contemplation ladders (Rieger et al., 2000)
- Treatment Engagement questionnaire (TERS; Rieger et al., 2000)
- Eating Disorders Examination Questionnaire (EDE-Q; Fairburn & Beglin, 1994)
- Eating Disorder Inventory 2 (EDI-2; Garner, 1991)
- Beck Depression Inventory II (BDI-II; Beck, Steer & Brown, 1996)

ID: _____

Some general questions about you

Date of birth: _____ Age: _____

1. What is your marital status?
- ☐ Never married
- ☐ Married / de facto
- ☐ Divorced / separated
- ☐ Widowed
- ☐ Have a boyfriend/girlfriend
- ☐ Other

2. What is the highest education qualification you have obtained?
- ☐ Year 9 or below
- ☐ Year 10 (School Certificate)
- ☐ Year 12 (HSC)
- ☐ TAFE certificate/diploma
- ☐ Part of a University degree (e.g. if you are still studying)
- ☐ Completed University degree
- ☐ Higher degree (postgraduate)

2a. If you are currently studying, what Year at school are you in, or what year of uni/TAFE and what degree/diploma?

_____

3. What is your occupation?

_____

4. In which country were you born? ☐ Australia ☐ Other _____
(please specify)

5. Do you speak a language other than English at home?
- ☐ No, only English
- ☐ Yes, also I speak _____

6. How long have you suffered from an eating disorder? _____ months

7. What previous treatment have you had for eating issues? (please tick all that apply)
- ☐ Inpatient hospitalisation. How many admissions have you had and which hospital/s?

  _____

  _____

- ☐ Day patient program
- ☐ Outpatient treatment with psychiatrist
- ☐ Outpatient treatment with psychologist
- ☐ Outpatient treatment with dietician
- ☐ Other (please specify)

_____

_____

ANSOCQ

DIRECTIONS: Each of the items below is made up of five statements. For each item, please read the five statements carefully and select the one which best describes your current attitude or behaviour (not how you have been in the past or how your would like to be).

1. The following statements refer to gaining weight:

- As far as I am concerned I do not need to gain weight.
- In some ways I think that I might be better off if I gained weight.
- I have decided that I will attempt to gain weight.
- At the moment I am putting in a lot of effort into gaining weight.
- I am working to maintain the weight gains I have made.

2. The following statements refer to body weight:

- As far as I am concerned I do not need to weigh at least _____ kg (insert your minimal normal weight).
- In some ways I think that I might be better off if I weighed at least _____ kg.
- I have decided that I will attempt to reach a weight of at least _____ kg.
- At the moment I am putting in a lot of effort to reach a weight of at least _____ kg.
- I am working to maintain a weight of at least _____ kg.

3. The following statements refer to parts of your body which may particularly concern you in terms of weight gain (such as hips, thighs, stomach or buttocks):

- There is no way I would be prepared to gain weight on these body parts.
- Sometimes I think I would be prepared to gain weight on these body parts.
- I have decided that I am prepared to gain weight on these body parts.
- I am presently trying to gain weight on these body parts.
- I am working to maintain the weight I gained on these body parts.

4. The following statements refer to your appearance:

- I do not want to be a normal weight because I would be less satisfied with my appearance at a weight of at least _____ kg (insert your minimal normal

weight).

- I have occasionally thought about being a normal weight because in some ways I would be more satisfied with my appearance at a weight of at least _____ kg.
- I have decided to reach a normal weight because I would be more satisfied with my appearance at a weight of at least _____ kg.
- I am presently trying to reach a normal weight because I will be more satisfied with my appearance at a weight of at least _____ kg.
- I am working to maintain a normal weight because I am more satisfied with my appearance at a weight of at least _____ kg.

5. The following statements refer to your health:

- I do not need to be a normal weight because there are no risks to my health when I weigh below _____ kg (insert your minimal normal weight).
- I have occasionally thought about being a normal weight because of the risks to my health when I weigh below _____ kg.
- I have decided to reach a normal weight because of the risks to my health when I weigh below _____ kg.
- I am presently trying to reach a normal weight because of the risks to my health when I weigh below _____ kg.
- I am working to maintain a normal weight because of the risks to my health when I weigh below _____ kg.

6. The following statements refer to the importance of body shape and weight:

- ❑ I do not exaggerate the importance of my body shape or weight in determining my happiness and success.
- ❑ Sometimes I think that I exaggerate the importance of my body shape or weight in determining my happiness and success.
- ❑ I have decided that I need to reduce the importance that I place on my body shape or weight in determining my happiness and success.
- ❑ I often try to challenge the importance that I place on my body shape or weight in determining my happiness and success.
- ❑ I have succeeded in reducing my tendency to place too much importance on my body shape or weight in determining my happiness and success and want to stay this way.

7. The following statements refer to fear of fatness:

- ❑ My fear of becoming fat is not excessive.
- ❑ I occasionally think that my fear of becoming fat is excessive.
- ❑ I have decided that I need to do something about the fear I have of becoming fat because it is controlling me.
- ❑ I know that my fear of becoming fat has caused problems and I am now trying to correct this.
- ❑ I have succeeded in reducing my fear of becoming fat and want it to stay this way.

8. The following statements refer to weight loss:

- ❑ I would prefer to lose more weight.
- ❑ Sometimes I think that it might be time to stop losing weight.
- ❑ I have decided that it is time to stop losing weight.
- ❑ I am trying to stop losing weight.
- ❑ I have managed to stop losing weight and hope to stay this way.

9. The following statements refer to body fat versus muscle:

- I might think about gaining muscle on purpose, but I would never think of gaining fat on purpose.
- Sometimes I think that I may need to gain some fat even though I would prefer to have only muscle.
- I have decided that to be healthy I need to have some fat on my body.
- I realise that I need to have some fat on my body and am working to achieve this.
- I have managed to increase the level of fat on my body which I am trying to maintain.

10. The following statements refer to the rate of weight gain:

- There is no way I would be prepared to gain at least 1 kg a week.
- Sometimes I think I would be prepared to gain at least 1 kg a week.
- I have decided that in general it would be best for me to gain at least 1 kg a week.
- I am putting in a lot of effort to gain at least 1 kg a week.
- I am working to maintain my weight but would be prepared to gain at least 1 kg a week if necessary.

11. The following statements refer to certain shape and weight standards which you may have for evaluating your body (such as only being satisfied with your body when your thighs are not touching, when specific bones can be seen, when your stomach is flat, when you are below a certain weight or when you fit into certain clothes):

- The standards I use to evaluate my body are not too strict.
- Sometimes I think that the standards I use to evaluate my body may be too strict.
- I have decided that the standards I use to evaluate my body are too strict and need to be changed.
- I am putting in a lot of effort to change the strict standards which I use to evaluate my body.
- I have managed to let go of the strict standards which I used in the past to evaluate my body and am hoping to keep it this way.

12. The following statements refer to certain foods which you may avoid eating (such as foods high in calories or fat, red meat, dairy products or food where the caloric content is not known):

- There are certain foods which I strictly avoid and would not even consider eating.
- There are certain foods which I try to avoid, although sometimes I think that it might be okay to eat them occasionally.
- I think that I am too strict in the foods which I allow myself to eat and have decided that I will attempt to eat foods which I usually avoid.
- I am putting in a lot of effort to regularly eat foods which I usually avoid.
- I used to avoid eating certain foods which I now eat regularly.

13. The following statements refer to daily food consumption:

- There is no need for me to eat 3 standard-size meals and a snack each day.
- Sometimes I think that I should eat 3 standard-size meals and a snack each day.
- I have decided that I need to eat 3 standard-size meals and a snack each day.
- I am putting in a lot of effort to eat 3 standard-size meals and a snack each day.
- I am working to maintain a current eating pattern which includes 3 standard-size meals and a snack each day.

14. The following statements refer to time spent thinking about your weight (such as thoughts about becoming fat, counting the calories or fat content of food, or calculating the amount of energy used when exercising):

- There is nothing wrong with the amount of time I spend thinking about my weight.
- The amount of time I spend thinking about my weight is a problem sometimes.
- I have decided that I need to use strategies to help me reduce the amount of time I spend thinking about my weight.
- I am using strategies to help me reduce the amount of time I spend thinking about my weight.
- I used to spend too much time thinking about my weight which I have managed to reduce and hope to keep it this way.

15. The following statements refer to certain eating behaviours (such as needing to eat food at a specific rate or time, being unable to eat from a full plate, moving food around on the plate, being unable to eat all the food on a plate, taking longer than others to eat meals, having difficulty eating with others, needing to chew food a certain number of times, not allowing food to touch your lips, needing to eat food in a specific order or needing to stick to the same food plan each day):

- ❑ There is nothing that I need to change about the way I eat my meals.
- ❑ I sometimes think that I need to change aspects of the way I eat my meals.
- ❑ I have decided that I will try to change aspects of the way I eat my meals.
- ❑ I am putting in a lot of effort to change aspects of the way I eat my meals.
- ❑ I have succeeded in changing aspects of the way I eat my meals and want it to stay this way.

16. The following statements refer to feelings associated with eating (such as feeling guilty, anxious or bloated) and not eating (such as feeling successful, in control or spiritually stronger):

- ❑ There is no need for me to change the feelings I associate with eating and not eating.
- ❑ I sometimes think that I need to change the feelings I associate with eating and not eating.
- ❑ I have decided that I will try to change the feelings I associate with eating and not eating.
- ❑ I am putting in a lot of effort to change the feelings I associate with eating and not eating.
- ❑ I have succeeded in changing the feelings I associate with eating and not eating and want it to stay this way.

17. The following statements refer to methods which you may use to control your weight (such as restricting your eating, exercising, vomiting, taking laxatives or other pills). You may select more than one statement for the different methods you use to control your weight. Please indicate which weight control method/s you are referring to in the blank space/s provided.

- ❑ There is nothing seriously wrong with the methods (_____) I use to control my weight.
- ❑ I have been thinking that there may be problems associated with the methods (_____) I use to control my weight.
- ❑ I have decided that I will attempt to stop using certain methods (_____) to control my weight.
- ❑ I am putting in a lot of effort to stop using certain methods (_____) to control my weight.
- ❑ I have managed to stop using certain methods (_____) to control my weight and I would like to keep it this way.

18. The following statements refer to certain emotional problems (such as feeling depressed, anxious or irritable):

- ❑ I do not have any emotional problems which I need to work on.
- ❑ I sometimes think that I may have certain emotional problems which I need to work on.
- ❑ I have certain emotional problems which I have decided to work on.
- ❑ I am actively working on my emotional problems.
- ❑ My emotional problems have improved and I am trying to keep it this way.

19. The following statements refer to certain characteristics (such as perfectionism, low self esteem or feeling a sense of lack of control over your life):

- ❑ I do not have any problems in the way I approach life which I need to work on.
- ❑ I sometimes think that I may have certain problems in the way I approach life which I need to work on.
- ❑ I have certain problems in the way I approach life which I have decided to work on.
- ❑ I am actively working on problems in the way I approach life.
- ❑ The problems in the way I approach life have improved and I am trying to keep it this way.

20. The following statements refer to relationship problems (such as relationships with family or friends):

- ❑ I do not have any problems in my relationships with others which I need to work on.
- ❑ I sometimes think that I may have certain problems in my relationships with others which I need to work on.
- ❑ I have certain problems in my relationships with others which I have decided to work on.
- ❑ I am actively working on problems in my relationships with others.
- ❑ The problems in my relationships with others have improved and I am trying to keep it this way.

ANSOCQ modified

DIRECTIONS: Each of the items below is made up of five statements. For each item, please read the five statements carefully and select the one which best describes your current attitude or behaviour (not how you have been in the past or how you would like to be).

1. The following statements refer to parts of your body which may particularly concern you in terms of weight gain (such as hips, thighs, stomach or buttocks):

- There is no way I would be prepared to gain weight on these body parts.
- Sometimes I think I would be prepared to gain weight on these body parts.
- I have decided that I am prepared to gain weight on these body parts.
- I am presently trying to gain weight on these body parts.
- I am working to maintain the weight I gained on these body parts.

2. The following statements refer to the importance of body shape and weight:

- I do not exaggerate the importance of my body shape or weight in determining my happiness and success.
- Sometimes I think that I exaggerate the importance of my body shape or weight in determining my happiness and success.
- I have decided that I need to reduce the importance that I place on my body shape or weight in determining my happiness and success.
- I often try to challenge the importance that I place on my body shape or weight in determining my happiness and success.
- I have succeeded in reducing my tendency to place too much importance on my body shape or weight in determining my happiness and success and want to stay this way.

3. The following statements refer to fear of fatness:

- My fear of becoming fat is not excessive.
- I occasionally think that my fear of becoming fat is excessive.
- I have decided that I need to do something about the fear I have of becoming

fat because it is controlling me.

- I know that my fear of becoming fat has caused problems and I am now trying to correct this.
- I have succeeded in reducing my fear of becoming fat and want it to stay this way.

4. The following statements refer to weight loss:

- I would prefer to lose more weight.
- Sometimes I think that it might be time to stop losing weight.
- I have decided that it is time to stop losing weight.
- I am trying to stop losing weight.
- I have managed to stop losing weight and hope to stay this way.

5. The following statements refer to body fat versus muscle:

- I might think about gaining muscle on purpose, but I would never think of gaining fat on purpose.
- Sometimes I think that I may need to gain some fat even though I would prefer to have only muscle.
- I have decided that to be healthy I need to have some fat on my body.
- I realise that I need to have some fat on my body and am working to achieve this.
- I have managed to increase the level of fat on my body which I am trying to maintain.

6. The following statements refer to certain shape and weight standards which you may have for evaluating your body (such as only being satisfied with your body when your thighs are not touching, when specific bones can be seen, when your stomach is flat, when you are below a certain weight or when you fit into certain clothes):

- The standards I use to evaluate my body are not too strict.
- Sometimes I think that the standards I use to evaluate my body may be too strict.
- I have decided that the standards I use to evaluate my body are too strict and need to be changed.
- I am putting in a lot of effort to change the strict standards which I use to

evaluate my body.

- I have managed to let go of the strict standards which I used in the past to evaluate my body and am hoping to keep it this way.

7. The following statements refer to certain foods which you may avoid eating (such as foods high in calories or fat, red meat, dairy products or food where the caloric content is not known):

- There are certain foods which I strictly avoid and would not even consider eating.
- There are certain foods which I try to avoid, although sometimes I think that it might be okay to eat them occasionally.
- I think that I am too strict in the foods which I allow myself to eat and have decided that I will attempt to eat foods which I usually avoid.
- I am putting in a lot of effort to regularly eat foods which I usually avoid.
- I used to avoid eating certain foods which I now eat regularly.

8. The following statements refer to daily food consumption:

- There is no need for me to eat 3 standard-size meals and a snack each day.
- Sometimes I think that I should eat 3 standard-size meals and a snack each day.
- I have decided that I need to eat 3 standard-size meals and a snack each day.
- I am putting in a lot of effort to eat 3 standard-size meals and a snack each day.
- I am working to maintain a current eating pattern which includes 3 standard-size meals and a snack each day.

9. The following statements refer to time spent thinking about your weight (such as thoughts about becoming fat, counting the calories or fat content of food, or calculating the amount of energy used when exercising):

- There is nothing wrong with the amount of time I spend thinking about my weight.
- The amount of time I spend thinking about my weight is a problem sometimes.
- I have decided that I need to use strategies to help me reduce the amount of time I spend thinking about my weight.

- ❑ I am using strategies to help me reduce the amount of time I spend thinking about my weight.
- ❑ I used to spend too much time thinking about my weight which I have managed to reduce and hope to keep it this way.

10. The following statements refer to certain eating behaviours (such as needing to eat food at a specific rate or time, being unable to eat from a full plate, moving food around on the plate, being unable to eat all the food on a plate, taking longer than others to eat meals, having difficulty eating with others, needing to chew food a certain number of times, not allowing food to touch your lips, needing to eat food in a specific order or needing to stick to the same food plan each day):

- ❑ There is nothing that I need to change about the way I eat my meals.
- ❑ I sometimes think that I need to change aspects of the way I eat my meals.
- ❑ I have decided that I will try to change aspects of the way I eat my meals.
- ❑ I am putting in a lot of effort to change aspects of the way I eat my meals.
- ❑ I have succeeded in changing aspects of the way I eat my meals and want it to stay this way.

11. The following statements refer to feelings associated with eating (such as feeling guilty, anxious or bloated) and not eating (such as feeling successful, in control or spiritually stronger):

- ❑ There is no need for me to change the feelings I associate with eating and not eating.
- ❑ I sometimes think that I need to change the feelings I associate with eating and not eating.
- ❑ I have decided that I will try to change the feelings I associate with eating and not eating.
- ❑ I am putting in a lot of effort to change the feelings I associate with eating and not eating.
- ❑ I have succeeded in changing the feelings I associate with eating and not eating and want it to stay this way.

12. The following statements refer to methods which you may use to control your weight (such as restricting your eating, exercising, vomiting, taking laxatives or other

pills). You may select more than one statement for the different methods you use to control your weight. Please indicate which weight control method/s you are referring to in the blank space/s provided.

- ❑ There is nothing seriously wrong with the methods (_____) I use to control my weight.
- ❑ I have been thinking that there may be problems associated with the methods (_____) I use to control my weight.
- ❑ I have decided that I will attempt to stop using certain methods (_____) to control my weight.
- ❑ I am putting in a lot of effort to stop using certain methods (_____) to control my weight.
- ❑ I have managed to stop using certain methods (_____) to control my weight and I would like to keep it this way.

13. The following statements refer to certain emotional problems (such as feeling depressed, anxious or irritable):

- ❑ I do not have any emotional problems which I need to work on.
- ❑ I sometimes think that I may have certain emotional problems which I need to work on.
- ❑ I have certain emotional problems which I have decided to work on.
- ❑ I am actively working on my emotional problems.
- ❑ My emotional problems have improved and I am trying to keep it this way.

14. The following statements refer to certain characteristics (such as perfectionism, low self esteem or feeling a sense of lack of control over your life):

- ❑ I do not have any problems in the way I approach life which I need to work on.
- ❑ I sometimes think that I may have certain problems in the way I approach life which I need to work on.
- ❑ I have certain problems in the way I approach life which I have decided to work on.
- ❑ I am actively working on problems in the way I approach life.
- ❑ The problems in the way I approach life have improved and I am trying to keep it this way.

15. The following statements refer to relationship problems (such as relationships with family or friends):

- ❑ I do not have any problems in my relationships with others which I need to work on.
- ❑ I sometimes think that I may have certain problems in my relationships with others which I need to work on.
- ❑ I have certain problems in my relationships with others which I have decided to work on.
- ❑ I am actively working on problems in my relationships with others.
- ❑ The problems in my relationships with others have improved and I am trying to keep it this way.

THE BALANCE OF CHANGE

Many people say that there are **good things** and **bad things** about anorexia nervosa. Some of the good and bad things that people have talked about are listed below. Please rate how much each of the following statements apply to you, from not at all true, to completely true.

	Not at all true	A little true	Moderately true	Very true	Completely true
1. I hate the fact that anorexia controls my life					
2. Anorexia gives me self-control					
3. Because of anorexia, I don't have to deal with intimate adult relationships					
4. Because of anorexia, I feel guilty a lot of the time					
5. Being a very low weight makes me feel confident					
6. It bothers me that my weight controls my mood					
7. Anorexia helps me obtain an immediate goal					
8. As long as I am anorexic, I don't have to make definite plans for the future					
9. I don't it like that anorexia keeps me from eating out with others					
10. Being a very low weight makes me feel good about myself					
11. Anorexia is my way of avoiding deeper, more serious problems					
12. Anorexia makes me moody					
13. Being thinner than others makes me feel good about myself					
14. I spend too much time thinking about food, eating and calories					
15. I am fed up with thinking about my weight and/or shape					
16. Anorexia protects me from the difficulties of adult life					
17. I worry about the effect anorexia is having on my health					
18. Anorexia is my way of being perfect					
19. It bothers me that because of anorexia I can't prepare a meal for myself					

P.T.O.

	Not at all true	A little true	Moderately true	Very true	Completely true
20. I am tired of being sick with anorexia					
21. Anorexia makes me feel accomplished					
22. It bothers me that anorexia prevents me from sharing my feelings with others					
23. When I focus on eating, shape and weight, I do not have to deal with painful emotions					
24. It bothers me that anorexia leaves me with no energy					
25. Anorexia allows me to avoid making decisions					
26. It bothers me that anorexia keeps me from socializing					
27. Fitting into small sized clothes makes me feel good about myself					
28. I worry that because of anorexia I will not be able to have children					
29. Because of anorexia, I can avoid my fears about sex and/or my sexuality					
30. I have lost my freedom to anorexia					

SCORING KEY

Add up scores and divide by the number of items to produce a subscale score.

BURDENS

1 I hate the fact that anorexia controls my life
4 Because of anorexia, I feel guilty a lot of the time
6 It bothers me that my weight controls my mood
9 I don't like it that anorexia keeps me from eating out with others
12 Anorexia makes me moody
14 I spend too much time thinking about food, eating and calories
15 I am fed up with thinking about my weight and/or shape
17 I worry about the effect anorexia is having on my health
19 It bothers me that because of anorexia I can't prepare a meal or myself
20 I am tired of being sick with anorexia
22 It bothers me that anorexia prevents me from sharing my feelings with others
24 It bothers me that anorexia leaves me with no energy
26 It bothers me that anorexia keeps me from socializing
28 I worry that because of anorexia I will not be able to have children
30 I have lost my freedom to anorexia

BENEFITS

2 Anorexia gives me self-control
5 Being a very low weight makes me feel confident
7 Anorexia helps me obtain an immediate goal
10 Being a very low weight makes me feel good about myself
13 Being thinner than others makes me feel good about myself
18 Anorexia is my way of being perfect
21 Anorexia makes me feel accomplished
27 Fitting into small sized clothes makes me feel good about myself

AVOIDANCE COPING

3 Because of anorexia, I don't have to deal with intimate adult relationships
8 As long as I am anorexic, I do not have to make definite plans for the future
11 Anorexia is my way of avoiding deeper, more serious problems
16 Anorexia protects me from the difficulties of adult life
23 When I focus on eating shape and weight I do not have to deal with painful emotions
25 Anorexia allows me to avoid making decisions
29 Because of anorexia, I can avoid my fears about sex and/or my sexuality

THE BALANCE OF CHANGE

Many people say that there are **good things** and **bad things** about bulimia nervosa. Some of the good and bad things that people have talked about are listed below. Please rate how much each of the following statements apply to you, from not at all true, to completely true.

	Not at all true	A little true	Moderately true	Very true	Completely true
1. I hate the fact that bulimia controls my life					
2. Bulimia gives me self-control					
3. Because of bulimia, I don't have to deal with intimate adult relationships					
4. Because of bulimia, I feel guilty a lot of the time					
6. It bothers me that my weight controls my mood					
7. Bulimia helps me obtain an immediate goal					
8. As long as I am bulimic, I don't have to make definite plans for the future					
9. I don't it like that bulimia keeps me from eating out with others					
11. Bulimia is my way of avoiding deeper, more serious problems					
12. Bulimia makes me moody					
14. I spend too much time thinking about food, eating and calories					
15. I am fed up with thinking about my weight and/or shape					
16. Bulimia protects me from the difficulties of adult life					
17. I worry about the effect bulimia is having on my health					
18. Bulimia is my way of being perfect					
19. It bothers me that because of bulimia I can't prepare a meal for myself					

	Not at all true	A little true	Moderately true	Very true	Completely true
20. I am tired of being sick with bulimia					
21. Bulimia makes me feel accomplished					
22. It bothers me that bulimia prevents me from sharing my feelings with others					
23. When I focus on eating, shape and weight, I do not have to deal with painful emotions					
24. It bothers me that bulimia leaves me with no energy					
25. Bulimia allows me to avoid making decisions					
26. It bothers me that bulimia keeps me from socializing					
27. Fitting into small sized clothes makes me feel good about myself					
28. I worry that because of bulimia I will not be able to have children					
29. Because of bulimia, I can avoid my fears about sex and/or my sexuality					
30. I have lost my freedom to bulimia					

SES*

DIRECTIONS:

This questionnaire describes tasks which individuals with eating problems may find difficult. Please read each task described below and decide how confident (or certain) you are that you could do these tasks if you were asked to do them now. The "healthy weight" mentioned refers to a weight within the normal range for your height as described on the body mass index scale (see attached).

On a scale from 1 (not at all confident) to 10 (very confident), choose one number that reflects how confident you feel now about being able to *successfully* complete each task.

---

1. I can achieve (if over/underweight) or maintain (if currently normal weight) a healthy weight.

1	2	3	4	5	6	7	8	9	10
Not at all confident									Very confident

2. I can gain weight on parts of my body which particularly concern me (such as hips, buttocks, stomach).

1	2	3	4	5	6	7	8	9	10
Not at all confident									Very confident

3. I can be satisfied with my appearance when I weigh a healthy weight.

1	2	3	4	5	6	7	8	9	10
Not at all confident									Very confident

4. I can reduce the importance I place on my body shape or weight in determining my happiness and success.

1	2	3	4	5	6	7	8	9	10
Not at all confident									Very confident

5. I can reduce my fear of becoming or being fat.

1	2	3	4	5	6	7	8	9	10
Not at all confident									Very confident

6. I can stop trying to lose weight

1	2	3	4	5	6	7	8	9	10
Not at all confident									Very confident

7. I can accept gaining muscle *and* fat

1	2	3	4	5	6	7	8	9	10
Not at all confident									Very confident

8. I can change the strict standards which I use to evaluate my body (such as only being satisfied with your body when your stomach is flat).

1	2	3	4	5	6	7	8	9	10
Not at all confident									Very confident

9. I can regularly eat foods (in moderation, without bingeing) which I usually try to avoid (such as foods high in fat or calories).

1	2	3	4	5	6	7	8	9	10
Not at all confident									Very confident

10. I can eat 3 standard size meals and a snack each day.

1	2	3	4	5	6	7	8	9	10
Not at all confident									Very confident

11. I can reduce the amount of time I spend thinking about food and my weight.

1	2	3	4	5	6	7	8	9	10
Not at all confident									Very confident

12. I can change aspects of the way I eat my meals (such as needing to eat food at a specific rate or time).

1	2	3	4	5	6	7	8	9	10
Not at all confident									Very confident

13. I can change the feelings that I associate with eating (such as feeling guilty) and not eating (such as feeling in control).

1	2	3	4	5	6	7	8	9	10
Not at all confident									Very confident

14. I can stop using certain methods to control my weight (such as restricting your eating, vomiting etc).

1	2	3	4	5	6	7	8	9	10
Not at all confident									Very confident

15. I can improve my emotional problems (such as feeling depressed).

1	2	3	4	5	6	7	8	9	10
Not at all confident									Very confident

16. I can improve problems in the way I approach life (such as perfectionism).

1	2	3	4	5	6	7	8	9	10
Not at all confident									Very confident

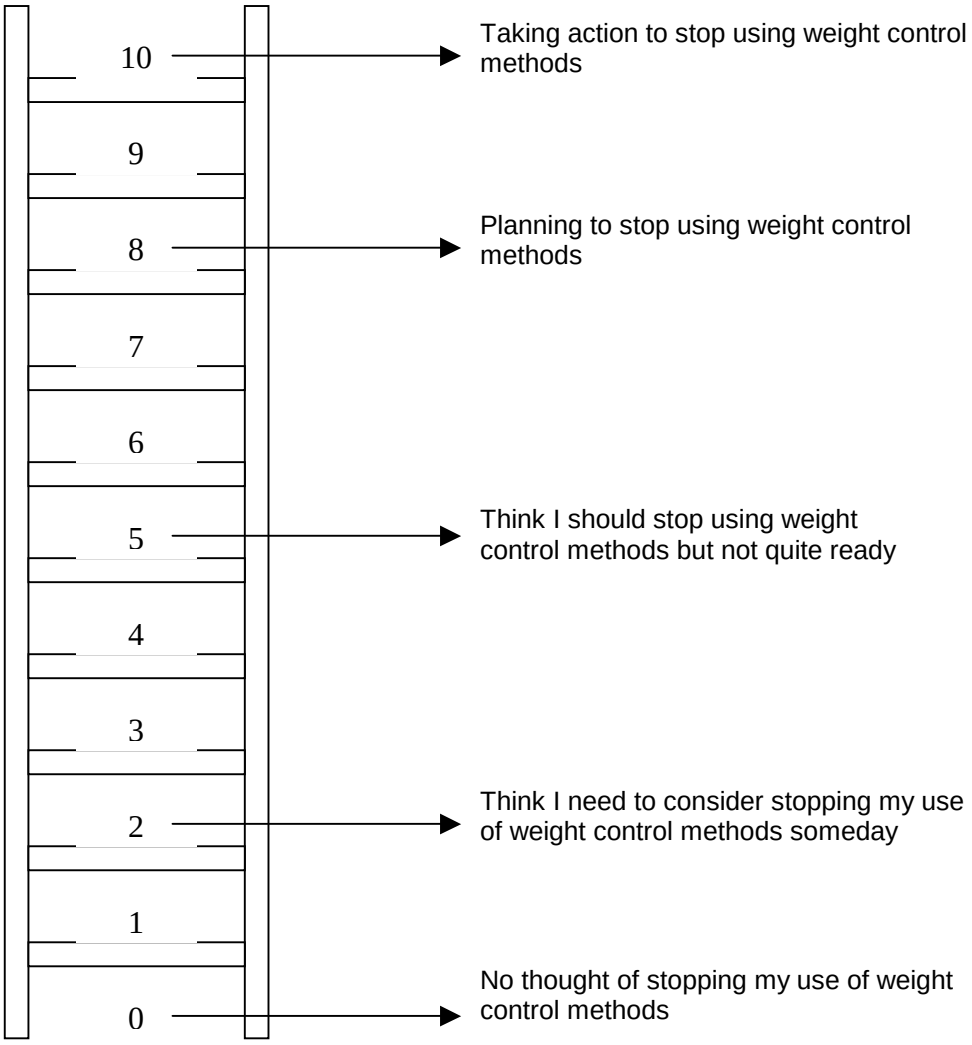
17. I can improve problems in my relationships with others.

1	2	3	4	5	6	7	8	9	10
Not at all confident									Very confident

Ladder 1*

On the ladder below, each rung represents where various individuals are in their thinking about stopping their use of weight control measures (e.g. over-exercising, vomiting).

Please circle the number that best indicates where you are now.
You may select more than one number for different weight control methods.
Please indicate which weight control method each number refers to.

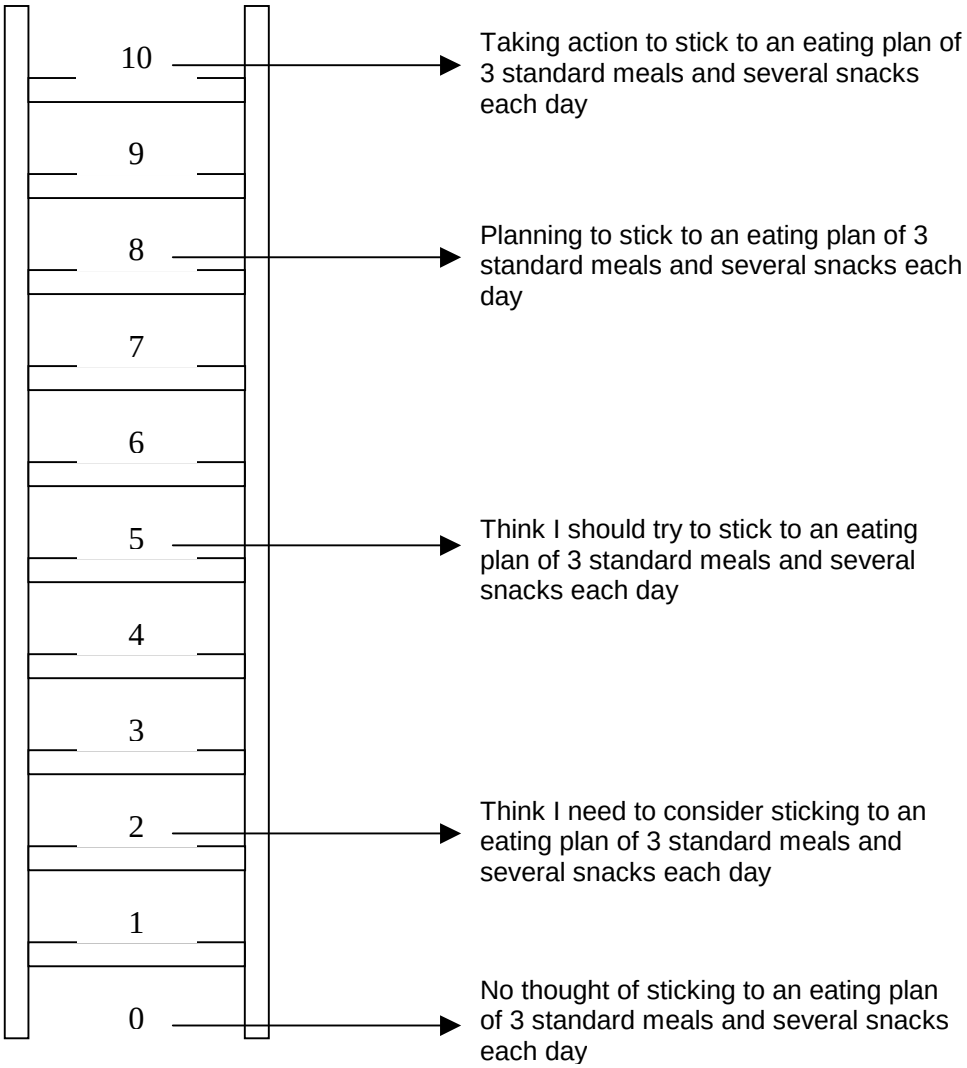


*Adapted from Rieger, Touyz, Schotte, Beumont, Russell, Clarke, Kohn and Griffiths (2000)

Ladder 2

On the ladder below, each rung represents where various individuals are in their thinking about sticking to an eating plan consisting of 3 standard meals and several snacks each day.

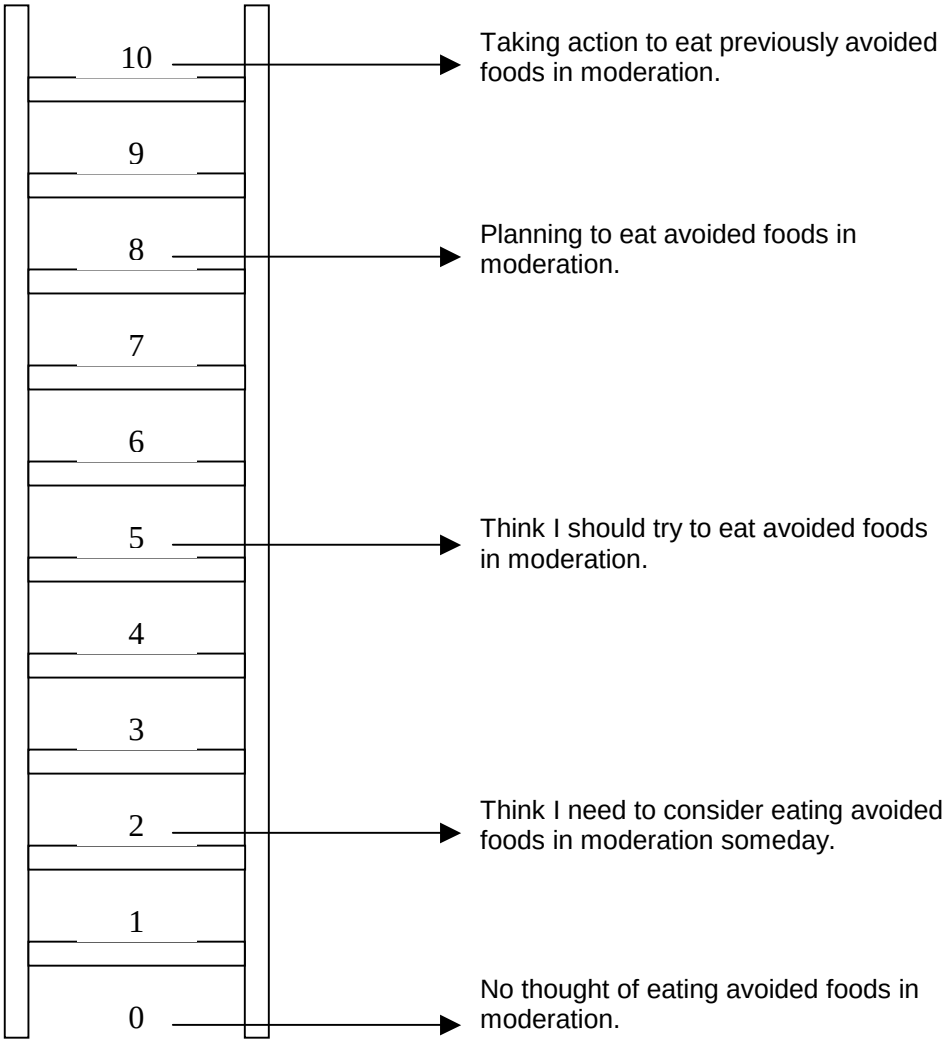
Please circle the number that best indicates where you are now.



Ladder 3

On the ladder below, each rung represents where various individuals are in their thinking about eating avoided foods (e.g. butter) in moderation.

Please circle the number that best indicates where you are now.



TERS

DIRECTIONS:

This questionnaire describes various aspects of your treatment. For each item, please choose a number from one to ten which best describes your current attitude towards treatment.

1. Your treatment includes performing various medical tests (for example, blood tests) to assess your health. How interested are you in finding out about the results of these tests?

1	2	3	4	5	6	7	8	9	10
Not at all interested				somewhat interested					Extremely interested

2. Your treatment includes participating in various therapy groups each day. How interested are you in participating in these groups?

1	2	3	4	5	6	7	8	9	10
Not at all interested				somewhat interested					Extremely interested

3. Your treatment includes having individual sessions with various clinicians (for example, a psychiatrist or psychologist). How interested are you in having these sessions?

1	2	3	4	5	6	7	8	9	10
Not at all interested				somewhat interested					Extremely interested

4. Your treatment involves having individual sessions with a dietician. How interested are you in having these sessions?

1	2	3	4	5	6	7	8	9	10
Not at all interested				somewhat interested					Extremely interested

5. Your treatment involves having 3 meals and 3 snacks each day. To what extent do you eat these meals and snacks because *you* have decided to?

1	2	3	4	5	6	7	8	9	10
Eat entirely For others				Eat for both myself and others					Eat entirely for myself

EATING QUESTIONNAIRE

Instructions

The following questions are concerned with the PAST FOUR WEEKS ONLY (28 days). Please read each question carefully and circle the appropriate number on the right. Please answer all the questions.

Q	*On how many days out of the past 28 days…*	**No days**	**1-5 days**	**6-12 days**	**13-15 days**	**16-22 days**	**23-27 days**	**Every day**
1	Have you been deliberately trying to limit the amount of food you eat to influence your shape or weight?	0	1	2	3	4	5	6
2	Have you gone for long periods of time (8 hours or more) without eating anything in order to influence your shape or weight?	0	1	2	3	4	5	6
3	Have you tried to avoid eating any foods which you like in order to influence your shape or weight?	0	1	2	3	4	5	6
4	Have you tried to follow definite rules regarding your eating in order to influence your shape or weight; for example, a calorie limit, a set amount of food, or rules about what or when you should eat?	0	1	2	3	4	5	6
5	Have you wanted your stomach to be empty?	0	1	2	3	4	5	6
6	Has thinking about food or its calorie content made it much more difficult to concentrate on things you are interested in; for example, read, watch TV, or follow a conversation?	0	1	2	3	4	5	6
7	Have you been afraid of losing control over eating?	0	1	2	3	4	5	6
8	Have you had episodes of binge eating?	0	1	2	3	4	5	6
9	Have you eaten in secret? (do not count binges)	0	1	2	3	4	5	6
10	Have you definitely wanted your stomach to be flat?	0	1	2	3	4	5	6
11	Has thinking about shape or weight made it more difficult to concentrate on things you are interested in; for example read, watch TV or follow a conversation?	0	1	2	3	4	5	6
12	Have you had a definite fear that you might gain weight or become fat?	0	1	2	3	4	5	6
13	Have you felt fat?	0	1	2	3	4	5	6
14	Have you had a strong desire to lose weight?	0	1	2	3	4	5	6

OVER THE PAST FOUR WEEKS (28 DAYS)

15 On what proportion of times that you have eaten have you felt guilty because the effect on your shape or weight?
(Do not count binges)
(Circle the number which applies)

0 = None of the times
1 = A few of the times
2 = Less than half the times
3 = Half the times
4 = More than half the times
5 = Most of the time
6 = Every time

16 Over the past four weeks (28 days), have there been any times when you have felt that you have eaten what other people would regard as an unusually large amount of food given the circumstances?
(Please put appropriate number in box).
0 = No
1 = Yes [ ]

17 How many such episodes have you had over the past four weeks?
[ ] [ ] [ ]

18 During how many of these episodes of overeating did you have a sense of having lost control over your eating?
[ ] [ ] [ ]

---

19 Have you had other episodes of eating in which you have had a sense of having lost control and eaten too much, but have <u>not</u> eaten an unusually large amount of food give the circumstances?
0 = No
1 = Yes [ ]

20 How many such episodes have you had over the past four weeks?
[ ] [ ] [ ]

---

21 Over the past four weeks have you made yourself sick (vomit) as a means of controlling your shape or weight?
0 = No
1 = Yes [ ]

22 How many times have you done this over the past four weeks?
[ ] [ ] [ ]

---

23 Have you taken laxatives as a means of controlling your shape or weight?
0 = No
1 = Yes [ ]

24 How many times have you done this over the past four weeks?
[ ] [ ] [ ]

---

25 Have you taken diuretics (water tablets) as a means of controlling your shape or weight?
0 = No
1 = Yes [ ]

26 How many times have you done this over the past four weeks?
[ ] [ ] [ ]

---

27 Have you exercised hard as a means of controlling your shape or weight?
0 = No
1 = Yes [ ]

28 How many times have you done this over the past four weeks?
[ ] [ ] [ ]

Q	*OVER THE PAST FOUR WEEKS (28 DAYS)* **(Circle the number which best describes your behaviour)**	**Not at all**		**Slightly**		**Moderately**		**Markedly**
29	Has your weight influenced how you think about (judge) yourself as a person?	0	1	2	3	4	5	6
30	Has your shape influenced how you think about (judge) yourself as a person?	0	1	2	3	4	5	6
31	How much would it upset you if you had to weigh yourself once a week for the next four weeks?	0	1	2	3	4	5	6
32	How dissatisfied have you felt about your weight?	0	1	2	3	4	5	6
33	How dissatisfied have you felt about your shape?	0	1	2	3	4	5	6
34	How concerned have you been about other people seeing you eat?	0	1	2	3	4	5	6
35	How uncomfortable have you felt seeing your body; for example, in the mirror, in shop window reflections, while undressing or taking a bath or shower?	0	1	2	3	4	5	6
36	How uncomfortable have you felt about others seeing your body; for example, in communal changing rooms, when swimming or wearing tight clothes?	0	1	2	3	4	5	6

Appendix D

Copy of the Motivational Enhancement Therapy manual

MET-ED

Motivational Enhancement Therapy for Eating Disorders

Therapist Manual

OVERVIEW OF THE GROUP PROGRAM

Background

Recent research has indicated that patients with eating disorders are often resistant and/or unwilling to change their eating behaviour (e.g. Rieger et al, 2002). Resistance is a central feature of the presentation of Anorexia Nervosa, however, ambivalence is also marked in sufferers of other eating disorders, for instance, those with bulimic symptomatology who are desperate to stop bingeing, but are not willing to stop dieting, and subclinical cases who have similar issues to patients with clinical disorders, without low weight status (Bemis-Vitousek, 2000). People with these low levels of motivation are unlikely to take action to change their current situation. This is problematic for traditional cognitive behaviour therapy, which is generally utilized in treatment, as it requires a high level of commitment and determination from the patient (Blake et al, 1997).

Motivational Enhancement Therapy (MET) is a method for fostering intrinsic motivation to change by investigating and resolving patient ambivalence to change (Burke, Arkowitz & Menchola, 2003). MET has mainly been utilised in the field of addictions, in which it has had generally positive results (Miller & Rollnick, 2002). Despite the motivational concern in eating disorders, there are relatively few studies evaluating MET in this patient population (Burke et al, 2003). Those few studies that have focused on MET for eating disorders have had mixed results. Treasure and colleagues (1999) found that MET as a prelude to further treatment was not generally superior to CBT in terms of reducing behavioural symptoms of patients with Bulimia Nervosa, increasing therapeutic alliance or increasing readiness to change. However, Treasure et al used questionable methods for measuring stage of change, there were no attempts to assess treatment fidelity and only patients with Bulimia Nervosa were included. An uncontrolled study by Feld and colleagues (2001) found that eating disorder patients' motivation to change, self efficacy and self esteem increased, and depression decreased, following a four session MET intervention which was run prior to other treatment, but there was no change in eating disorder behaviours and physical symptoms.

The current manual was developed for use in a research program to further investigate the use of MET, in particular, its use with inpatient sufferers of eating disorders in a private Sydney hospital. The program runs concurrently with standard treatment, rather than existing as a prelude or as a stand alone therapy as it has in previous studies (e.g. Treasure et al, 1999; Feld et al, 2001). This concurrent approach was chosen for a number of reasons. For instance, the patients are medically at need of more targeted behavioural treatments which are unable to be delayed and the MET approach is perhaps best conceived of as a stance applied throughout treatment, as it may be unable to sufficiently produce symptom change alone in this population (Geller, 2002).

Aim of the Current Program

The specific aim of a MET program, as outlined in Miller's manual of MET with Drug Abusers (1995), is to address the symptom of ambivalence to change. By supporting and fostering this intrinsic motivation for change, the therapist helps the patient to initiate, persist in and comply with behaviour change efforts.

The Theoretical Basis

MET seeks to evoke from clients their own motivation for change. The theoretical underpinning of this approach is the self-perception theory proposed by Bem (1967). Bem proposed that people learn what they believe by hearing themselves talk. When people publicly take a position, their commitment to that position increases. The more a person argues for that position, the more they commit to it.

Leader

* The group is designed to be facilitated by one intern clinical psychologist
* The facilitator has 2 years of therapy experience from a CBT perspective
* The facilitator has received specific training in MET, which includes an intensive 2 day training workshop and attendance at a number of seminars about the use of MET with various patient populations.
* The facilitator receives ongoing supervision in MET by an experienced Clinical Psychologist.

Structure of the Current Program

* Groups run for four sessions that are held weekly.
* Each session is generally 1 - 1.5 hours in duration. A brief break can be taken during the session if required
* The sessions are incorporated into the inpatient group therapy program, with all patients attending. However, only those patients who sign consent forms are incorporated into the research study.
* All patients who consent to the research component will complete a battery of psychological measures prior to entering the group, again at completion of four sessions and after a six week follow-up period.
* Once an individual has completed the four sessions, s/he is unable to continue to attend the groups, whether or not s/he is a participant in the research study.
* The groups are open, in that all patients enter the group during their first week in hospital and complete four sequential groups. Hence, different patients complete the program in different orders depending on the week they commence the session.

Participants

* All patients in the inpatient eating disorders unit are eligible to attend the groups (see caveat below).

* All those patients entering the program will therefore have met criteria for a primary diagnosis of any eating disorder (Anorexia Nervosa (AN), Bulimia Nervosa (BN) and Eating Disorder Not Otherwise Specified (EDNOS)). It is also common for patients to have co-morbidities, for instance, depression, anxiety disorders, substance abuse and personality disorders. Patients with these (and many other) co-morbid diagnoses are not excluded from the groups. However, in line with hospital policy, patients who are experiencing severe medical complications due to their condition, are detoxifying from drugs/alcohol or are acutely psychotic are excluded from the groups.
* Group size generally ranges from 5-10 participants.

Group Arrangements

* Groups are incorporated into the timetable of group therapy sessions.
* Groups are run in one large therapy room with a whiteboard.

Overview of Standard Inpatient Treatment

The MET intervention runs concurrently with the standard inpatient treatment at a private Sydney hospital. This standard program is structured around group therapy sessions run by a multidisciplinary team. Psychotherapy groups address direct eating disorder variables, as well as varying types of problems such as self esteem, interpersonal and family relationships. The primary therapeutic approaches are Cognitive Behavioural Therapy, Dialectical Behaviour Therapy and Psychodynamic approaches. Creative expression groups, planning groups and nutrition groups are also run. Additionally, patients have individual meetings with a dietician; psychiatrist and/or psychologist weekly and nursing staff closely supervise their meals. Staff communication is achieved through a comprehensive multidisciplinary ward round that takes place weekly and informal daily communication as relevant.

Assessment

According to Miller and Rollnick (2002), a strength of most MET studies, is the use of multi-modal measurement. This tradition will be continued in the proposed study, which intends to utilise the following reliable, well-validated (where available) self-report questionnaires assessing a number of realms, as well as physical measures to evaluate treatment outcome.

General data:

- Diagnosis as determined by the treating psychiatrist
- Comorbid diagnoses
- Demographic data including number of previous hospitalisations for a mental illness, estimated duration of illness, age, education, marital status, employment status, ethnicity, family structure etc.

Weekly measures:

- Physical variables e.g. weight, BMI

- 3 Contemplation ladders assessing areas of potential change (based on Rieger et al, 2000)

Pre and Post Treatment measures:
- Physical variables e.g. height, weight, BMI
- Eating Disorder Inventory II (EDI-II Garner et al 1991)
- Eating Disorders Examination – Questionnaire (EDE-Q; Fairburn & Beglin, 1994)
- Anorexia Nervosa Stages of Change Questionnaire (ANSOCQ; Rieger et al, 2000)
- Beck Depression Inventory II (Beck et al, 1996)
- Decisional Balance Scale for Anorexia (Cockell, Geller & Linden, 2002)
- Self Efficacy Scale (based on the work of Rieger et al, 2002)
- Likert scales of treatment engagement (based on Rieger et al, 2002)
- Working Alliance Inventory – modified (WAI; Horvath & Greenburg, 1989 – administered post only)

Six week follow up:
- Physical variables e.g. height, weight, BMI
- Eating Disorder Inventory II (EDI-II)
- Eating Disorders Examination Questionnaire (EDE-Q)
- Anorexia Nervosa Stages of Change Questionnaire (ANSOCQ)
- Decisional Balance Scale for Anorexia
- Self Efficacy Scale

<u>Reading</u>

Miller, W.R. and Rollnick, S. (2002). *Motivational Interviewing, Preparing People for Change (2nd ed.)* New York: Guildford Press.

OVERVIEW OF THE GROUP - SESSION BY SESSION OUTLINE

General Tone of the Current MET Program

In addition to the particular strategies outlined in the session guide, the MET approach relies on particular therapeutic principles which underpin all assessment and therapy sessions. Miller and Rollnick (2002) described the fundamentals of the motivational approach as incorporating a collaborative partnership between the therapist and client; eliciting, rather than attempting to instil motivation within a client; and affirming the client's right to autonomy. The authors also described the four broad principles that underlie such a method:

1. Express empathy and acceptance through reflective listening
2. Develop discrepancy between present behaviour and general goals, between self concept and behaviour
3. Roll with resistance
4. Support self efficacy, hope or optimism

Details about these principles, which are adhered to throughout the assessment and therapy program, can be found in Miller and Rollnick (2000).

Treasure and Ward (1997, p.104) in their paper about the practicalities of motivational interviewing in the anorexia population provided the following therapeutic guidelines:

DO	DON'T
• Let patients present the argument for change • Start with the patient's (not the therapist's) concerns • Focus on eliciting patient's concerns • Use open ended questions • Emphasise personal choice and responsibility • Negotiate goals and strategies • Explore and reflect patient's perceptions • Use empathetic listening selectively • Reflect feelings, concerns and self motivational statements • Reflect by paraphrasing and summarizing • Reflect statements, rather than questions, starting with 'you' as the subject • Make a short summary of sessions at the beginning and at the end • Offer advice and feedback as appropriate • Use affirmation and positive restructuring of the patient's statements to improve self esteem and self efficacy	• Argue, lecture or persuade with logic • Assume an authoritarian or expert role • Give expert advice at the beginning • Order, warn or direct • Do most of the talking • Get into debates or struggles • Make moral judgements, preach or criticize • Ask closed ended questions • Ask a series of questions in a row • Tell the patient that s/he has a problem • Prescribe solutions or a certain course of action

Table 1

The current program aims to adhere to these guidelines within the group setting.

Session Outline

The following is an overview of each of the four group sessions. The reasons for using these particular sessions will be outlined in detail in the thesis accompanying this research. The accompanying booklet contains all relevant handouts.

Each session spells out the procedure for running the program during a given week. Details on the background and principles of the various techniques are not included.

Session 1: (Targeted process of change: consciousness raising)

* Discussion of the stages of change model
* Homework: Exercise about how they have changed in the past

Session 2: (Targeted process of change: consciousness raising and self evaluation)

* Values exploration card sort task
* Homework: Decisional balance exercise about eating disorder with group discussion
* Homework: expand upon decisional balance exercise through the writing of letters to the eating disorder

Session 3: (Targeted processes of change: consciousness raising, self re-evaluation)

* Chairs exercise
* Homework: Looking forward exercise
* Homework: expand upon exercise through writing a letter to a close friend about the future

Session 4: (Targeted processes of change: consciousness raising)

* Decisional Balance task about change as a group task.
* Group discussion of fears about change and fears of staying the same.
* Exploration of willingness and confidence to overcome the ED
* Homework: Death bed question: If you were on your death bed thinking about your life, what experiences do you think would stick out as most meaningful to you? Is your ED involved in these experiences?

DETAILED SESSION OUTLINES

Initial Assessment

Aim:

To explain the rationale for the research, to gain consent and to complete pre-treatment assessment measures.

Materials required:

* Participant information sheet (and parent information sheet if participant under 18 years old)
* Participant consent form (and parent consent form if relevant)
* Pre treatment assessment battery

Points of the session:

Once a patient has consented to participate in the study, the researcher should meet with them to discuss the rationale for the study. Acknowledge the difficulty in overcoming an eating disorder and the confusion and indecisiveness they may be feeling. Briefly discuss how MET has been used in the past and its underlying principles which place the responsibility for change on the patient, not the therapist. Describe how MET is used as a way of the patient investigating their reasons for changing, as well as staying the same, in order to make some decisions about what they wish to do.

An example of what you might say is as follows:

"I appreciate you taking the time to meet with me today. I imagine that it may have been a bit of a struggle adjusting to hospital. Have you managed to have a look at the information sheet? (If not, go through the sheet with them). I guess briefly the purpose of these sessions is *not* to change you. But I hope that they will help you think about your present situation and consider what, if anything, you might want to do. Nobody can tell you what to do or make you change. I'll be giving you some information and we'll be doing a number of exercises in group. They'll also be some brief exercises for you to do outside of group. Do you have any questions about the groups or the research?"

Ideally, the consent form would already be signed by the patient and/or guardian, however, if it has not been signed, ask the patient to sign the form now.

Explain the questionnaires and encourage them to be open and honest in their responses. Highlight that they should answer with the first answer that comes to mind, rather than deliberating over the responses. There are no right or wrong answers and their individual answers are not going to be discussed with the treatment team (unless legally required e.g. information about the patient being of harm to others or themselves e.g. suicidal). Then leave them for half an hour to complete the questionnaires. On return, check that they are all completed and thank the participant for taking the time to answer them.

Remind the participant of the time and place of the first session.
Following the meeting with the participant, the researcher should access the participant's medical file to obtain demographic, diagnostic and physical measures.

Once the assessment is complete, handwrite a follow up note to the participant. An example of such a note is as follows:

Dear _____,
I just wanted to let you know that I enjoyed seeing you today and thank you for taking the time to complete all the questionnaires. It took a lot of patience and honesty. I look forward to having you in the groups and hope that they will be helpful for you. The next group is on _____. See you then!
_____ (Therapist)

If the assessment takes place immediately prior to the first group that the participant attends, do not give the letter, but convey this information at the conclusion of the assessment process.

Session 1

Aim:
To introduce the Stages of Change (Prochaska & DiClemente, 1992) and for patients to complete a staging exercise to determine their own stage of change.

Materials required:
* Tape recorder
* Whiteboard and whiteboard marker
* 1:1 Handout on the stages of change model
* 1:2 Handout of staging vignettes
* 1:3 Previous change handout
* 1:4 Handout "Where am I now?"
* Contemplation ladders

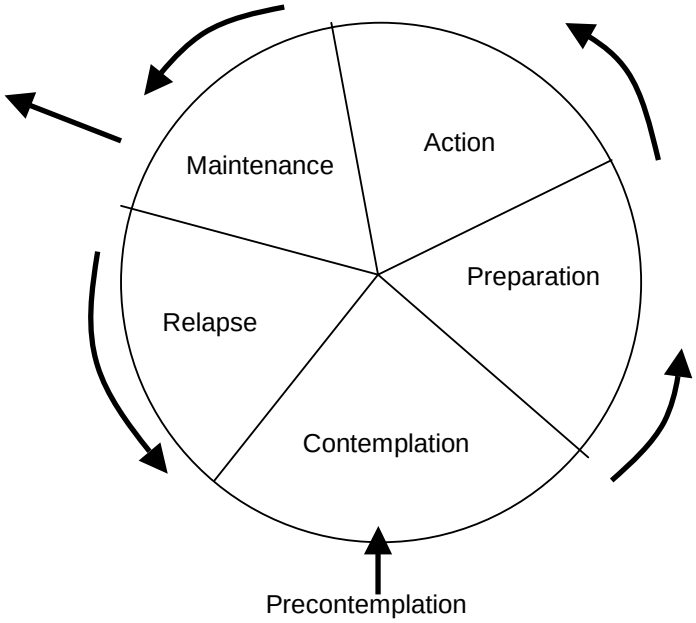
Points of the session:

Check homework
* Spend a short period reviewing the self-evaluation exercise. If there is a new group member, briefly explain that this is a task that everyone was given last week, and that when they do that group, they will have more of an understanding about this. Apologise for any confusion that they may currently have about the exercise when people talk about it.
* The task was the death bed question (see session 4).
* Ask "What stood out as being the most important thing/s that you wanted to be remembered for?" "Do the things that you want to be remembered for match what you are currently struggling with and beating yourself up about?" If no, "Is it fair to say that what some of the things that are really important to you at the moment, are not actually the things that you hold to be important in the big scheme of things?"

Introduction to the Stages of Change Model
* Distribute Handout 1:1
* The Transtheoretical model is explained with words and diagrams on the white board. One way to introduce the topic is as follows[6]:

Draw the following diagram on the board as you explain the stages:

[6] Information on stages of change model adapted from motivationalinterview.org website, Prochaska, Norcross and Di Clemente (1994). *Changing for Good,* and Velasquez et al (2001) *Group Therapy for Substance Abuse: A stages of change therapy manual.*



I want to talk a little with you about the way people change their behaviours. Can anyone think of a specific problem that they've resolved in the past? Chances are that you'll remember that the resolution didn't happen immediately or all at once, but that the solution took time and changed over time. Perhaps for a while you ignored the problem, then you considered tackling it, after that you made definite plans to change. Then once you'd got together all your resources – mental, physical, and social – you acted on and began to struggle with the problem. If you succeeded, you worked at maintaining that and if you failed, you probably gave up for a time, then went back to the drawing board.

In or out of treatment, people seem to pass through similar stages as they work on making changes. This goes for many kinds of changes. The same stages seem to apply to people who want to stop smoking, stop their drinking, or to normalize their eating. All of these stages are predictable and well defined. They each include a series of tasks that need to be completed before someone is ready to move onto the next stage. It is also possible for people to become stuck at a certain stage. However, it is useful to understand these stages so that you can gain control over the cycle of change and move through it more efficiently. As we go through these stages, I want you to think about a behaviour that you successfully changed on your own and remember how you went through the various stages.

The first stage of change is called the "Precontemplative stage". During this stage people are not thinking about making a change. They are either unconvinced that they have a problem, or are unwilling to consider changing it. Often people in this stage may deny or not be aware that there's any problem even if their families, friends, doctors and therapists can see that there's a problem. Often people in this stage would prefer to change the nagging from the people around them, rather than changing themselves. They don't want to think, talk, or read about their problem.

When people start thinking about their situation, they begin the second stage called the "Contemplation Stage." During this stage, people are "unsure" about what to do. People in this stage also struggle with the good and not-so-good things that might come with change. They are considering the possibility to change, but are not ready to take action just yet.

At some point, when people have been thinking through whether or not to change, they may come to feel that the reasons for change outweigh the reasons not to change. As this evidence increases on the side of change, the person becomes more determined to do something. This is the beginning of the next stage, called the "Preparation Stage." During this stage, people begin thinking about how they can go about making the change they desire, making plans, and then taking some action toward stopping old behaviours and/or starting new, more productive behaviours.

During the next stage of change called the "Action Stage" people begin to implement their "change plans" and trying out new ways of being. Often, during this stage people let others know what's happening and look for support from them in making these changes. This is the stage that requires the greatest commitment of time and energy.

Once people have succeeded in making and keeping some changes over a period of time they enter the "Maintenance Stage." During this stage, people try to sustain the changes that have been made and to prevent returning to their old ways. This is why this stage is also known as the "Holding Stage." Many times the person is able to keep up the changes made and then makes a permanent exit from the wheel (or spiral) of change. During this stage it is also common for people to have some "slips" or "lapses" where old habits return for a short time.

There is some pretty good evidence that people shouldn't skip stages. Someone that jumps right into the action stage may not spend enough time preparing for change. The result is they have trouble in keeping the changes they've made. For this reason, it is important for you to know which stage you're in and what things you need to do to move to the next stage."

- Reinforce the idea that it is possible to be in multiple stages at once. Validate the difference of the action orientated stance and the difficulty that that must place them in if they are not in the action stage for certain symptoms.

Staging vignettes[7]

* Distribute Handout of vignettes. Ask for a volunteer to read each vignette. After each scenario, ask group members which stage they think applies. Give hints as needed and refer them to the diagram on the white board and on Handout 1:1.

1. Jane gets tired of everyone nagging her to stop smoking. "Why don't you leave me alone?" she says. It's bad enough that they made cigarettes so expensive, and now she can't smoke in restaurants either. At work she has to go outside to smoke and she thinks, "I can't get any work done without a ciggie. How do they expect me to finish this project on time if I have to keep coming outside to think?" [Precontemplation]

2. Joseph is proud of himself. He has gone 2 weeks without a drink. He has starting hanging out with new friends who don't drink either, his work has improved and his boss has even noticed a difference. When he threw out all the alcohol from his house a couple of weeks ago, he wasn't sure he'd last. Even though he's tempted to go to the bar, so far he's resisted the urge. [Action]

3. Maria wonders whether the info that caffeine can hurt your baby is true. She has been drinking 5 cups of coffee a day forever. It hasn't done anything to her before. Still, she hasn't been able to sleep properly since she became pregnant, and her stomach gets nauseous after one cup of coffee. She thinks that maybe she should consider cutting down. [Contemplation]

[7] Taken from Velasquez et al (2001).

4. Mike has been thinking about becoming more fit, but he hasn't been able to start exercising like he used to. He has done a few sit ups a few mornings over the past couple of weeks, and he has pumped up the tires on his bike. He has asked some friends who go to the gym what their routine is. After lunch today, though, he took a nap rather than working out like he'd planned. [Preparation]

* After the explanation, ask whether the Stages of change model makes sense. Ask for the patients' reactions to the explanation about the stages of change.

* Ask participants if the model is applicable to how they identify their readiness to change with regard to their eating disorder.

Exercise on a behaviour changed in the past

* Distribute Handout 1:3 and ask patients to think of a time where they changed a behaviour in the past. It might have been a difficult situation e.g. changing jobs etc.

* Ask patients to fill in their behaviours and attitudes at each stage

* Invite patients to share their examples with the group

Group discussion of stages of change for various ED behaviours

* Participants are asked to consider which stage of change corresponds to their present situation. Explain that they may be at various stages for different behaviours e.g. they may be in Action to stop vomiting, but in contemplation regarding dieting. This section may take some time and can be completed as a group brainstorming exercise.

* Ask patients to list some of the things that they are required to change in hospital. Various symptoms to focus on include weight gain, binge eating, eating normally, purging (decrease or abstain), preoccupation with food and excessive exercise.

* Instruct patients to read the cues on the handout to decide which stage (or stages) they are in for each symptom

* Lead a group discussion about patients' reactions to this exercise. Remember to roll with resistance, avoid argumentation or persuasion and express empathy.

Distribute Homework exercise

Distribute the handout 1:4 and explain the task

Group closing

Participants should be asked the following questions in turn:
Can you think of one thing that you learnt during that exercise?
One thing that you want to remember and keep hold of?

Session 2

Aim:
To foster an awareness of the incompatibility between current eating disordered behaviour and more deeply held values.

Materials:
* Tape recorder
* Whiteboard and whiteboard marker
* 2:1 Values list handout
* 2:2 Homework Decisional balance handout
* 2:3 Homework letters task handout
* Small coloured cardboard cards (5x4 cm each – 11 per patient)
* Contemplation ladders

Points of the session:

Check homework
* Spend a short period reviewing the self-evaluation exercise. If there is a new group member, briefly explain that this is a task that everyone was given last week, and that when they do that group, they will have more of an understanding about this. Apologise for any confusion that they may currently have about the exercise when people talk about it.

Values Task[8]
* Introduce the topic of values by asking patients what they think personal values are. Explain that the things people value can be thought of as being the things that are most important in their lives, or the things they hold most dear. Point out that what is valued by one person, may be of little importance to another.
* Distribute Handout 2:1

* Patients are asked to make a list of the ten most important things they want in their life including values and goals.
* Some examples include a family, good career as a _____, travel, honesty, integrity. Ask the patients to list their values in as concrete terms as possible.
* Handout ten coloured cards to each patient and ask them to write one value on each card and place the cards in order of importance
* Ask patients to discuss with the group the reason why they chose those values and goals
* Ask “Is there anything missing from these values?” “Could they be improved in any way?”

[8] Adapted from Feld et al (2001)

* If patients can think of ways to improve, then the improvement is added merely by them being ware of it i.e. it is obviously something that they do value. This reinforces the idea that all our values are acceptable.
* After this, give the patients the final card and ask them to write down what their eating disorder represents to them e.g. control, escape, thinness etc.
* Instruct patients to place this final card amongst the other cards based on its importance.
* Lead a group discussion about their current value-behaviour consistency, and the patients' evaluations about the role that the ED plays in achieving and/or preventing value-behaviour consistency.

* Discussion prompts include:

"How will you be able to fulfill your goals and values on the course that you are on?"

"If you believe that there is a connection between losing weight and attaining your other goals, how does it work out in practice?"

"Is thinness achieving these goals now?"
"Where does this leave you now?"
"Where do you go from here?"
"What opportunities do you have to make your behavior become more in line with your values?"

* *[It is important to note that in EDs, it may be relevant to support the patient's ED goal e.g. attractiveness, control, however, it may be useful to make clear that it is the means, rather than the ends, which are at issue (Killick & Allen, 1997).] i.e. Are there other ways of achieving this?*

The following exercise can be done in session, if time, or moved to homework:

<u>Decisional balance exercise about the pros and cons of the eating disorder</u>

* Distribute Handout 2:2
* The therapist should introduce this exercise to the group. The following lines of inquiry may be useful:

I imagine that there are a whole lot of things that the ED helps you with. It makes sense that it would develop because it is useful in a way. Let's try and come up with a list of some of the ways that the eating disorder has helped you in your life. (write "The good things about the ED" on the white board and probe patients for responses. You may need to prompt with questions like

In what ways has your ED helped you physically?

In what ways has your ED helped you emotionally?

In what ways has your ED helped you with relationships?
In what ways has your ED helped your family life?
In what ways has you ED helped with other difficult problems in your life?
In what ways has your eating disorder helped your social interactions?
What other ways has the ED helped you?

* After a number of the pros of the ED have been generated, the therapist should summarise and reflect the points. Each participant is asked to write the group points on their handout and rate each benefit on how important it is to them on a scale of 0-5 (0 = least important and 5 = most important). The group is then asked to brainstorm a number of the "not-so-good things" about having an eating disorder". The therapist should write these on the board. The less good things are explored in more detail with requests made for examples of Less Good behaviour.

In what ways has the ED affected your life? Work? Family? Hobbies? Leisure? Courtship? Relationships? Sex?

For example, "(Name), you said that your ED has affected your family. Can you share with the group a time when that happened?"

* The therapist summarises and reflects the "not-so-good" features of the ED. Following this, each participant then rates the group's points using the 0-5 point Likert scale.

* The following discussion should be held about the "package deal" of the ED.

So, we've acknowledged as a group that there are some good things about the ED AND that there are some other, not so good things about the ED. I wonder where this leaves each of you now? (pause). So, when you take all of these into account, I want you to have a think about how the ED is as a "package deal". It may be a pretty good package deal, or it may be a not so good package deal. If it is not looking so good as a package deal, are the not-so-good things enough to make you want to change at the moment? And if you think that it is a good package deal, that's okay, it may be that it is working for you. Is anyone in this boat? And if the ED is working for you, I'd like to pose another question: Would you be pleased if your own daughter someday, decided to live the same way? Why?

* If the participants disagree with this question, the following statement could be made:

So it's not that you think this is necessarily the right or the best way to live, it's just that, all things considered, it seems to beat the other alternatives that are available at the moment.

* Each group member is then asked to reflect on this exercise and the therapist should provide reflection and summaries of the discussion.

<u>Self reflection task for between session completion:</u>

* The homework exercise expands on the decisional balance group exercise. It should be introduced as follows:

I imagine that most of you would both agree and disagree with some of the good things and not so good things that we discussed as a group and I also imagine that there are other good things and not so good things about your ED that you did not share with the group for a number of reasons. They may be private, they may have seemed silly, and they may be embarrassing or something else. Other patients have found it useful to think about the good things and not so good things privately on their own. A way of doing this, that is, a way of thinking about how the ED affects you is to write two letters to your ED. Firstly write a letter to it as a friend. Then write a letter to your ED as your enemy. You can share these letters in our next session if you wish to talk about it, or you could discuss it with your doctor, or you can choose to keep them totally private. Also, it may be helpful to conduct a pros and cons list on your own, just like we did as a group. Any questions?

* Distribute sheets for letters exercise (Handout 2:3).

Group closing

Participants should be asked the following questions in turn.

Can you think of one thing that you learnt during that exercise?
One thing that you want to remember and keep hold of?

Session 3

To examine future plans in order to see how the ED fits with those.

Materials required:

* Tape recorder
* Whiteboard and whiteboard marker
* Handout 3:1
* Handout 3:2
* Contemplation ladders
* Three chairs

Session details:

Check homework

* Spend a short period reviewing the self-evaluation exercise. If there is a new group member, briefly explain that this is a task that everyone was given last week, and that when they do that group, they will have more of an understanding about this. Apologise for any confusion that they may currently have about the exercise when people talk about it.

For those of you who were in this session last week, I asked you to write two letters. Does anyone have any comments or questions about that? It is great that you took the time to do that, as it may have been a difficult experience, but it's great that you put in that effort to think about the possibilities and functions. After writing these, how convinced are you that you ED is your friend or enemy?

Three Chairs exercise – past, present and future[9]

* Place one chair in the centre of the room and ask for a volunteer
* The chair represents the "here" or "present" of that person's situation regarding their eating disorder.
* The individual's understanding is then elicited through the use of MI strategies (e.g. Reflections and summaries) and with the addition of bringing in the other group members' input
* Prompting questions include:

  Can you tell me a little about where you feel that you're at? How is it for you currently in terms of your ED? Prompts may include asking them about various aspects of their life e.g. physically, emotionally, relationships, family life, value-behaviour consistency, problems in life, social life.

  Is this how it is for the rest of you?

* Then place a second chair some distance to the side of the first and invite (not tell) the patient to move to that chair. This chair becomes the "past". That is, a time before the ED became a major factor in their life or when

[9] Adapted from Farrell (2001) The use of motivational interviewing techniques in offending behaviour group work. *Motivational Interviewing Newsletter, 8*,1, 8-12.

things were going well. The goal is for the patient to gain some perspective from the immediacy of her current circumstance and to observe how things have changed over time.

* Explorations of this chair include:
  What is the time gap between this chair and the present?
  What was it like in the past when the ED was not an issue?
  What do you remember about this time?
  What good memories, hopes, dreams and plans did you have?
  What are the differences between there and the present chair?

* If the individual's history is very negative, it is still useful to explore what it was like, to establish the situation prior to the ED. MI strategies can be used to reflect on this time, e.g. "it must be difficult for you to imagine what it might be like without the ED. You're afraid that it may be like it was before."

* The individual then moves back to the present and a brief summary, with group participation, follows.

* The patient is then asked to move to a third chair, the "Future"
* In the spirit of MI, the given the choice of discussing a future with the ED or without the ED. Following their first explanation, they then complete a discussion about the alternative (i.e. with / without ED). Note: If the patient's goal is to become the best anorexic patient ever or if they are unable to imagine a future without the ED, use MI strategies to reflect and summarise.
* A further exploration is facilitated before returning to their Present and a brief summary of the exercise follows.
* The participant is thanked for being so open and helpful with the group.

<u>Homework</u> - <u>Future times letters or goal exercise</u>

* Distribute Handout 3:1 – Looking forward and Handout 3:2
* Introduce the homework task as a way of further thinking about where you might want to be in the future and explain the task as per instructions on handouts.
* Patients are encouraged to complete one or both of the two exercises. If they like lists, then they may want to do Handout 3:1, but if they prefer the emotions of a letter, they can complete the exercises on Handout 3:2.

<u>Group closing</u>

Participants should be asked the following questions in turn.

Can you think of one thing that you learnt during this session?
One thing that you want to remember and keep hold of?

Session 4

Aim: To examine the costs and benefits of changing the ED and to explore both importance and confidence in changing.

Materials required:

* Tape recorder
* Whiteboard and whiteboard marker
* Handout 4:1
* Handout 4:2
* Handout 4:3
* Contemplation ladders

Points of the session:

Check homework (10 min)

* Spend a short period reviewing the self-evaluation exercise. If there is a new group member, briefly explain that this is a task that everyone was given last week, and that when they do that group, they will have more of an understanding about this. Apologise for any confusion that they may currently have about the exercise when people talk about it.

Decisional balance exercise about change (40 min)

* Introduce the exercise as follows:

I guess that at the moment, you are struggling with the decision about whether or not you want to change your current ED situation. This choice is yours, and yours alone to make. Other patients have told me that they often have important reasons to fear changing their familiar ED way of life AND that at the same time a part of them is desperate to shake themselves out of the pattern that keeps the ED going. It is impossible to keep of these thoughts and ideas together in our head since our memory has limits and so there's a tendency to swing from one side of the argument to the other. Today we will work through a balance sheet to see systematically whether you are ready to take the journey to change. Everyone struggles with these reasons, and you may decide, after examining the reasons, that change is not necessarily worth it at the moment. That's okay, but the use of this exercise is to make sure that the decisions that you make are weighed up and thought about carefully. `

* Hand out balance sheet (Handout 4:2) to each participant and write the following on the white board.
*

Disadvantages of change and recovery

1. Practical loss to self 2. Practical loss to others 3. Self disapproval 4. Social disapproval

Reasons to give up ED

1. Practical gains to self 2. Practical gains for others 3. Self approval 4. Social approval

Allow patients 15 minutes to fill in the handout

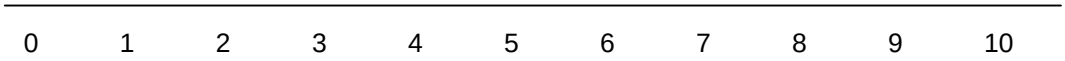
* Examples of answers on the balance sheet taken from Schmidt and Treasure (1999) include the following:

Reason to give up ED	Disadvantages of change and recovery
Practical gains for self *I will look healthier*	Practical losses to self *I will become very frightened about my weight*
Practical gains for others *I will be able to concentrate and do a better job at work* *I will be less irritable*	Practical losses to others *My mood may swing more* *I will need support from parents*
Self approval *I won't have to lie about food and how much I eat*	Self disapproval *I will hate my body*
Social approval *My parents will stop worrying that I'll die*	Social disapproval *I may become assertive and that could disrupt the status quo of my relationships*

* Prompt group for their answers to each of these. Summarise and reflect the patients' comments as appropriate.

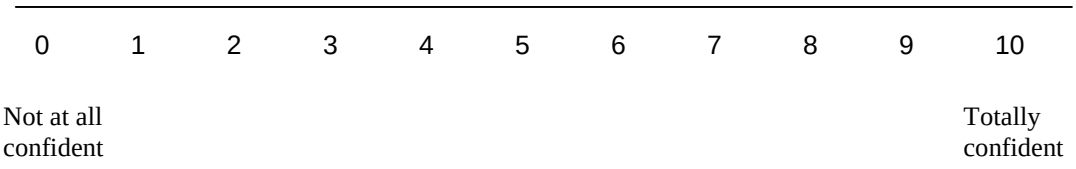
<u>Exploring importance and confidence about change (30 min)</u>

* The therapist should draw the following scale on the board:



* Then ask the group "at this very second, how much out of 10 are you wanting to completely overcome your ED?
* Ask for feedback from each member and write their name above the corresponding number.
* Use this number to elicit change talk by asking them why they chose a given number and not a lower one (e.g. why 6 and not 4?)
* Ask them if they have ever been at 0 or 1 and ask what is different now.
* If a patient is at 0, reflect the difficulty of them being in an action oriented program and ask them if they have ever been higher in willingness to lose the eating disorder. Ask them when this was and what was different to now.
* Ask patients who are at higher levels to discuss what has made them increase in motivation
* Ask them what they might need from themselves, their family, friends, doctor, therapist, nurses etc to move their willingness higher.

* Then re-do the exercise with "confidence" to change should they decide that they want to.



* Prompt questions include:
    - "Can you see yourself being more confident in the future? How will that happen?"

* Review the rationale for the exercise as follows:

Two useful concepts that help people decide to make a change is that they think that it is important to change and that they are confident that they can change if they chose to do so. I don't know whether or not you have made any decisions about changing your eating disorder, and I'm not here to force you to change, but I do know that previous patients have found it helpful to have a think about these two concepts of importance and confidence of change in order to help them make informed decisions either way.

Homework exercise (5 min)

- Distribute Homework sheet Handout 4:3 and explain the exercise.

Death bed question: If you were on your death bed thinking about your life, what experiences do you think would stick out as most meaningful to you? Is your ED involved in these experiences?

Group closing (5 min)

Participants should be asked the following questions in turn.

Can you think of one thing that you learnt during that exercise?
One thing that you want to remember and keep hold of?

Post Treatment Assessment

Aim:
To complete post-treatment assessment measures.

Materials required:
* Post treatment assessment battery

Points of the session:
The participant should be thanked for continuing to take part in the research study.

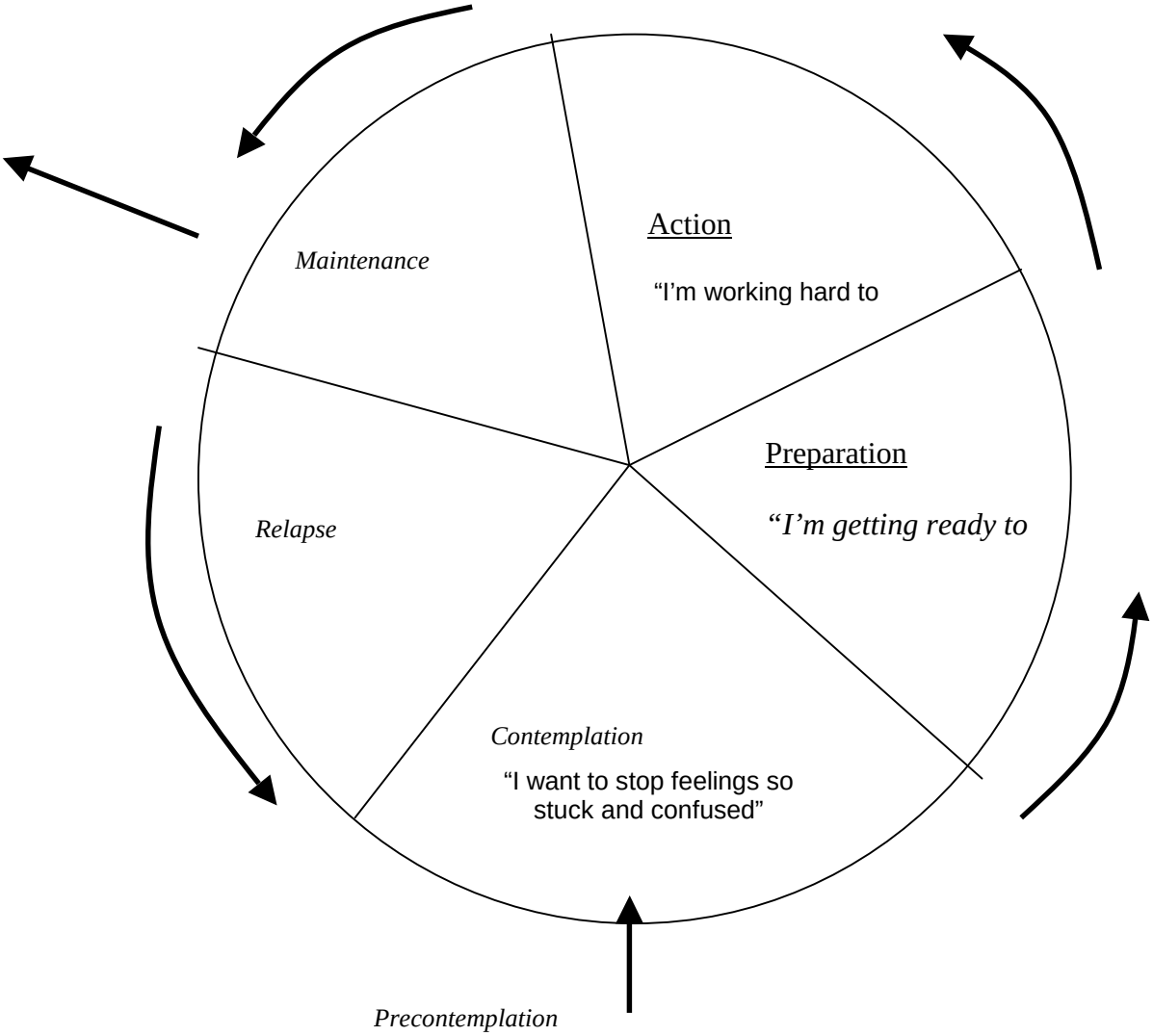
An example of what you might say is as follows:

"I appreciate the time that you have put into attending our groups. I hope that have been useful in helping you to think about your present situation and consider what, if anything, you might want to do."

Explain that you have some questionnaires for them to complete again. Explain each questionnaire and encourage them to be open and honest in their responses. Highlight that they should answer with the first answer that comes to mind, rather than deliberating over the responses. There is no right or wrong answers and their individual answers are not going to be discussed with the treatment team (unless legally required e.g. information about the patient being of harm to others or themselves e.g. suicidal) and leave them for half an hour to complete them. On return, check that they are all completed and thank the participant for taking the time to answer them. Remind them that you will post them some further questionnaires for them to complete in 6 weeks with a freepost reply envelope.

Following the meeting with the participant, the researcher should access the participant's medical file to obtain further diagnostic and physical measures.

Handout 1:1
The Stages of Change



Handout 1:2

What stage are the following people in for their behaviour according to the Stages of Change Model?

1. Jane gets tired of everyone nagging her to stop smoking. "Why don't you leave me alone?" she says. It's bad enough that they made cigarettes so expensive, and now she can't smoke in restaurants either. At work she has to go outside to smoke and she thinks, "I can't get any work done without a ciggie. How do they expect me to finish this project on time if I have to keep coming outside to think?"

_____

2. Joseph is proud of himself. He has gone 2 weeks without a drink. He has starting hanging out with new friends who don't drink either, his work has improved and his boss has even noticed a difference. When he threw out all the alcohol from his house a couple of weeks ago, he wasn't sure he'd last. Even though he's tempted to go to the bar, so far he's resisted the urge.

_____

3. Maria wonders whether the info that caffeine can hurt your baby is true. She has been drinking 5 cups of coffee a day forever. It hasn't done anything to her before. Still, she hasn't been able to sleep properly since she became pregnant, and her stomach gets nauseous after one cup of coffee. She thinks that maybe she should consider cutting down.

_____

4. Mike has been thinking about becoming more fit, but he hasn't been able to start exercising like he used to. He has done a few sit ups a few mornings over the past couple of weeks, and he has pumped up the tires on his bike. He has asked some friends who go to the gym what their routine is. After lunch today, though, he took a nap rather than working out like he'd planned.

_____

Handout 1:4

Where am I now?[10]

Over the next week, it may be useful to take some time to consider where you are at in regards to changing various aspects of your eating. Use the diagram below as a guide.
Consider why you may be willing to change some things and not others. If you are wanting to change some factors, what do you need to do to instigate that change? You may wish to brainstorm ideas on the back of this sheet.

Precontemplation:
- Not thinking of changing
- Feel that things are fine
- Do not see a problem

Contemplation:
- Thinking of changing
- Wondering how I affect others
- Maybe trying to make small changes

Preparation:
- Have a plan to change
- May have made some changes
- Can see the benefits of changing the ED

Action:
- Have stopped restriction / bingeing / vomiting / excessive exercising etc
- Am avoiding triggers
- Asking others for support

Maintenance:
- At a normal weight
- Accepting myself
- Eating "normally"

Handout 1:3

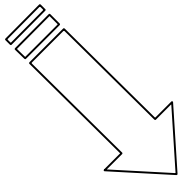
Can you think of a time when you changed a behaviour? You probably moved through all of the Stages of Change and are now in maintenance. For instance, some people go through the stages of change a number of times before they quit smoking. Other examples might be changing the amount of effort that you put into your school work or breaking up with a boyfriend.

In order to see how that process worked, fill in the diagram with the different thoughts and behaviours that you exhibited at each stage of the change process. Refer to handout 1:1 and 1:3 for details.

Behaviour changed: _____

Precontemplation:

_____
_____
_____

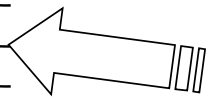


Contemplation:

_____
_____
_____
_____
_____
_____

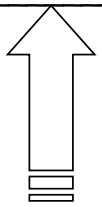
Preparation:

_____
_____
_____
_____
_____
_____



Action:

_____
_____
_____
_____
_____
_____
_____
_____
_____



Maintenance:

_____
_____
_____
_____

Handout 2:1

What I value most in life

Write down the top 10 things that you value in life. They don't need to be in order. They may be your job, your family, your self respect etc. but there are no right or wrong answers – it's up to you.

_____

_____

_____

_____

_____

_____

_____

_____

_____

_____

Handout 2:2

Other patients have told me that there are some really good things about having their eating disorder and that there are also some "not so good" things about having it as well.

Take some time to consider those things now and write them down below.

The good things about the ED	The not-so-good things about the ED

Handout 2:3

Your eating disorder can sometimes feel like a boa constrictor that has you in a strangle hold. It can affect your physical health, your psychological health, your social life, your family life, your romantic life, your education and your career.

There are probably some things that your eating disorder helps you with and makes easier.
AND
There may be some things that your eating disorder makes harder or ruins.

Reflection Task:

1.

Write a letter to your eating disorder as your helpful friend
Next, write a letter to your eating disorder as your enemy.

AND

2.

Spend some time on your own to complete two lists of the good things and the not so good things about the eating disorder.
You may use Handout 2:2 as a starting point.

Handout 3:1

Looking forward

Consider the following questions.

1. Where do I want to be in 6-12 months time? Look at a variety of aspects of your life including social life, working life, emotions etc

2. What is important to me about these things?

3. Why aren't I there now? What's holding me back?

4. How is it holding me back?

Handout 3:2 – Looking Forward Letters[11]

Your eating disorder can sometimes feel like a boa constrictor that has you in a strangle hold. It can affect your physical health, your psychological health, your social life, your family life, your romantic life, your education and your career.

How will you cope without your boa constrictor around you? Is it possible for you to imagine life without an eating disorder? What will have happened to your physical health, your psychological health, your social life, your family life, your romantic life, your education and your career?

If you didn't have the boa constrictor around your neck, who would you be? What do you really believe in? How do you want to live your life? If you had a magic wand, what would you want to be?

Exercise:

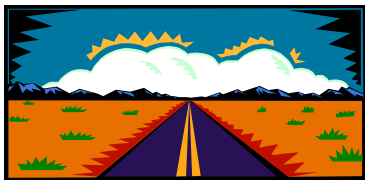
1. Write a letter to a good friend, to whom you can be completely honest, five years in the future as though you are free of the eating disorder boa constrictor. Describe how all aspects of your life will be.

2. Now write a letter to your good friend, five years in the future, as though you still have your eating disorder. Describe how all aspects of your life will be.

[11] Adapted from Schmidt and Treasure (1997) – Getting Better Bit(e) by Bit(e)

Handout 4:1

Are you ready to take the journey?



You may have important reasons to fear changing your familiar eating disorder behaviour, and yet part of you may be desperate to shake yourself free from the eating disorder. It is impossible to keep all of those thoughts and ideas together in your head, so there is a tendency to swing from one side of an argument to the other.
Writing a balance sheet will help you to deal with all of your thoughts.

Disadvantages of change and recovery Disorder	Reasons to give up the Eating
Practical losses for myself e.g. I will feel bloated and too full	Practical gains for myself e.g. I will look healthier
Practical losses for others e.g. My mood may swing more	Practical gains for others e.g. I will be able to concentrate and do better at work

Disadvantages of change and recovery Disorder (continued)	Reasons to give up the Eating (continued)
Self disapproval e.g. I will out of control of my life about	Self approval e.g. I won't have to lie to people about my eating
Social disapproval e.g. I may become more assertive which may disrupt my current relationships	Social approval e.g. my parents will stop worrying that I'm going to die

Handout 4:2

Sometimes we get stuck on the merry-go-round of life and keep going as things are without considering what is important to us. It is useful to stop and take some time to think about this issue. By considering the following question and making some notes about your answer below, you will be able to take a step back from that merry-go-round to re-evaluate how things are.

"If you were on your death bed thinking about your life, what experiences do you think would stick out as most meaningful and important to you? Is your Eating Disorder involved in these experiences? If so, how?"

Make some notes about your thoughts below:

Appendix E

Condensed SSPS Statistical Output

- Comparison of MET and TAU groups at Pre-treatment
- Comparison of study completers and non-completers
- Overall effectiveness of 4 weeks of inpatient treatment
- Comparison of outcome between the MET and TAU groups
- MET treatment process

Comparison of MET and TAU groups at Pre-treatment

1. Independent samples t-tests

Group Statistics

	Group	N	Mean	Std. Deviation
Age	MET group	23	21.304	7.8765
	TAU group	19	23.842	6.6438
BMI_Gp1	MET group	23	15.2674	1.97804
	TAU group	19	16.5489	3.10458
Educ_continuous	MET group	23	11.4783	1.80579
	TAU group	19	12.8947	1.99707
Estim_ED_duration_mths	MET group	23	54.6957	61.91669
	TAU group	19	73.3684	64.82387
Prev_admiss_ED	MET group	23	1.65	2.870
	TAU group	19	2.63	2.773
PreEDEQ_restraintsub	MET group	23	4.1913	1.63315
	TAU group	19	4.0000	1.80247
PreEDEQ_eatingsub	MET group	23	3.5130	1.19974
	TAU group	19	3.9263	1.69635
PreEDEQ_shapesub	MET group	23	4.7228	1.28969
	TAU group	19	4.8257	1.31837
PreEDEQ_weightsub	MET group	23	4.1217	1.45570
	TAU group	19	4.4474	1.57986
PreEDI_DT	MET group	23	13.4348	6.40899
	TAU group	18	15.3611	5.70295
PreEDI_B	MET group	23	3.3913	5.54928
	TAU group	18	5.9444	6.93221
PreEDI_BD	MET group	23	15.3913	7.81455
	TAU group	18	19.3056	7.27028
PreEDI_I	MET group	23	13.1304	9.50265
	TAU group	18	16.6667	7.73076
PreEDI_P	MET group	23	7.3913	4.98852
	TAU group	18	10.6111	4.98396
PreEDI_ID	MET group	23	5.5652	3.27284
	TAU group	18	6.0556	3.76473
PreEDI_IA	MET group	23	11.6087	7.12064
	TAU group	18	15.5556	7.47720
PreEDI_MF	MET group	23	4.6957	3.99357
	TAU group	18	9.8333	7.91313
PreEDI_A	MET group	23	8.0000	3.42451
	TAU group	18	10.2778	6.62265
PreEDI_IR	MET group	23	8.2609	6.38334
	TAU group	18	9.6111	7.73942
PreEDI_SI	MET group	23	9.0870	4.32659
	TAU group	18	10.4444	4.60463
PreANSOCQ_Total	MET group	23	50.1348	16.37153
	TAU group	19	50.5737	14.31289
PreDB_Burden_subscale	MET group	23	3.5887	.87582
	TAU group	19	3.8719	.59132
PreDB_Benefit_subscale	MET group	23	3.2946	1.05782
	TAU group	19	3.4322	1.13717
PreDB_Avoid_subscale	MET group	23	2.8944	1.15595
	TAU group	19	3.4474	1.07798
PreSES_Total	MET group	23	84.2174	37.94009
	TAU group	19	91.1316	34.64336
PreTERS_total	MET group	23	35.1739	9.98932
	TAU group	19	35.1053	7.97841

Independent Samples Test

		Levene's Test for Equality of Variances		t-test for Equality of Means			
		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference
Age	Equal variance assumed	.001	.975	-1.114	40	.272	-2.5378
	Equal variance not assumed			-1.133	39.974	.264	-2.5378
BMI_Gp1	Equal variance assumed	2.836	.100	-1.623	40	.112	-1.28156
	Equal variance not assumed			-1.557	29.392	.130	-1.28156
Educ_continuous	Equal variance assumed	.018	.893	-2.412	40	.021	-1.41648
	Equal variance not assumed			-2.389	36.793	.022	-1.41648
Estim_ED_duration mths	Equal variance assumed	.082	.776	-.952	40	.347	-18.67277
	Equal variance not assumed			-.948	37.792	.349	-18.67277
Prev_admiss_ED	Equal variance assumed	.599	.443	-1.118	40	.270	-.979
	Equal variance not assumed			-1.121	38.978	.269	-.979
PreEDEQ_restraint	Equal variance assumed	.793	.379	.361	40	.720	.19130
	Equal variance not assumed			.357	36.833	.723	.19130
PreEDEQ_eatingsu	Equal variance assumed	2.379	.131	-.923	40	.362	-.41327
	Equal variance not assumed			-.893	31.542	.378	-.41327
PreEDEQ_shapesu	Equal variance assumed	.045	.833	-.255	40	.800	-.10283
	Equal variance not assumed			-.254	38.184	.801	-.10283
PreEDEQ_weightsu	Equal variance assumed	.011	.917	-.694	40	.492	-.32563
	Equal variance not assumed			-.689	37.151	.495	-.32563

Independent Samples Test

		Levene's Test for Equality of Variances		t-test for Equality of Means			
		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference
PreEDI_DT	Equal variances assumed	1.018	.319	-1.002	39	.323	-1.92633
	Equal variances not assumed			-1.016	38.300	.316	-1.92633
PreEDI_B	Equal variances assumed	2.585	.116	-1.311	39	.198	-2.55314
	Equal variances not assumed			-1.275	32.090	.211	-2.55314
PreEDI_BD	Equal variances assumed	.015	.902	-1.640	39	.109	-3.91425
	Equal variances not assumed			-1.655	37.776	.106	-3.91425
PreEDI_I	Equal variances assumed	1.571	.218	-1.281	39	.208	-3.53623
	Equal variances not assumed			-1.314	38.921	.197	-3.53623
PreEDI_P	Equal variances assumed	.035	.853	-2.052	39	.047	-3.21981
	Equal variances not assumed			-2.052	36.683	.047	-3.21981
PreEDI_ID	Equal variances assumed	.114	.738	-.446	39	.658	-.49034
	Equal variances not assumed			-.438	33.894	.664	-.49034
PreEDI_IA	Equal variances assumed	.219	.642	-1.723	39	.093	-3.94686
	Equal variances not assumed			-1.713	35.771	.095	-3.94686
PreEDI_MF	Equal variances assumed	9.117	.004	-2.710	39	.010	-5.13768
	Equal variances not assumed			-2.515	23.724	.019	-5.13768
PreEDI_A	Equal variances assumed	8.575	.006	-1.427	39	.162	-2.27778
	Equal variances not assumed			-1.327	24.045	.197	-2.27778
PreEDI_IR	Equal variances assumed	.534	.469	-.612	39	.544	-1.35024
	Equal variances not assumed			-.598	32.747	.554	-1.35024
PreEDI_SI	Equal variances assumed	.284	.597	-.969	39	.338	-1.35749
	Equal variances not assumed			-.962	35.509	.343	-1.35749

Independent Samples Test

		Levene's Test for Equality of Variances		t-test for Equality of Means			
		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference
PreANSOCQ_Total	Equal variances assumed	.694	.410	-.091	40	.928	-.43890
	Equal variances not assumed			-.093	39.849	.927	-.43890
PreDB_Burden_subsca	Equal variances assumed	4.476	.041	-1.200	40	.237	-.28323
	Equal variances not assumed			-1.245	38.610	.221	-.28323
PreDB_Benefit_subsca	Equal variances assumed	.189	.666	-.406	40	.687	-.13767
	Equal variances not assumed			-.403	37.326	.689	-.13767
PreDB_Avoid_subscal	Equal variances assumed	.015	.904	-1.590	40	.120	-.55296
	Equal variances not assumed			-1.601	39.372	.117	-.55296
PreSES_Total	Equal variances assumed	1.305	.260	-.611	40	.545	-6.91419
	Equal variances not assumed			-.617	39.563	.541	-6.91419
PreTERS_total	Equal variances assumed	1.330	.256	.024	40	.981	.06865
	Equal variances not assumed			.025	39.967	.980	.06865

2. Chi squared tests

Presence of bingeing

Crosstab

Count

		Group		Total
		MET group	TAU group	
Hx_binge	Yes	7	9	16
	No	16	10	26
Total		23	19	42

Chi-Square Tests

	Value	df	Asymp. Sig. (2-sided)	Exact Sig. (2-sided)	Exact Sig. (1-sided)
Pearson Chi-Square	1.265[b]	1	.261		
Continuity Correction[a]	.649	1	.420		
Likelihood Ratio	1.266	1	.260		
Fisher's Exact Test				.344	.210
Linear-by-Linear Association	1.235	1	.266		
N of Valid Cases	42				

a. Computed only for a 2x2 table

b. 0 cells (.0%) have expected count less than 5. The minimum expected count is 7. 24.

Presence of self induced vomiting

Crosstab

Count

		Group		Total
		MET group	TAU group	
Hx_ vomit	Yes	12	12	24
	No	11	7	18
Total		23	19	42

Chi-Square Tests

	Value	df	Asymp. Sig. (2-sided)	Exact Sig. (2-sided)	Exact Sig. (1-sided)
Pearson Chi-Square	.513[b]	1	.474		
Continuity Correction[a]	.162	1	.687		
Likelihood Ratio	.515	1	.473		
Fisher's Exact Test				.542	.344
Linear-by-Linear Association	.500	1	.479		
N of Valid Cases	42				

a. Computed only for a 2x2 table

b. 0 cells (.0%) have expected count less than 5. The minimum expected count is 8. 14.

Presence of laxative abuse

Crosstab

Count

		Group		
		MET group	TAU group	Total
Hx_laxative	Yes	2	2	4
	No	21	17	38
Total		23	19	42

Chi-Square Tests

	Value	df	Asymp. Sig. (2-sided)	Exact Sig. (2-sided)	Exact Sig. (1-sided)
Pearson Chi-Square	.040[b]	1	.841		
Continuity Correction[a]	.000	1	1.000		
Likelihood Ratio	.040	1	.841		
Fisher's Exact Test				1.000	.620
Linear-by-Linear Association	.040	1	.842		
N of Valid Cases	42				

a. Computed only for a 2x2 table

b. 2 cells (50.0%) have expected count less than 5. The minimum expected count is 1. 81.

Marital status

Crosstab

Count

		Group		
		MET group	TAU group	Total
Single_ partnered	single	19	13	32
	partnered	4	6	10
Total		23	19	42

Chi-Square Tests

	Value	df	Asymp. Sig. (2-sided)	Exact Sig. (2-sided)	Exact Sig. (1-sided)
Pearson Chi-Square	1.155[b]	1	.283		
Continuity Correction[a]	.505	1	.477		
Likelihood Ratio	1.153	1	.283		
Fisher's Exact Test				.468	.238
Linear-by-Linear Association	1.127	1	.288		
N of Valid Cases	42				

a. Computed only for a 2x2 table

b. 1 cells (25.0%) have expected count less than 5. The minimum expected count is 4. 52.

Comparison of study completers and non-completers

1. Chi squared tests

Marital status

Crosstab

Count

		Completer_postdata		
		Yes	No post	Total
Single_ partnered	single	27	5	32
	partnered	8	2	10
Total		35	7	42

Chi-Square Tests

	Value	df	Asymp. Sig. (2-sided)	Exact Sig. (2-sided)	Exact Sig. (1-sided)	Point Probability
Pearson Chi-Square	.105[b]	1	.746	1.000	.539	
Continuity Correction[a]	.000	1	1.000			
Likelihood Ratio	.102	1	.750	1.000	.539	
Fisher's Exact Test				1.000	.539	
Linear-by-Linear Association	.102[c]	1	.749	1.000	.539	.336
N of Valid Cases	42					

a. Computed only for a 2x2 table

b. 1 cells (25.0%) have expected count less than 5. The minimum expected count is 1.67.

c. The standardized statistic is .320.

Crosstab

Count

		F_U_data		
		No	Yes	Total
Single_ partnered	single	10	22	32
	partnered	4	6	10
Total		14	28	42

Chi-Square Tests

	Value	df	Asymp. Sig. (2-sided)	Exact Sig. (2-sided)	Exact Sig. (1-sided)	Point Probability
Pearson Chi-Square	.263[b]	1	.608	.707	.440	
Continuity Correction[a]	.016	1	.898			
Likelihood Ratio	.257	1	.612	.707	.440	
Fisher's Exact Test				.707	.440	
Linear-by-Linear Association	.256[c]	1	.613	.707	.440	.256
N of Valid Cases	42					

a. Computed only for a 2x2 table

b. 1 cells (25.0%) have expected count less than 5. The minimum expected count is 3.33.

c. The standardized statistic is -.506.

Presence of bingeing

Crosstab

Count

		Completer_postdata		
		Yes	No post	Total
Hx_binge	Yes	15	1	16
	No	20	6	26
Total		35	7	42

Chi-Square Tests

	Value	df	Asymp. Sig. (2-sided)	Exact Sig. (2-sided)	Exact Sig. (1-sided)	Point Probability
Pearson Chi-Square	2.019[b]	1	.155	.222	.161	
Continuity Correction[a]	.989	1	.320			
Likelihood Ratio	2.275	1	.131	.222	.161	
Fisher's Exact Test				.222	.161	
Linear-by-Linear Association	1.971[c]	1	.160	.222	.161	.137
N of Valid Cases	42					

a. Computed only for a 2x2 table

b. 2 cells (50.0%) have expected count less than 5. The minimum expected count is 2.67.

c. The standardized statistic is 1.404.

Crosstab

Count

		F_U_data		
		No	Yes	Total
Hx_binge	Yes	6	10	16
	No	8	18	26
Total		14	28	42

Chi-Square Tests

	Value	df	Asymp. Sig. (2-sided)	Exact Sig. (2-sided)	Exact Sig. (1-sided)	Point Probability
Pearson Chi-Square	.202[b]	1	.653	.742	.452	
Continuity Correction[a]	.013	1	.911			
Likelihood Ratio	.201	1	.654	.742	.452	
Fisher's Exact Test				.742	.452	
Linear-by-Linear Association	.197[c]	1	.657	.742	.452	.237
N of Valid Cases	42					

a. Computed only for a 2x2 table

b. 0 cells (.0%) have expected count less than 5. The minimum expected count is 5.33.

c. The standardized statistic is .444.

Presence of self induced vomiting

Crosstab

Count

		Completer_postdata		
		Yes	No post	Total
Hx_vomit	Yes	22	2	24
	No	13	5	18
Total		35	7	42

Chi-Square Tests

	Value	df	Asymp. Sig. (2-sided)	Exact Sig. (2-sided)	Exact Sig. (1-sided)	Point Probability
Pearson Chi-Square	2.800[b]	1	.094	.208	.105	
Continuity Correction[a]	1.575	1	.209			
Likelihood Ratio	2.809	1	.094	.208	.105	
Fisher's Exact Test				.118	.105	
Linear-by-Linear Association	2.733[c]	1	.098	.208	.105	.088
N of Valid Cases	42					

a. Computed only for a 2x2 table

b. 2 cells (50.0%) have expected count less than 5. The minimum expected count is 3.00.

c. The standardized statistic is 1.653.

Crosstab

Count

		F_U_data		
		No	Yes	Total
Hx_vomit	Yes	7	17	24
	No	7	11	18
Total		14	28	42

Chi-Square Tests

	Value	df	Asymp. Sig. (2-sided)	Exact Sig. (2-sided)	Exact Sig. (1-sided)	Point Probability
Pearson Chi-Square	.438[b]	1	.508	.742	.369	
Continuity Correction[a]	.109	1	.741			
Likelihood Ratio	.436	1	.509	.742	.369	
Fisher's Exact Test				.530	.369	
Linear-by-Linear Association	.427[c]	1	.513	.742	.369	.208
N of Valid Cases	42					

a. Computed only for a 2x2 table

b. 0 cells (.0%) have expected count less than 5. The minimum expected count is 6.00.

c. The standardized statistic is -.654.

Presence of laxative abuse

Crosstab

Count

		Completer_postdata		
		Yes	No post	Total
Hx_laxative	Yes	4	0	4
	No	31	7	38
Total		35	7	42

Chi-Square Tests

	Value	df	Asymp. Sig. (2-sided)	Exact Sig. (2-sided)	Exact Sig. (1-sided)	Point Probability
Pearson Chi-Square	.884[b]	1	.347	.591	.468	
Continuity Correction[a]	.055	1	.814			
Likelihood Ratio	1.541	1	.215	.591	.468	
Fisher's Exact Test				1.000	.468	
Linear-by-Linear Association	.863[c]	1	.353	.591	.468	.468
N of Valid Cases	42					

a. Computed only for a 2x2 table

b. 2 cells (50.0%) have expected count less than 5. The minimum expected count is .67.

c. The standardized statistic is .929.

Crosstab

Count

		F_U_data		
		No	Yes	Total
Hx_laxative	Yes	1	3	4
	No	13	25	38
Total		14	28	42

Chi-Square Tests

	Value	df	Asymp. Sig. (2-sided)	Exact Sig. (2-sided)	Exact Sig. (1-sided)	Point Probability
Pearson Chi-Square	.138[b]	1	.710	1.000	.593	
Continuity Correction[a]	.000	1	1.000			
Likelihood Ratio	.144	1	.704	1.000	.593	
Fisher's Exact Test				1.000	.593	
Linear-by-Linear Association	.135[c]	1	.713	1.000	.593	.410
N of Valid Cases	42					

a. Computed only for a 2x2 table

b. 2 cells (50.0%) have expected count less than 5. The minimum expected count is 1.33.

c. The standardized statistic is -.367.

2. Independent samples t-tests for demographics

Group Statistics

	Completer_postdata	N	Mean	Std. Deviation	Std. Error Mean
Age	Yes	35	21.657	6.3010	1.0651
	No post	7	26.429	11.1334	4.2080
Educ_continuous	Yes	35	12.0857	2.02007	.34145
	No post	7	12.2857	2.05866	.77810
BMI_Gp1	Yes	35	15.8400	2.76628	.46759
	No post	7	15.8829	1.65673	.62619
Prev_admiss_ED	Yes	35	2.37	3.011	.509
	No post	7	.71	.951	.360
Estim_ED_ duration_mths	Yes	35	60.6000	56.82388	9.60499
	No post	7	75.8571	93.51012	35.34350

Independent Samples Test

		Levene's Test for Equality of Variances		t-test for Equality of Means			
		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference
Age	Equal variances assumed	8.859	.005	-1.593	40	.119	-4.7714
	Equal variances not assumed			-1.099	6.788	.309	-4.7714
Educ_continuous	Equal variances assumed	.028	.869	-.238	40	.813	-.20000
	Equal variances not assumed			-.235	8.478	.820	-.20000
BMI_Gp1	Equal variances assumed	2.277	.139	-.039	40	.969	-.04286
	Equal variances not assumed			-.055	13.799	.957	-.04286
Prev_admiss_ED	Equal variances assumed	4.100	.050	1.429	40	.161	1.657
	Equal variances not assumed			2.660	31.684	.012	1.657
Estim_ED_ duration_mths	Equal variances assumed	4.791	.035	-.579	40	.566	-15.25714
	Equal variances not assumed			-.417	6.912	.690	-15.25714

Group Statistics

	F_U_data	N	Mean	Std. Deviation
Age	No	14	25.643	9.1535
	Yes	28	20.857	5.8482
Educ_continuous	No	14	12.5000	1.87083
	Yes	28	11.9286	2.07147
BMI_Gp1	No	14	16.1179	3.05955
	Yes	28	15.7118	2.38381
Estim_ED_ duration_mths	No	14	74.5714	75.09657
	Yes	28	57.4286	56.94405
Prev_admiss_ED	No	14	1.79	2.694
	Yes	28	2.25	2.939

Independent Samples Test

		Levene's Test for Equality of Variances		t-test for Equality of Means			
		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference
Age	Equal variances assumed	7.623	.009	2.061	40	.046	4.7857
	Equal variances not assumed			1.783	18.477	.091	4.7857
Educ_continuous	Equal variances assumed	.427	.517	.869	40	.390	.57143
	Equal variances not assumed			.900	28.641	.376	.57143
BMI_Gp1	Equal variances assumed	.139	.711	.473	40	.639	.40607
	Equal variances not assumed			.435	21.151	.668	.40607
Estim_ED_ duration_mths	Equal variances assumed	2.545	.119	.826	40	.414	17.14286
	Equal variances not assumed			.753	20.725	.460	17.14286
Prev_admiss_ED	Equal variances assumed	.641	.428	-.496	40	.623	-.464
	Equal variances not assumed			-.511	28.258	.614	-.464

3. Independent samples t-tests for pre-treatment formal assessment measures

Group Statistics

	Completers	N	Mean	Std. Deviation
PreANSOCQ_Total	completer	35	48.5029	14.06634
	noncompleter	7	59.4857	18.95217
PreEDI_DT	completer	35	15.0429	5.60511
	noncompleter	6	9.8333	7.57408
PreEDI_B	completer	35	4.9143	6.51862
	noncompleter	6	2.1667	3.92003
PreEDI_BD	completer	35	17.9286	7.73280
	noncompleter	6	12.3333	6.37704
PreEDI_I	completer	35	15.5143	9.02406
	noncompleter	6	9.8333	6.24233
PreEDI_P	completer	35	9.0000	5.39608
	noncompleter	6	7.6667	3.88158
PreEDI_ID	completer	35	5.8286	3.53542
	noncompleter	6	5.5000	3.27109
PreEDI_IA	completer	35	13.1429	7.36503
	noncompleter	6	14.5000	8.59651
PreEDI_MF	completer	35	7.2000	6.85050
	noncompleter	6	5.5000	3.78153
PreEDI_A	completer	35	9.0286	5.23273
	noncompleter	6	8.8333	4.99667
PreEDI_IR	completer	35	8.8286	6.85345
	noncompleter	6	9.0000	8.19756
PreEDI_SI	completer	35	9.8857	4.70151
	noncompleter	6	8.5000	2.42899
PreBDI_Total_Raw	completer	35	34.9929	12.75021
	noncompleter	7	32.7000	10.99985
PreEDEQ_restraintsub	completer	35	4.4800	1.38326
	noncompleter	7	2.2286	1.95424
PreEDEQ_eatingsub	completer	35	3.9771	1.26400
	noncompleter	7	2.3143	1.56996
PreEDEQ_shapesub	completer	35	4.9839	.99739
	noncompleter	7	3.6964	2.02054
PreEDEQ_weightsub	completer	35	4.5514	1.18331
	noncompleter	7	2.8571	2.17168
PreSES_Total	completer	35	85.4429	32.29159
	noncompleter	7	96.8571	54.09075
PreDB_Burden_subscale	completer	35	3.6183	.77756
	noncompleter	7	4.2095	.48447
PreDB_Benefit_subscale	completer	35	3.4354	1.06705
	noncompleter	7	2.9643	1.16081
PreDB_Avoid_subscale	completer	35	3.1367	1.15622
	noncompleter	7	3.1837	1.15680
PreTERS_total	completer	35	35.0857	8.22611
	noncompleter	7	35.4286	13.16380

Independent Samples Test

	Levene's Test for Equality of Variances		t-test for Equality of Means		
	F	Sig.	t	df	Sig. (2-tailed)
PreANSOCQ_Total	1.947	.171	-1.780	40	.083
			-1.455	7.379	.187
PreEDI_DT	2.027	.162	2.000	39	.052
			1.611	5.975	.159
PreEDI_B	2.711	.108	.996	39	.326
			1.414	10.516	.186
PreEDI_BD	.492	.487	1.672	39	.102
			1.921	7.766	.092
PreEDI_I	3.255	.079	1.475	39	.148
			1.913	9.053	.088
PreEDI_P	1.762	.192	.577	39	.567
			.729	8.721	.485
PreEDI_ID	.000	.992	.212	39	.833
			.225	7.161	.829
PreEDI_IA	.237	.629	-.408	39	.686
			-.364	6.323	.727
PreEDI_MF	1.524	.224	.588	39	.560
			.881	11.665	.396
PreEDI_A	.018	.894	.085	39	.933
			.088	7.020	.932
PreEDI_IR	.565	.457	-.055	39	.956
			-.048	6.257	.963
PreEDI_SI	3.596	.065	.701	39	.488
			1.090	12.714	.296
PreBDI_Total_Raw	.695	.409	.443	40	.660
			.490	9.536	.635
PreEDEQ_restraintsub	1.353	.252	3.667	40	.001
			2.906	7.250	.022
PreEDEQ_eatingsub	1.164	.287	3.055	40	.004
			2.637	7.634	.031
PreEDEQ_shapesub	11.357	.002	2.575	40	.014
			1.646	6.596	.146
PreEDEQ_weightsub	9.717	.003	2.971	40	.005
			2.005	6.730	.087
PreSES_Total	4.898	.033	-.757	40	.453
			-.539	6.880	.607
PreDB_Burden_subscale	2.102	.155	-1.927	40	.061
			-2.623	13.159	.021
PreDB_Benefit_subscale	.119	.732	1.052	40	.299
			.993	8.158	.349
PreDB_Avoid_subscale	.035	.853	-.098	40	.922
			-.098	8.577	.924
PreTERS_total	2.932	.095	-.091	40	.928
			-.066	6.966	.949

Group Statistics

	F_U_data	N	Mean	Std. Deviation
PreANSOCQ_Total	Yes	28	46.2000	12.85523
	No	14	58.6000	16.84550
PreEDI_DT	Yes	28	15.5179	5.18452
	No	13	11.6154	7.26336
PreEDI_B	Yes	28	4.2857	6.34710
	No	13	5.0000	6.24500
PreEDI_BD	Yes	28	17.7679	7.64427
	No	13	15.6923	8.06623
PreEDI_I	Yes	28	15.5357	9.54708
	No	13	12.8462	7.09279
PreEDI_P	Yes	28	7.9643	5.07340
	No	13	10.6154	5.14034
PreEDI_ID	Yes	28	5.8571	3.46105
	No	13	5.6154	3.59487
PreEDI_IA	Yes	28	13.1429	7.03280
	No	13	13.7692	8.58442
PreEDI_MF	Yes	28	5.7500	4.81221
	No	13	9.5385	8.79977
PreEDI_A	Yes	28	8.8571	4.59238
	No	13	9.3077	6.35590
PreEDI_IR	Yes	28	8.1786	6.30728
	No	13	10.3077	8.26019
PreEDI_SI	Yes	28	10.0357	4.68632
	No	13	8.9231	3.94676
PreBDI_Total_Raw	Yes	28	34.9643	13.34855
	No	14	33.9036	10.60657
PreEDEQ_restraintsub	Yes	28	4.4000	1.31431
	No	14	3.5143	2.21146
PreEDEQ_eatingsub	Yes	28	4.0286	1.07492
	No	14	3.0429	1.85999
PreEDEQ_shapesub	Yes	28	5.0871	.95914
	No	14	4.1339	1.63309
PreEDEQ_weightsub	Yes	28	4.6107	1.18019
	No	14	3.5857	1.86542
PreSES_Total	Yes	28	80.8036	32.41866
	No	14	100.4286	40.94784
PreDB_Burden_subscale	Yes	28	3.5514	.79017
	No	14	4.0476	.61069
PreDB_Benefit_subscale	Yes	28	3.5049	.98632
	No	14	3.0607	1.23983
PreDB_Avoid_subscale	Yes	28	3.0638	1.21861
	No	14	3.3061	.99426
PreTERS_total	Yes	28	34.0357	8.13079
	No	14	37.3571	10.57288

Independent Samples Test

	Levene's Test for Equality of Variances		t-test for Equality of Means			
	F	Sig.	t	df	Sig. (2-tailed)	Mean Difference
PreANSOCQ_Total	3.168	.083	2.654	40	.011	12.40000
			2.424	20.823	.025	12.40000
PreEDI_DT	4.509	.040	-1.970	39	.056	-3.90247
			-1.742	17.903	.099	-3.90247
PreEDI_B	.123	.728	.337	39	.738	.71429
			.339	23.834	.738	.71429
PreEDI_BD	.124	.726	-.795	39	.431	-2.07555
			-.779	22.366	.444	-2.07555
PreEDI_I	5.485	.024	-.904	39	.372	-2.68956
			-1.008	30.947	.321	-2.68956
PreEDI_P	.001	.971	1.551	39	.129	2.65110
			1.543	23.200	.136	2.65110
PreEDI_ID	.632	.431	-.206	39	.838	-.24176
			-.203	22.684	.841	-.24176
PreEDI_IA	2.305	.137	.247	39	.806	.62637
			.230	19.790	.821	.62637
PreEDI_MF	7.895	.008	1.788	39	.082	3.78846
			1.455	15.431	.166	3.78846
PreEDI_A	2.326	.135	.258	39	.798	.45055
			.229	18.051	.821	.45055
PreEDI_IR	.360	.552	.911	39	.368	2.12912
			.824	18.765	.420	2.12912
PreEDI_SI	2.860	.099	-.741	39	.463	-1.11264
			-.790	27.597	.436	-1.11264
PreBDI_Total_Raw	.677	.416	-.259	40	.797	-1.06071
			-.280	32.062	.782	-1.06071
PreEDEQ_restraintsub	11.835	.001	-1.630	40	.111	-.88571
			-1.382	17.731	.184	-.88571
PreEDEQ_eatingsub	12.583	.001	-2.182	40	.035	-.98571
			-1.836	17.470	.084	-.98571
PreEDEQ_shapesub	5.253	.027	-2.387	40	.022	-.95313
			-2.017	17.619	.059	-.95313
PreEDEQ_weightsub	3.596	.065	-2.176	40	.036	-1.02500
			-1.877	18.370	.077	-1.02500
PreSES_Total	.265	.610	1.693	40	.098	19.62500
			1.565	21.413	.132	19.62500
PreDB_Burden_subscale	2.946	.094	2.058	40	.046	.49619
			2.243	32.805	.032	.49619
PreDB_Benefit_subscale	2.096	.155	-1.262	40	.214	-.44420
			-1.168	21.493	.255	-.44420
PreDB_Avoid_subscale	1.177	.284	.644	40	.524	.24235
			.689	31.348	.496	.24235

Overall effectiveness of 4 weeks of inpatient treatment

1. ANOVA for BMI

Descriptive Statistics

	N	Mean	Std. Deviation
BMI_Gp1	27	15.4822	2.09016
BMI_Gp2	27	15.7096	2.07120
BMI_Gp3	27	15.8789	2.05669
BMI_Gp4	27	16.0974	2.07672
BMI_FU	27	17.4407	2.04744

Mauchly's Test of Sphericity[b]

Measure: MEASURE_1

Within Subjects Effect	Mauchly's W	Approx. Chi-Square	df	Sig.	Epsilon[a] Greenhouse-Geisser
bmi	.016	101.320	9	.000	.358

Tests the null hypothesis that the error covariance matrix of the orthonormalized transformed dependent variables is proportional to an identity matrix.

a. May be used to adjust the degrees of freedom for the averaged tests of significance. Corrected tests are displayed in the Tests of Within-Subjects Effects table.

b.
Design: Intercept
Within Subjects Design: bmi

Tests of Within-Subjects Effects

Measure: MEASURE_1

Source		Type III Sum of Squares	df	Mean Square	F	Sig.
bmi	Sphericity Assumed	64.210	4	16.053	67.209	.000
	Greenhouse-Geisser	64.210	1.431	44.873	67.209	.000
	Huynh-Feldt	64.210	1.491	43.062	67.209	.000
	Lower-bound	64.210	1.000	64.210	67.209	.000
Error(bmi)	Sphericity Assumed	24.840	104	.239		
	Greenhouse-Geisser	24.840	37.204	.668		
	Huynh-Feldt	24.840	38.768	.641		
	Lower-bound	24.840	26.000	.955		

Tests of Within-Subjects Contrasts

Measure: MEASURE_1

Source	bmi	Type III Sum of Squares	df	Mean Square	F	Sig.
bmi	Linear	50.035	1	50.035	94.712	.000
	Quadratic	10.035	1	10.035	33.738	.000
	Cubic	3.778	1	3.778	39.690	.000
	Order 4	.362	1	.362	10.494	.003
Error(bmi)	Linear	13.735	26	.528		
	Quadratic	7.734	26	.297		
	Cubic	2.475	26	.095		
	Order 4	.896	26	.034		

2. Means on formal measures across all participants (completers and non-completers)

	N	Mean	Std. Deviation
PreANSOCQ_Total	42	50.3333	15.29072
PostANSOCQ_Total	35	58.3943	17.49882
FU_ANSOCQ_Total	28	53.9607	19.15257
PreEDI_DT	41	14.2805	6.11151
PostEDI_DT	35	12.3371	5.87332
PreEDI_B	41	4.5122	6.24549
PostEDI_B	35	2.6286	3.96370
PreEDI_BD	41	17.1098	7.74073
PostEDI_BD	35	16.9714	7.78946
PreEDI_I	41	14.6829	8.84432
PostEDI_I	35	13.6000	8.65074
PreEDI_P	41	8.8049	5.18276
PostEDI_P	35	8.6571	4.53706
PreEDI_ID	41	5.7805	3.46058
PostEDI_ID	35	5.5857	4.07013
PreEDI_IA	41	13.3415	7.45523
PostEDI_IA	35	11.0286	7.31833
PreEDI_MF	41	6.9512	6.48441
PostEDI_MF	35	6.2943	5.05458
PreEDI_A	41	9.0000	5.13809
PostEDI_A	35	8.5029	5.14984
PreEDI_IR	41	8.8537	6.95184
PostEDI_IR	35	7.7714	6.02976
PreEDI_SI	41	9.6829	4.44657
PostEDI_SI	35	8.0286	4.79881
FU_EDI_DT	28	13.1357	6.57922
FU_EDI_B	28	2.2500	3.71807
FU_EDI_BD	28	17.5179	8.79760
FU_EDI_I	28	13.3750	8.61590
FU_EDI_P	28	8.1107	4.17872
FU_EDI_ID	28	5.3393	3.56956
FU_EDI_IA	28	10.0750	6.71111
FU_EDI_MF	28	4.9643	4.21182
FU_EDI_A	28	7.9643	4.77441
FU_EDI_IR	28	6.9821	5.48817
FU_EDI_SI	28	8.4286	4.70168
PreBDI_Total_Raw	42	34.6107	12.38012
PostBDI_Total	34	27.8529	14.94258
PreEDEQ_restraintsub	42	4.1048	1.69316
PtEDEQ_restraintsub	34	2.2471	1.47221
PreEDEQ_eatingsub	42	3.7000	1.44188
PtEDEQ_eatingsub	34	2.7412	1.40262
PreEDEQ_shapesub	42	4.7693	1.28773
PtEDEQ_shapesub	34	4.4743	1.54073
PreEDEQ_weightsub	42	4.2690	1.50325
PtEDEQ_weightsub	34	3.9706	1.73249
FU_EDEQ_Restraint_ scale	28	2.5964	1.47685
FU_EDEQ_Eating_scale	28	3.0339	1.48118
FU_EDEQ_shape_scale	28	4.5223	1.59791
FU_EDEQ_Weight_scale	28	4.0071	1.80163
PreSES_Total	42	87.3452	36.21354
PostSES_Total	34	101.7647	37.72714
FU_SES_Total	28	92.6786	42.56068

	N	Mean	Std. Deviation
PreDB_Burden_subscale	42	3.7168	.76515
PtDB_Burden_subscale	32	3.8375	.80535
PreDB_Benefit_subscale	42	3.3568	1.08303
PtDB_Benefit_subscale	32	3.5379	.85757
PreDB_Avoid_subscale	42	3.1446	1.14226
PtDB_Avoid_subscale	32	3.1987	1.18953
FUDB_Benefit_scale	26	3.4635	.88102
FUDB_Burden_scale	26	3.4321	.86186
FUDB_Avoid_scale	26	2.9203	.98070
PreTERS_total	42	35.1429	9.02725
PostTERS_total	34	37.9412	8.02625
Valid N (listwise)	24		

3. Paired samples t-tests for formal assessment measures: pre-post assessments

Formal assessment measures : ANSOCQ, EDE-Q, EDI2, TER, DBS, SES

Paired Samples Statistics

		Mean	N	Std. Deviation
Pair 1	PreANSOCQ_Total	48.5029	35	14.06634
	PostANSOCQ_Total	58.3943	35	17.49882
Pair 2	PreEDI_DT	15.0429	35	5.60511
	PostEDI_DT	12.3371	35	5.87332
Pair 3	PreEDI_B	4.9143	35	6.51862
	PostEDI_B	2.6286	35	3.96370
Pair 4	PreEDI_BD	17.9286	35	7.73280
	PostEDI_BD	16.9714	35	7.78946
Pair 5	PreEDI_I	15.5143	35	9.02406
	PostEDI_I	13.6000	35	8.65074
Pair 6	PreEDI_P	9.0000	35	5.39608
	PostEDI_P	8.6571	35	4.53706
Pair 7	PreEDI_ID	5.8286	35	3.53542
	PostEDI_ID	5.5857	35	4.07013
Pair 8	PreEDI_IA	13.1429	35	7.36503
	PostEDI_IA	11.0286	35	7.31833
Pair 9	PreEDI_MF	7.2000	35	6.85050
	PostEDI_MF	6.2943	35	5.05458
Pair 10	PreEDI_A	9.0286	35	5.23273
	PostEDI_A	8.5029	35	5.14984
Pair 11	PreEDI_IR	8.8286	35	6.85345
	PostEDI_IR	7.7714	35	6.02976
Pair 12	PreEDI_SI	9.8857	35	4.70151
	PostEDI_SI	8.0286	35	4.79881
Pair 13	PreBDI_Total_Raw	34.8750	34	12.92259
	PostBDI_Total	27.8529	34	14.94258
Pair 14	PreCDI	24.8971	34	10.72647
	PostCDI	20.5294	34	10.99100
Pair 15	PreEDEQ_08	1.8235	34	2.15281
	PostEDEQ_08	.2353	34	.49597
Pair 16	PreEDEQ_16	.4706	34	.50664
	PostEDEQ_16	.2941	34	.46250
Pair 17	PreEDEQ_21	.5758	33	.50189
	PostEDEQ_21	.3939	33	.49620
Pair 18	PreEDEQ_22	33.2963	27	44.87488
	PostEDEQ_22	4.2222	27	6.50049
Pair 19	PreEDEQ_27	.3636	33	.48850
	PostEDEQ_27	.3030	33	.46669
Pair 20	PreEDEQ_restraintsub	4.5059	34	1.39543
	PtEDEQ_restraintsub	2.2471	34	1.47221
Pair 21	PreEDEQ_eatingsub	4.0588	34	1.18555
	PtEDEQ_eatingsub	2.7412	34	1.40262
Pair 22	PreEDEQ_shapesub	5.0239	34	.98353
	PtEDEQ_shapesub	4.4743	34	1.54073
Pair 23	PreEDEQ_weightsub	4.5794	34	1.18929
	PtEDEQ_weightsub	3.9706	34	1.73249
Pair 24	PreSES_Total	84.8088	34	32.55532
	PostSES_Total	101.7647	34	37.72714
Pair 25	PreDB_Burden_subscale	3.6346	32	.74682
	PtDB_Burden_subscale	3.8375	32	.80535
Pair 26	PreDB_Benefit_subscale	3.4762	32	1.07383
	PtDB_Benefit_subscale	3.5379	32	.85757
Pair 27	PreDB_Avoid_subscale	3.2031	32	1.17315
	PtDB_Avoid_subscale	3.1987	32	1.18953
Pair 28	PreTERS_total	34.7647	34	8.12426
	PostTERS_total	37.9412	34	8.02625

Paired Samples Test

	Paired Differences		t	df	Sig. (2-tailed)
	Mean	Std. Deviation			
PreANSOCQ_Total - PostANSOCQ_Total	-9.89143	11.04220	-5.300	34	.000
PreEDI_DT - PostEDI_DT	2.70571	4.21921	3.794	34	.001
PreEDI_B - PostEDI_B	2.28571	4.92635	2.745	34	.010
PreEDI_BD - PostEDI_BD	.95714	3.43505	1.648	34	.108
PreEDI_I - PostEDI_I	1.91429	4.77353	2.372	34	.023
PreEDI_P - PostEDI_P	.34286	4.15114	.489	34	.628
PreEDI_ID - PostEDI_ID	.24286	3.04952	.471	34	.641
PreEDI_IA - PostEDI_IA	2.11429	6.19664	2.019	34	.051
PreEDI_MF - PostEDI_MF	.90571	3.35006	1.599	34	.119
PreEDI_A - PostEDI_A	.52571	3.82441	.813	34	.422
PreEDI_IR - PostEDI_IR	1.05714	6.60188	.947	34	.350
PreEDI_SI - PostEDI_SI	1.85714	3.69533	2.973	34	.005
PreBDI_Total_Raw - PostBDI_Total	7.02206	12.09720	3.385	33	.002
PreCDI - PostCDI	4.36765	9.32844	2.730	33	.010
PreEDEQ_08 - PostEDEQ_08	1.58824	2.03183	4.558	33	.000
PreEDEQ_16 - PostEDEQ_16	.17647	.52052	1.977	33	.056
PreEDEQ_21 - PostEDEQ_21	.18182	.46466	2.248	32	.032
PreEDEQ_22 - PostEDEQ_22	29.07407	41.38926	3.650	26	.001
PreEDEQ_27 - PostEDEQ_27	.06061	.42862	.812	32	.423
PreEDEQ_restraintsub - PtEDEQ_restraintsub	2.25882	1.49547	8.807	33	.000
PreEDEQ_eatingsub - PtEDEQ_eatingsub	1.31765	1.15141	6.673	33	.000
PreEDEQ_shapesub - PtEDEQ_shapesub	.54963	.87632	3.657	33	.001
PreEDEQ_weightsub - PtEDEQ_weightsub	.60882	1.01455	3.499	33	.001
PreSES_Total - PostSES_ Total	-16.95588	19.71247	-5.016	33	.000
PreDB_Burden_subscale - PtDB_Burden_subscale	-.20292	.56761	-2.022	31	.052
PreDB_Benefit_subscale - PtDB_Benefit_subscale	-.06172	.75086	-.465	31	.645
PreDB_Avoid_subscale - PtDB_Avoid_subscale	.00446	.59262	.043	31	.966
PreTERS_total - PostTERS_total	-3.17647	4.68052	-3.957	33	.000

Diagnostics from EDE-Q

Paired Samples Statistics

	Mean	N	Std. Deviation
PreEDEQ_17	13.1429	35	37.21412
PostEDI_17	1.0286	35	.85700
PreEDEQ_22	33.2963	27	44.87488
PostEDEQ_22	4.2222	27	6.50049
PreEDEQ_24	3.5000	26	8.53346
PostEDEQ_24	2.4231	26	7.59038
PreEDEQ_26	1.7059	34	6.93052
PostEDI_26	1.2647	34	1.02422
PreEDEQ_28	5.8261	23	10.28084
PostEDEQ_28	4.6522	23	9.69352
PreEDEQ_08	1.8235	34	2.15281
PostEDEQ_08	.2353	34	.49597
PreEDEQ_12	5.3529	34	1.49509
PostEDEQ_12	4.8529	34	1.94051
PreEDEQ_13	4.7059	34	2.02304
PostEDEQ_13	4.6471	34	1.95219
PreEDEQ_20	18.4000	30	21.39707
PostEDEQ_20	11.5000	30	20.53886

Paired Samples Test

		Paired Differences				t	df	Sig. (2-tailed)
				95% Confidence Interval of the Difference				
		Mean	Std. Deviation	Lower	Upper			
Pair 1	PreEDEQ_17 - PostEDI_17	12.11429	37.32746	-.70815	24.93672	1.920	34	.063
Pair 2	PreEDEQ_22 - PostEDEQ_22	29.07407	41.38926	12.70103	45.44712	3.650	26	.001
Pair 3	PreEDEQ_24 - PostEDEQ_24	1.07692	3.58801	-.37231	2.52615	1.530	25	.138
Pair 4	PreEDEQ_26 - PostEDI_26	.44118	6.81883	-1.93803	2.82038	.377	33	.708
Pair 5	PreEDEQ_28 - PostEDEQ_28	1.17391	10.52120	-3.37580	5.72362	.535	22	.598
Pair 6	PreEDEQ_08 - PostEDEQ_08	1.58824	2.03183	.87930	2.29718	4.558	33	.000
Pair 7	PreEDEQ_12 - PostEDEQ_12	.50000	1.46163	-.00999	1.00999	1.995	33	.054
Pair 8	PreEDEQ_13 - PostEDEQ_13	.05882	1.07142	-.31501	.43266	.320	33	.751
Pair 9	PreEDEQ_20 - PostEDEQ_20	6.90000	25.04802	-2.45309	16.25309	1.509	29	.142

4. Paired samples t-tests for formal assessment measures: post-follow up assessments

Formal assessment measures : ANSOCQ, EDE-Q, EDI2, DBS, SES

Paired Samples Statistics

	Mean	N	Std. Deviation	Std. Error Mean
PostANSOCQ_Total	53.8500	28	15.46179	2.92200
FU_ANSOCQ_Total	53.9607	28	19.15257	3.61950
PostEDI_DT	13.4571	28	5.38306	1.01730
FU_EDI_DT	13.1357	28	6.57922	1.24335
PostEDI_B	2.0000	28	3.23179	.61075
FU_EDI_B	2.2500	28	3.71807	.70265
PostEDI_BD	17.3571	28	7.83257	1.48022
FU_EDI_BD	17.5179	28	8.79760	1.66259
PostEDI_I	14.6786	28	8.77730	1.65875
FU_EDI_I	13.3750	28	8.61590	1.62825
PostEDI_P	8.2500	28	4.32585	.81751
FU_EDI_P	8.1107	28	4.17872	.78970
PostEDI_ID	5.8214	28	3.72234	.70346
FU_EDI_ID	5.3393	28	3.56956	.67458
PostEDI_IA	10.7857	28	6.84407	1.29341
FU_EDI_IA	10.0750	28	6.71111	1.26828
PostEDI_MF	5.5714	28	4.11347	.77737
FU_EDI_MF	4.9643	28	4.21182	.79596
PostEDI_A	8.2857	28	4.68929	.88619
FU_EDI_A	7.9643	28	4.77441	.90228
PostEDI_IR	7.8214	28	5.89446	1.11395
FU_EDI_IR	6.9821	28	5.48817	1.03717
PostEDI_SI	8.3214	28	4.86144	.91873
FU_EDI_SI	8.4286	28	4.70168	.88853
PtEDEQ_restraintsub	2.3357	28	1.49771	.28304
FU_EDEQ_Restraint_ scale	2.5964	28	1.47685	.27910
PtEDEQ_eatingsub	2.8071	28	1.46513	.27688
FU_EDEQ_Eating_scale	3.0339	28	1.48118	.27992
PtEDEQ_shapesub	4.5402	28	1.58116	.29881
FU_EDEQ_shape_scale	4.5223	28	1.59791	.30198
PtEDEQ_weightsub	4.0071	28	1.82126	.34419
FU_EDEQ_Weight_scale	4.0071	28	1.80163	.34048
PostSES_Total	96.7143	28	37.13126	7.01715
FU_SES_Total	92.6786	28	42.56068	8.04321
PtDB_Burden_subscale	3.7222	24	.87182	.17796
FUDB_Burden_scale	3.4375	24	.86406	.17638
PtDB_Benefit_subscale	3.6359	24	.79719	.16273
FUDB_Benefit_scale	3.4240	24	.90525	.18478
PtDB_Avoid_subscale	3.0446	24	1.22670	.25040
FUDB_Avoid_scale	2.9673	24	1.00221	.20458

Paired Samples Test

	Paired Differences				t	df	Sig. (2-tailed)
			95% Confidence Interval of the Difference				
	Mean	Std. Deviation	Lower	Upper			
PostANSOCQ_Total - FU ANSOCQ_Total	-.11071	11.72573	-4.65748	4.43605	-.050	27	.961
PostEDI_DT - FU_EDI_ DT	.32143	4.65915	-1.48520	2.12806	.365	27	.718
PostEDI_B - FU_EDI_B	-.25000	2.68914	-1.29274	.79274	-.492	27	.627
PostEDI_BD - FU_EDI_ BD	-.16071	4.71219	-1.98791	1.66648	-.180	27	.858
PostEDI_I - FU_EDI_I	1.30357	5.69168	-.90343	3.51057	1.212	27	.236
PostEDI_P - FU_EDI_P	.13929	2.74244	-.92412	1.20269	.269	27	.790
PostEDI_ID - FU_EDI_ID	.48214	2.33921	-.42491	1.38919	1.091	27	.285
PostEDI_IA - FU_EDI_IA	.71071	4.92487	-1.19895	2.62038	.764	27	.452
PostEDI_MF - FU_EDI_ MF	.60714	2.78008	-.47086	1.68514	1.156	27	.258
PostEDI_A - FU_EDI_A	.32143	3.44592	-1.01476	1.65762	.494	27	.626
PostEDI_IR - FU_EDI_IR	.83929	4.40339	-.86817	2.54674	1.009	27	.322
PostEDI_SI - FU_EDI_SI	-.10714	3.07124	-1.29805	1.08376	-.185	27	.855
PtEDEQ_restraintsub - FU_EDEQ_Restraint_ scale	-.26071	1.45076	-.82326	.30183	-.951	27	.350
PtEDEQ_eatingsub - FU_ EDEQ_Eating_scale	-.22679	1.14839	-.67208	.21851	-1.045	27	.305
PtEDEQ_shapesub - FU_ EDEQ_shape_scale	.01786	.88370	-.32480	.36052	.107	27	.916
PtEDEQ_weightsub - FU_ EDEQ_Weight_scale	.00000	.99926	-.38747	.38747	.000	27	1.000
PostSES_Total - FU_ SES_Total	4.03571	23.47178	-5.06569	13.13712	.910	27	.371
PtDB_Burden_subscale - FUDB_Burden_scale	.28472	.45333	.09330	.47615	3.077	23	.005
PtDB_Benefit_subscale - FUDB_Benefit_scale	.21198	.75019	-.10480	.52875	1.384	23	.180
PtDB_Avoid_subscale - FUDB_Avoid_scale	.07738	.69186	-.21477	.36953	.548	23	.589

Comparison of outcome between the MET and TAU groups

1. Comparison of MET versus TAU completion rate

F_U_data * Group Crosstabulation

Count

		Group		
		MET group	TAU group	Total
F_U_data	No	6	8	14
	Yes	17	11	28
Total		23	19	42

Chi-Square Tests

	Value	df	Asymp. Sig. (2-sided)	Exact Sig. (2-sided)	Exact Sig. (1-sided)	Point Probability
Pearson Chi-Square	1.201[b]	1	.273	.335	.221	
Continuity Correction [a]	.589	1	.443			
Likelihood Ratio	1.201	1	.273	.335	.221	
Fisher's Exact Test				.335	.221	
Linear-by-Linear Association	1.173[c]	1	.279	.335	.221	.144
N of Valid Cases	42					

a. Computed only for a 2x2 table

b. 0 cells (.0%) have expected count less than 5. The minimum expected count is 6.33.

c. The standardized statistic is -1.083.

2. ANOVA of Changes in BMI: MET versus TAU

Descriptive Statistics

	Group	Mean	Std. Deviation	N
BMI_Gp1	MET group	15.0776	1.90416	17
	TAU group	16.6918	2.79310	11
BMI_Gp2	MET group	15.2759	1.88242	17
	TAU group	16.9582	2.73767	11
BMI_Gp3	MET group	15.4529	1.92869	17
	TAU group	17.1036	2.64016	11
BMI_Gp4	MET group	15.6806	1.99094	17
	TAU group	17.3436	2.69316	11
BMI_FU	MET group	17.1353	1.95664	17
	TAU group	18.2409	2.28330	11

Mauchly's Test of Sphericity[b]

Measure: MEASURE_1

Within Subjects Effect	Mauchly's W	Approx. Chi-Square	df	Sig.	Epsilon[a] Greenhouse-Geisser
bmi	.016	96.207	9	.000	.360

Tests the null hypothesis that the error covariance matrix of the orthonormalized transformed dependent variables is proportional to an identity matrix.

a. May be used to adjust the degrees of freedom for the averaged tests of significance. Corrected tests are displayed in the Tests of Within-Subjects Effects table.

b.
Design: Intercept+Group
Within Subjects Design: bmi

Tests of Within-Subjects Effects

Measure: MEASURE_1

Source		Type III Sum of Squares	df	Mean Square	F	Sig.
bmi	Sphericity Assumed	57.314	4	14.329	58.883	.000
	Greenhouse-Geisser	57.314	1.438	39.851	58.883	.000
	Huynh-Feldt	57.314	1.563	36.665	58.883	.000
	Lower-bound	57.314	1.000	57.314	58.883	.000
bmi * Group	Sphericity Assumed	.506	4	.126	.520	.721
	Greenhouse-Geisser	.506	1.438	.352	.520	.540
	Huynh-Feldt	.506	1.563	.324	.520	.555
	Lower-bound	.506	1.000	.506	.520	.478
Error(bmi)	Sphericity Assumed	24.334	100	.243		
	Greenhouse-Geisser	24.334	35.955	.677		
	Huynh-Feldt	24.334	39.080	.623		
	Lower-bound	24.334	25.000	.973		

Tests of Within-Subjects Contrasts

Measure: MEASURE_1

Source	bmi	Type III Sum of Squares	df	Mean Square	F	Sig.
bmi	Linear	45.053	1	45.053	83.290	.000
	Quadratic	8.567	1	8.567	28.663	.000
	Cubic	3.390	1	3.390	34.509	.000
	Order 4	.305	1	.305	8.623	.007
bmi * Group	Linear	.213	1	.213	.393	.536
	Quadratic	.261	1	.261	.875	.359
	Cubic	.020	1	.020	.199	.659
	Order 4	.012	1	.012	.346	.562
Error(bmi)	Linear	13.523	25	.541		
	Quadratic	7.472	25	.299		
	Cubic	2.456	25	.098		
	Order 4	.884	25	.035		

3. Completers treatment choice at follow-up: comparison of MET versus TAU

Group * hospitalisation_status Crosstabulation

			hospitalisation_status		
			out_no	partial_whole	Total
Group	MET group	Count	3	16	19
		% within Group	15.8%	84.2%	100.0%
		% within hospitalisation_status	25.0%	69.6%	54.3%
		% of Total	8.6%	45.7%	54.3%
	TAU group	Count	9	7	16
		% within Group	56.3%	43.8%	100.0%
		% within hospitalisation_status	75.0%	30.4%	45.7%
		% of Total	25.7%	20.0%	45.7%
Total		Count	12	23	35
		% within Group	34.3%	65.7%	100.0%
		% within hospitalisation_status	100.0%	100.0%	100.0%
		% of Total	34.3%	65.7%	100.0%

Chi-Square Tests

	Value	df	Asymp. Sig. (2-sided)	Exact Sig. (2-sided)	Exact Sig. (1-sided)	Point Probability
Pearson Chi-Square	6.311[b]	1	.012	.017	.015	
Continuity Correction[a]	4.643	1	.031			
Likelihood Ratio	6.500	1	.011	.030	.015	
Fisher's Exact Test				.030	.015	
Linear-by-Linear Association	6.131[c]	1	.013	.017	.015	.013
N of Valid Cases	35					

a. Computed only for a 2x2 table

b. 0 cells (.0%) have expected count less than 5. The minimum expected count is 5.49.

c. The standardized statistic is -2.476.

4. T-tests on difference scores (pre-post) comparing MET and TAU

Group Statistics

	Group	N	Mean	Std. Deviation
ANSOCQ_diff	MET group	19	8.9842	7.10119
	TAU group	16	10.9688	14.61445
DT	MET group	19	-1.3789	3.77941
	TAU group	16	-4.2813	4.28162
B	MET group	19	-1.3158	4.94472
	TAU group	16	-3.4375	4.80234
BD	MET group	19	-.3684	2.54319
	TAU group	16	-1.6563	4.24546
I	MET group	19	-.8947	3.72521
	TAU group	16	-3.1250	5.66716
P	MET group	19	.0000	5.14242
	TAU group	16	-.7500	2.64575
ID	MET group	19	-.1316	2.72765
	TAU group	16	-.3750	3.48090
IA	MET group	19	-1.4211	5.04773
	TAU group	16	-2.9375	7.42490
MF	MET group	19	.0684	3.04778
	TAU group	16	-2.0625	3.41504
A	MET group	19	-.1789	3.56956
	TAU group	16	-.9375	4.18678
IR	MET group	19	-1.3684	4.91269
	TAU group	16	-.6875	8.34041
SI	MET group	19	-1.3684	2.90995
	TAU group	16	-2.4375	4.48655
BDI_diff	MET group	18	4.2917	8.49578
	TAU group	16	10.0938	14.87080
CDI_diff	MET group	18	-2.0000	6.24029
	TAU group	16	-7.0313	11.53324
EDEQ_restraint_diff	MET group	18	-2.3222	1.55547
	TAU group	16	-2.1875	1.47236
EDEQ_eating_diff	MET group	18	-1.1667	1.12354
	TAU group	16	-1.4875	1.19492
EDEQ_shape_diff	MET group	18	-.5694	.99283
	TAU group	16	-.5273	.75587
EDEQ_weight_diff	MET group	18	-.5444	1.01936
	TAU group	16	-.6812	1.03744
SES_diff	MET group	18	17.4444	19.72822
	TAU group	16	16.4063	20.32668
DB_Burden_diff	MET group	17	.2624	.49920
	TAU group	15	.1356	.64764
DB_Beneift_diff	MET group	17	.2485	.73077
	TAU group	15	-.1500	.74005
DB_Avoid_diff	MET group	17	-.0588	.67017
	TAU group	15	.0571	.50666
TERS_diff	MET group	18	3.2222	5.74513
	TAU group	16	3.1250	3.28380

Independent Samples Test

	Levene's Test for Equality of Variances		t-test for Equality of Means			
	F	Sig.	t	df	Sig. (2-tailed)	Mean Difference
ANSOCQ_diff	1.686	.203	-.524	33	.604	-1.98454
			-.496	20.870	.625	-1.98454
DT	.346	.560	2.130	33	.041	2.90230
			2.107	30.279	.044	2.90230
B	.617	.438	1.281	33	.209	2.12171
			1.285	32.291	.208	2.12171
BD	4.861	.035	1.109	33	.276	1.28783
			1.063	23.637	.298	1.28783
I	.126	.725	1.396	33	.172	2.23026
			1.348	25.129	.190	2.23026
P	1.646	.208	.527	33	.602	.75000
			.555	27.799	.584	.75000
ID	.368	.548	.232	33	.818	.24342
			.227	28.233	.822	.24342
IA	2.333	.136	.716	33	.479	1.51645
			.693	25.704	.494	1.51645
MF	.413	.525	1.950	33	.060	2.13092
			1.931	30.453	.063	2.13092
A	.401	.531	.579	33	.567	.75855
			.571	29.708	.572	.75855
IR	.599	.444	-.300	33	.766	-.68092
			-.287	23.382	.776	-.68092
SI	.480	.493	.849	33	.402	1.06908
			.819	24.905	.421	1.06908
BDI_diff	2.044	.162	-1.417	32	.166	-5.80208
			-1.374	23.240	.183	-5.80208
CDI_diff	2.505	.123	1.607	32	.118	5.03125
			1.554	22.479	.134	5.03125
EDEQ_restraint_diff	.005	.945	-.258	32	.798	-.13472
			-.259	31.859	.797	-.13472
EDEQ_eating_diff	.326	.572	.807	32	.426	.32083
			.804	30.966	.428	.32083
EDEQ_shape_diff	.638	.430	-.138	32	.891	-.04210
			-.140	31.311	.890	-.04210
EDEQ_weight_diff	.010	.921	.387	32	.701	.13681
			.387	31.393	.701	.13681
SES_diff	.084	.774	.151	32	.881	1.03819
			.151	31.283	.881	1.03819
DB_Burden_diff	.745	.395	.624	30	.537	.12680
			.614	26.221	.544	.12680
DB_Beneift_diff	.236	.630	1.530	30	.136	.39853
			1.529	29.407	.137	.39853
DB_Avoid_diff	1.225	.277	-.546	30	.589	-.11597
			-.556	29.362	.583	-.11597
TERS_diff	3.597	.067	.060	32	.953	.09722
			.061	27.572	.951	.09722

5. T-tests on difference scores (post-follow up) comparing MET and TAU

Group Statistics

	Group	N	Mean	Std. Deviation
ANSOCQ_postfu_diff	MET group	17	1.4176	12.34272
	TAU group	11	-1.9091	10.95860
Fupost_DT	MET group	17	-1.0588	4.03842
	TAU group	11	.8182	5.49214
Fupost_B	MET group	17	.3529	1.90201
	TAU group	11	.0909	3.70012
Fupost_BD	MET group	17	-.2353	4.14622
	TAU group	11	.7727	5.63633
Fupost_I	MET group	17	-1.7647	6.21017
	TAU group	11	-.5909	4.98407
Fupost_P	MET group	17	-.7294	2.74221
	TAU group	11	.7727	2.60157
Fupost_ID	MET group	17	-.2647	2.29209
	TAU group	11	-.8182	2.48267
Fupost_IA	MET group	17	-.7588	4.79727
	TAU group	11	-.6364	5.35299
Fupost_MF	MET group	17	-.5882	2.55095
	TAU group	11	-.6364	3.23335
FUpost_A	MET group	17	-.6471	3.12132
	TAU group	11	.1818	4.00170
Fupost_IR	MET group	17	.1765	3.66120
	TAU group	11	-2.4091	5.14207
Fupost_SI	MET group	17	.1765	3.22559
	TAU group	11	.0000	2.96648
FUpost_Restraint	MET group	17	.5118	1.43522
	TAU group	11	-.1273	1.45402
FUpost_Eating	MET group	17	.4559	.97578
	TAU group	11	-.1273	1.34543
FUpost_shape	MET group	17	.0294	.70230
	TAU group	11	-.0909	1.14440
FUpost_Weight	MET group	17	-.0471	.72983
	TAU group	11	.0727	1.35432
FUpost_SES	MET group	17	-2.1765	23.32712
	TAU group	11	-6.9091	24.53347
FUpost_Benefit	MET group	15	-.3158	.72186
	TAU group	9	-.0389	.80757
FUpost_Burden	MET group	15	-.2222	.45402
	TAU group	9	-.3889	.45886
FUpost_Avoid	MET group	15	.1667	.67960
	TAU group	9	-.4841	.51974

Independent Samples Test

	Levene's Test for Equality of Variances		t-test for Equality of Means			
	F	Sig.	t	df	Sig. (2-tailed)	Mean Difference
ANSOCQ_postfu_diff	.046	.832	.727	26	.474	3.32674
			.746	23.330	.463	3.32674
Fupost_DT	.679	.418	-1.043	26	.307	-1.87701
			-.976	16.926	.343	-1.87701
Fupost_B	1.783	.193	.247	26	.807	.26203
			.217	13.466	.831	.26203
Fupost_BD	.012	.913	-.546	26	.590	-1.00802
			-.510	16.932	.616	-1.00802
Fupost_I	.220	.643	-.526	26	.604	-1.17380
			-.552	24.641	.586	-1.17380
Fupost_P	.069	.796	-1.444	26	.161	-1.50214
			-1.461	22.333	.158	-1.50214
Fupost_ID	.082	.777	.604	26	.551	.55348
			.594	20.227	.559	.55348
Fupost_IA	.537	.470	-.063	26	.950	-.12246
			-.062	19.759	.952	-.12246
Fupost_MF	.048	.828	.044	26	.965	.04813
			.042	17.866	.967	.04813
FUpost_A	.057	.814	-.614	26	.544	-.82888
			-.582	17.708	.568	-.82888
Fupost_IR	.614	.441	1.557	26	.132	2.58556
			1.447	16.525	.167	2.58556
Fupost_SI	.034	.854	.146	26	.885	.17647
			.149	22.810	.883	.17647
FUpost_Restraint	.037	.850	1.145	26	.263	.63904
			1.142	21.294	.266	.63904
FUpost_Eating	.353	.557	1.331	26	.195	.58316
			1.242	16.753	.231	.58316
FUpost_shape	1.858	.185	.346	26	.732	.12032
			.313	14.914	.759	.12032
FUpost_Weight	.652	.427	-.305	26	.763	-.11979
			-.269	13.807	.792	-.11979
FUpost_SES	.213	.648	.514	26	.612	4.73262
			.508	20.696	.617	4.73262
FUpost_Benefit	.007	.935	-.871	22	.393	-.27694
			-.846	15.477	.411	-.27694
FUpost_Avoid	.053	.820	2.465	22	.022	.65079
			2.639	20.503	.016	.65079

6. T-tests on difference scores (pre-follow up) comparing MET and TAU

Group Statistics

	Group	N	Mean	Std. Deviation
ANSOCQ_prefu	MET group	17	9.8412	15.03816
	TAU group	11	4.5455	14.59872

Independent Samples Test

	Levene's Test for Equality of Variances		t-test for Equality of Means			
	F	Sig.	t	df	Sig. (2-tailed)	Mean Difference
ANSOCQ_prefu	.008	.928	.920	26	.366	5.29572
			.926	21.972	.364	5.29572

Group Statistics

	Group	N	Mean	Std. Deviation
DT_fupre	MET group	17	-2.7765	3.13439
	TAU group	11	-1.7727	4.17950
B_fupre	MET group	17	-1.4118	5.36259
	TAU group	11	-3.0000	5.07937
BD_fupre	MET group	17	-.8824	3.77297
	TAU group	11	.7273	5.90069
I_fupre	MET group	17	-2.4118	6.79208
	TAU group	11	-1.7727	5.69809
P_fupre	MET group	17	.0353	3.24364
	TAU group	11	.3182	1.64731
ID_fupre	MET group	17	-.5588	2.22122
	TAU group	11	-.4545	3.04512
IA_fupre	MET group	17	-2.4647	6.13055
	TAU group	11	-4.0000	5.76194
MF_fupre	MET group	17	-.4118	2.73995
	TAU group	11	-1.3636	3.44304
A_fupre	MET group	17	-1.3529	3.23924
	TAU group	11	-.1818	3.62128
IR_fupre	MET group	17	-1.4706	4.97641
	TAU group	11	-.7727	6.67594
SI_fupre	MET group	17	-1.2353	3.75049
	TAU group	11	-2.1818	2.48267

Independent Samples Test

		Levene's Test for Equality of Variances		t-test for Equality of Means			
		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference
DT_fupre	Equal variances assumed	1.100	.304	-.726	26	.474	-1.00374
	Equal variances not assumed			-.682	17.181	.504	-1.00374
B_fupre	Equal variances assumed	.658	.424	.781	26	.442	1.58824
	Equal variances not assumed			.790	22.358	.438	1.58824
BD_fupre	Equal variances assumed	2.316	.140	-.884	26	.385	-1.60963
	Equal variances not assumed			-.805	15.321	.433	-1.60963
I_fupre	Equal variances assumed	.631	.434	-.258	26	.798	-.63904
	Equal variances not assumed			-.268	24.105	.791	-.63904
P_fupre	Equal variances assumed	4.144	.052	-.267	26	.792	-.28289
	Equal variances not assumed			-.304	24.954	.764	-.28289
ID_fupre	Equal variances assumed	1.118	.300	-.105	26	.917	-.10428
	Equal variances not assumed			-.098	16.825	.923	-.10428
IA_fupre	Equal variances assumed	.049	.826	.662	26	.514	1.53529
	Equal variances not assumed			.671	22.478	.509	1.53529
MF_fupre	Equal variances assumed	.607	.443	.812	26	.424	.95187
	Equal variances not assumed			.772	17.987	.450	.95187
A_fupre	Equal variances assumed	.043	.838	-.892	26	.380	-1.17112
	Equal variances not assumed			-.871	19.730	.394	-1.17112
IR_fupre	Equal variances assumed	.071	.793	-.317	26	.754	-.69786
	Equal variances not assumed			-.297	17.102	.770	-.69786
SI_fupre	Equal variances assumed	1.881	.182	.737	26	.468	.94652
	Equal variances not assumed			.803	25.960	.429	.94652

Group Statistics

	Group	N	Mean	Std. Deviation
FUPRE_Restraint	MET group	17	-1.7118	1.21134
	TAU group	11	-1.9455	1.59020
Fupre_eating	MET group	17	-.7088	1.11653
	TAU group	11	-1.4364	1.65062
FUPre_shape	MET group	17	-.5294	1.05931
	TAU group	11	-.6193	1.15666
FUPre_weight	MET group	17	-.6353	1.06826
	TAU group	11	-.5545	1.60957

Independent Samples Test

	Levene's Test for Equality of Variances		t-test for Equality of Means			
	F	Sig.	t	df	Sig. (2-tailed)	Mean Difference
FUPRE_Restraint	1.154	.292	.441	26	.663	.23369
			.416	17.387	.683	.23369
Fupre_eating	.726	.402	1.396	26	.175	.72754
			1.284	15.925	.217	.72754
FUPre_shape	.155	.697	.212	26	.834	.08991
			.208	20.100	.838	.08991
FUPre_weight	3.123	.089	-.160	26	.874	-.08075
			-.147	15.715	.885	-.08075

Group Statistics

	Group	N	Mean	Std. Deviation
FUpre_SES	MET group	17	14.9412	28.97946
	TAU group	11	7.1364	33.15275

Independent Samples Test

	Levene's Test for Equality of Variances		t-test for Equality of Means			
	F	Sig.	t	df	Sig. (2-tailed)	Mean Difference
FUpre_SES	.739	.398	.658	26	.516	7.80481
			.639	19.373	.530	7.80481

Group Statistics

	Group	N	Mean	Std. Deviation
Fupre_Burden	MET group	16	.1204	.58864
	TAU group	10	-.3263	.48192
FUpre_Benefit	MET group	16	-.0789	.93303
	TAU group	10	-.0700	.63809
FUpre_AVOID	MET group	16	.0580	.68174
	TAU group	10	-.2929	.85346

Independent Samples Test

	Levene's Test for Equality of Variances		t-test for Equality of Means			
	F	Sig.	t	df	Sig. (2-tailed)	Mean Difference
Fupre_Burden	.650	.428	2.011	24	.056	.44675
			2.109	22.087	.047	.44675
FUpre_Benefit	.491	.490	-.026	24	.979	-.00891
			-.029	23.715	.977	-.00891
FUpre_AVOID	1.301	.265	1.159	24	.258	.35089
			1.099	16.076	.288	.35089

MET Treatment Process

1. Contemplation ladders

Ladder 1

Descriptive Statistics

	Mean	Std. Deviation	N
Gp1_ladder1	6.2222	3.45655	18
Gp2_ladder1	5.9444	3.29835	18
Gp3_ladder1	6.6111	3.43235	18
Gp4_ladder1	7.4167	3.37922	18

Tests of Within-Subjects Effects

Measure: MEASURE_1

Source		Type III Sum of Squares	df	Mean Square	F	Sig.
ladder1	Sphericity Assumed	22.122	3	7.374	5.200	.003
	Greenhouse-Geisser	22.122	2.675	8.270	5.200	.005
	Huynh-Feldt	22.122	3.000	7.374	5.200	.003
	Lower-bound	22.122	1.000	22.122	5.200	.036
Error(ladder1)	Sphericity Assumed	72.316	51	1.418		
	Greenhouse-Geisser	72.316	45.476	1.590		
	Huynh-Feldt	72.316	51.000	1.418		
	Lower-bound	72.316	17.000	4.254		

Tests of Within-Subjects Contrasts

Measure: MEASURE_1

Source	ladder1	Type III Sum of Squares	df	Mean Square	F	Sig.
ladder1	Linear	16.256	1	16.256	8.151	.011
	Quadratic	5.281	1	5.281	4.597	.047
	Cubic	.584	1	.584	.526	.478
Error(ladder1)	Linear	33.906	17	1.994		
	Quadratic	19.531	17	1.149		
	Cubic	18.878	17	1.110		

Ladder 2

Descriptive Statistics

	Mean	Std. Deviation	N
Gp1_ladder2	5.6667	3.69419	18
Gp2_ladder2	6.4444	3.74515	18
Gp3_ladder2	6.9444	3.60510	18
Gp4_ladder2	7.4444	3.58464	18

Tests of Within-Subjects Effects

Measure: MEASURE_1

Source		Type III Sum of Squares	df	Mean Square	F	Sig.
ladder2	Sphericity Assumed	31.042	3	10.347	5.088	.004
	Greenhouse-Geisser	31.042	1.710	18.153	5.088	.016
	Huynh-Feldt	31.042	1.882	16.492	5.088	.013
	Lower-bound	31.042	1.000	31.042	5.088	.038
Error(ladder2)	Sphericity Assumed	103.708	51	2.033		
	Greenhouse-Geisser	103.708	29.070	3.568		
	Huynh-Feldt	103.708	31.998	3.241		
	Lower-bound	103.708	17.000	6.100		

Tests of Within-Subjects Contrasts

Measure: MEASURE_1

Source	ladder2	Type III Sum of Squares	df	Mean Square	F	Sig.
ladder2	Linear	30.625	1	30.625	9.035	.008
	Quadratic	.347	1	.347	.169	.686
	Cubic	.069	1	.069	.106	.749
Error(ladder2)	Linear	57.625	17	3.390		
	Quadratic	34.903	17	2.053		
	Cubic	11.181	17	.658		

Ladder 3

Descriptive Statistics

	Mean	Std. Deviation	N
Gp1_ladder3	6.1111	3.44518	18
Gp2_ladder3	6.1667	3.92953	18
Gp3_ladder3	6.7778	3.60646	18
Gp4_ladder3	7.2222	3.49042	18

Tests of Within-Subjects Effects

Measure: MEASURE_1

Source		Type III Sum of Squares	df	Mean Square	F	Sig.
ladder3	Sphericity Assumed	15.153	3	5.051	2.067	.116
	Greenhouse-Geisser	15.153	2.769	5.473	2.067	.122
	Huynh-Feldt	15.153	3.000	5.051	2.067	.116
	Lower-bound	15.153	1.000	15.153	2.067	.169
Error(ladder3)	Sphericity Assumed	124.597	51	2.443		
	Greenhouse-Geisser	124.597	47.068	2.647		
	Huynh-Feldt	124.597	51.000	2.443		
	Lower-bound	124.597	17.000	7.329		

Tests of Within-Subjects Contrasts

Measure: MEASURE_1

Source	ladder3	Type III Sum of Squares	df	Mean Square	F	Sig.
ladder3	Linear	14.003	1	14.003	6.567	.020
	Quadratic	.681	1	.681	.272	.609
	Cubic	.469	1	.469	.174	.682
Error(ladder3)	Linear	36.247	17	2.132		
	Quadratic	42.569	17	2.504		
	Cubic	45.781	17	2.693		